

AN ACCOUNT
OF THE
RELEASED RHINOS
IN MANAS NATIONAL PARK,
- THE THIRD YEAR
[APRIL 2010 - MARCH 2011]



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INDIAN RHINO VISION (IRV) 2020 PROGRAM



Introduction :

Indian Rhino Vision (IRV) 2020 a program for the long term conservation of the one horned



Plate1- Monitoring in progress

rhinoceros in Assam is developed and implemented by the Forest Department, Government of Assam with the support of WWF and IRF. The program aims to increase rhino population in new / potential habitats all throughout the state of Assam by the year 2020 and is supported by a number of organizations including the USFWS. The BTC also extends its support to the program. As a first step, the training-cum-translocation was completed in April 2008 wherein two male rhinos captured in Pobitora WLS were translocated and released in Manas NP and has been observed to have adapted well to the new habitat

demonstrating normal behavior and good health conditions. The two rhinos got company in December 2010 when two females were translocated to Manas from Pobitora and then again in January 2011 four more rhinos (two females and two males) have been translocated to the park. The immediate plan is to populate Manas NP with twelve more rhinos to reach a total population of at least twenty rhinos 2012 through wild to wild translocations from Pobitora WLS and Kaziranga NP.

The two male rhinos have been tracked and observed in Manas by the monitoring team since the time of release and has now completed three years in Manas NP since its release in the park on 13th April, 2008. Five of the six new rhinos released in Manas during December 2010 and January 2011 are fitted with radio collars and is being tracked continuously since their time of release in the park. The present account is for the period from 1st April 2010 to 31st March 2011. The rhinos are fitted with VHF collar and tracking has been done currently using four sets of antennae and receiver systems and also through physical demarcation. One rhinos also has a UHF unit which is put on trial use to test its efficacy. The rhinos introduced during this phase have been ear notched for easy physical identification. The monitoring team in Manas monitors the rhinos under the experienced leadership of FDTP Manas, Mr. A. Swargowari and with technical support from the WWF team. The activities are conducted under the guidance and supervision of the Translocation Core Committee (TCC).

Release of rhinos in Manas NP :

During this reporting period six more rhinos (three males and three females) have been released in the park in two batches. The first batch of one adult female and its female calf was released on 29th Dec., 2010 and the second batch of one sub-adult male, one adult female and one adult female with its male calf was released on 18th Jan 2011, all freely released from Pobitora WLS. For the very first time four rhinos were released simultaneously in Manas NP under IRV2020. All the rhinos during the first twenty-four hours were observed closely and it can be stated that all of them broadly had a tendency to move south from its release area

Buraburijhar and occupied areas close to Kuribeel and Rhino camp during the first couple of days.

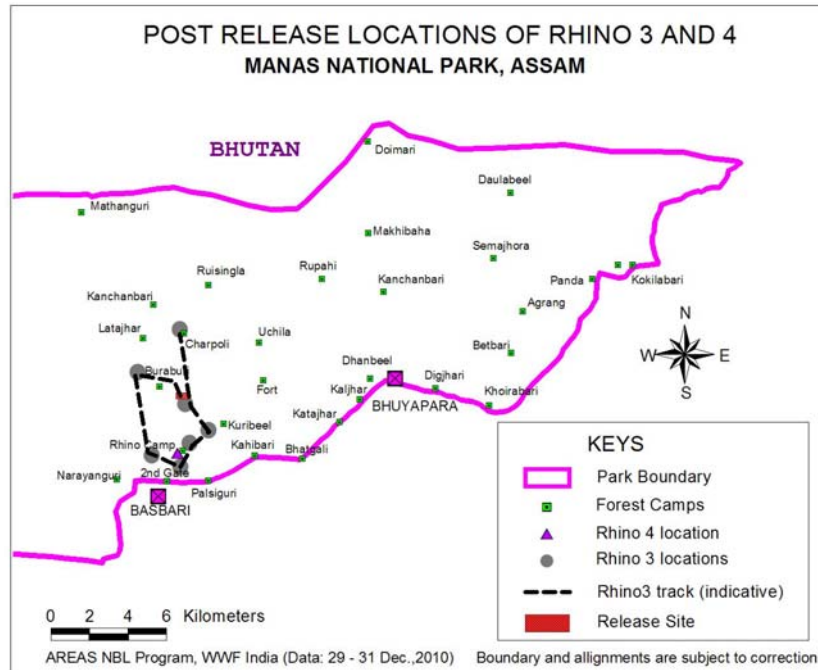


Fig.1 – Map showing the post-release distribution of Rhino3 & 4

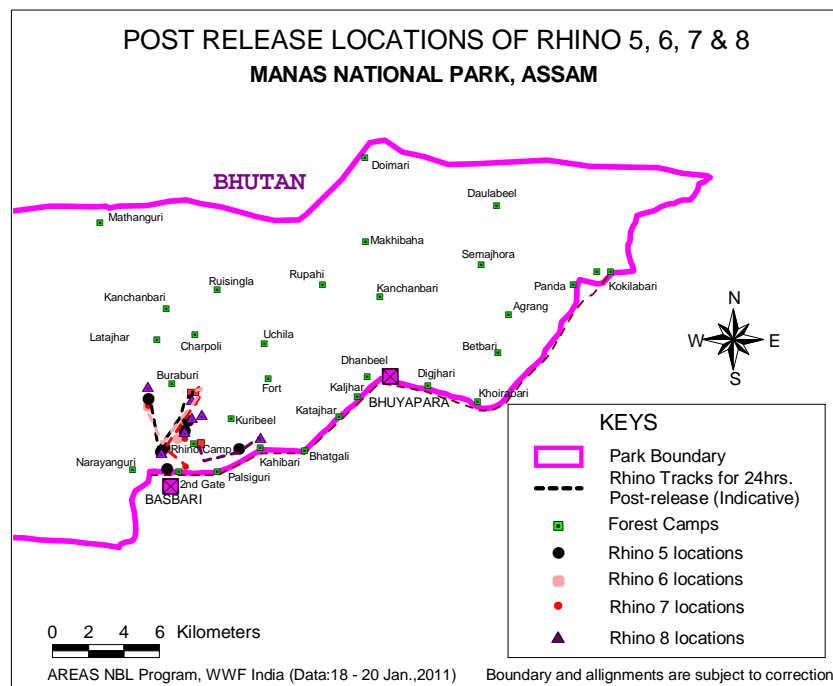


Fig.2 – Map showing the post-release distribution of Rhino5, 6, 7 & 8



Unlike the first two rhinos released in Manas NP on 13th April 2008 that ran for more than 3.5kms aerially immediately after release (IRV2020, Dec.2008) the four rhinos released in January 2011 were comparatively quite stable after release and is estimated to have explored a distance of only about 3kms. aerially on an average after the release (Fig.2). The stability may be due to the feeling of the presence of other rhinos in the area which was missing during the release of the first batch in 2008.



Photo – Dipankar G. / WWF-India

Plate2- Rhino3 & 4 released in Manas



Photo – Publicity / Assam Forest Dept.

Plate3- Rhino6 & 7 released in Manas



Photo – C.R. Bhojora / AFD

Plate4- Rhino5 during release in Manas



Photo – Deba D. / WWF-India

Plate5- Rhino8 after release in Manas

Habitat use and Ranging:

At present there are eleven rhinos in Manas of which three females are from the rehabilitation program. The remaining eight rhinos are introduced under the IRV2020 program through wild to wild translocation from Pobitora WLS. During this period of reporting, the Rhino1 and Rhino2 spent most of the time in the areas under Basbari range of the park along with the rehabilitated females. After the release of new rhinos it has been seen that except Rhino4, Rhino5 and Rhino1 all the rhinos are occupying the central areas of the park. The Rhino1 moved from the central parts of the park towards the eastern range (Bhuyapara) during the early part of December2010 and till March2011 has been observed mostly in that area. Rhino5, a male after



about 42 days of its release moved towards the central eastern areas of the park under Bhuyapara and has also reached up to Kokilabari area and is occupying those areas since then. The Rhino1 strayed out of the park boundary quite significantly in three occasions, twice close to the Basbari range for a maximum distance of about 8 kms. during the month of November 2010. During mid-December 2011, Rhino1 was occupying areas close to Kokilabari and occasionally strayed out of the National Park area to the adjoining Daodhara RF and once it even crossed the National Highway 152 connecting Bhutan and strayed out for a distance of about 8kms. east of the park boundary to be guided back. Surprising for us was Rhino4, it was the female calf of Rhino3 and was not radio-collared in anticipation that as they will be released together the calf will be along with the mother and it need not be radio collared. During release which was simultaneous they came close to each other but did not unite and during the course of monitoring it was observed that the mother and calf has united after about five days of release. Even though they got united as observed they were very seldom close by and the calf was very rarely sighted as it moved away in the event of any small disturbance. After about 25 days of release during the second half of February 2011 it was discovered that the calf has moved a long distance (approx 10kms. west) from its mother towards the west negotiating two big rivers Manas & Beki to reach the Gabharukhunda area and since then it is occupying that area where none of the other rhinos have ever gone. Rhino3 on three occasions have been camera trapped during the tiger estimation exercise in the park in the extreme northern part of the park along the Doimari road. This has been a very interesting finding as none of the rhinos were earlier detected to have visited those areas and telemetry signals are not received from those areas due to dense woodlands. It is still a query for us as to why the rhino went up to such a terrain and vegetation, maybe it was still exploring as it was quite new to the area, maybe it was searching for its calf (Rhino4) or maybe it must have sense the presence of a salt lick in the vicinity, only further observation may provide us with a better insight.

Till November 2010 no distinct territoriality was observed between the two males, Rhino1 & 2 even though they had some unique ranging patterns during the period similar to what was observed during the previous years. After more than 31 months of its release in Manas, Rhino1 changed its activity centre towards the east and till the end of the reporting period is ranging in the new area for about 90 days without returning to its earlier preferred areas.

During April 2010, the area received a good amount of rainfall resulting in tall and dense grasslands up to the southern boundary of the park and the rhinos mostly preferred to occupy the areas close to Kuribeel which offers good wallowing sites as well as some open spaces with grasses like *Cynodon dactylon*, *Imperata cylindrica*, etc. During May, it was observed that the rhinos changed their location a bit and shifted towards the south boundary spending a lot of time close to the Rhino and Palsiguri camp comprising mainly of *Saccharum species*, *Imperata cylindrica*, *Leersia hexandra*, etc. Cultivation of paddy in the adjoining area also encouraged the rhinos to stray out to the nearby Giati village near Basbari range office towards the western open end of the electric fence along with the females for a couple of times. Though it was Rhino1 that associated with the females pre-dominantly however it was observed for a couple of

occasions that all the rhinos in the park (males & females) come out of the park in the late evening almost as a group. Rains became more intense resulting in deteriorating road and field conditions making regular monitoring and patrolling very challenging.

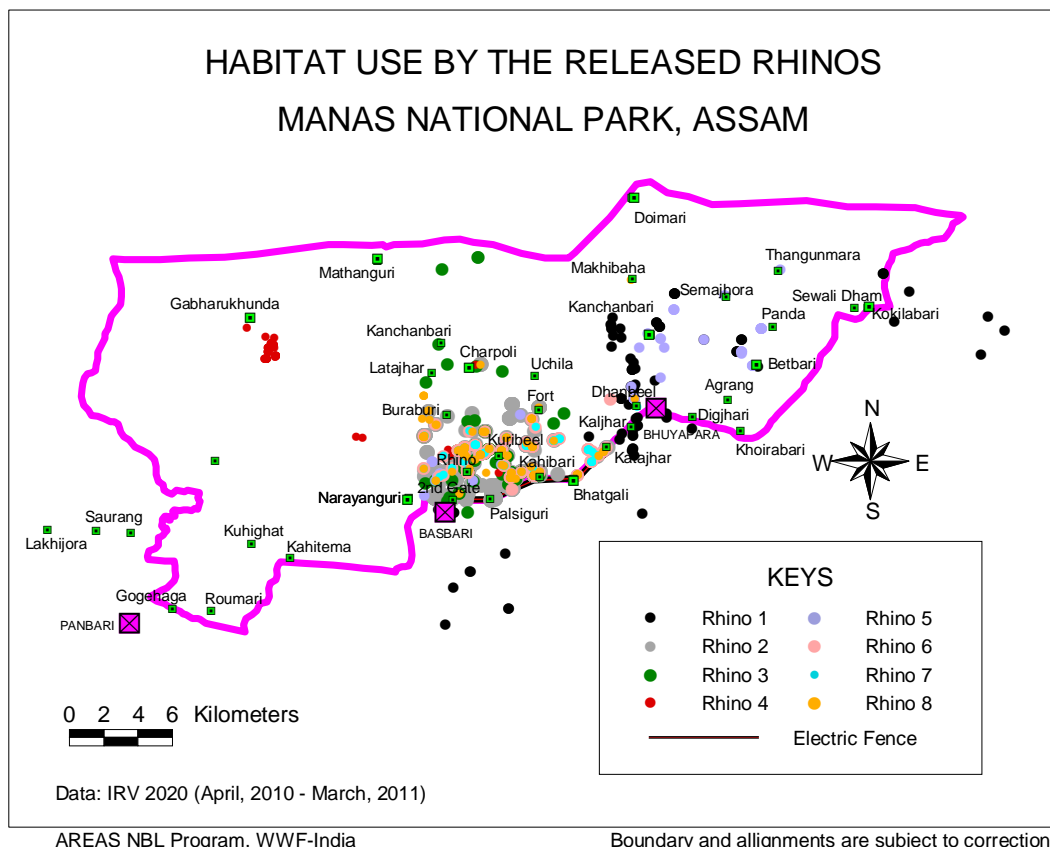


Fig.2 – Map showing location of rhinos recorded during the period April10 to March, 2011

During the month of June and July 2010, the rhinos were seen to prefer the short and medium height grass areas and small sized and shallow water bodies. During this period the park was affected by floods and all the low lying areas were waterlogged forcing the rhinos to occupy the higher areas close to Rhino camp, Palsiguri, Kuribeel and Latajhar. There was no distinct territory observed between Rhino1 & 2 and both of them along with the females commonly used the areas in and around Latajhar, Kuribeel, Langpati, Palsiguri, Kahibari and Bhatgali. Latajhar and 2nd Gate area was a preferred area for Rhino2 and Palsiguri, Kahibari and Kuribeel was more preferred by Rhino1 and the females. The rhinos made several attempts during these months to stray out to the adjoining areas near the Basbari range office particularly during the night and was even observed to be wallowing in the wet and muddy paddy fields damaging the crops.

In August 2010, the two male rhinos started to occupy two distinct areas providing indication of territoriality and one tried to dominate over the other. Rhino1 continued occupying the areas in

and around Palsiguri, Kahibari and Kuribeel in the company of the females and the Rhino2 was observed alone using the Tinmile and Langpati area on the eastern bank of river Beki. A similar pattern was continued during the months of September and October. At times overlapping of range area was also observed but whenever they came close to each other fights to dominate was common. The fights were normally observed during the late afternoon and evening time which lasted from a couple of minutes to about fifteen minutes. Rhino2 strayed a number of times to the adjoining Giati village and once strayed out through the eastern open end of the electric fence to Katajhar. Rhino1 strayed out with the females through the western open end of the fence to the adjoining Fatemabad tea estate to the south where they preferably used an undisturbed swamp area dominated by *Alpinia allughus* and surrounded by short grasses like *Leersia hexandra* and *Cyperusiria* species within the estate.

During November it was observed that Rhino1 associated very actively with the rehabilitated rhinos especially with the younger ones 'Ganga & Jamuna' and preferred to occupy the areas along the southern boundary in between 2nd Gate and Katajhar. During the whole month courtship was observed between Rhino1 and the sub-adult females and the male was often observed to be quite aggressive. The females in order to escape the aggressive male strayed out to the adjoining villages and on two such occasions when Rhino1 went following them strayed out to a long distance once to a distance of about 4kms and the second time for about 10kms from the south boundary of the park to be chased and guided back. Rhino2 was all on his own and during this month as the areas were slowly beginning to dry it moved a bit to the north and east to occupy the areas close to Buraburi, Kuribeel and Fort.

During December 2010, the territoriality observed during the previous months became more



Plate6- Rhino4 at Panbari

distinct and three major fights were observed between the two male rhinos during the first three days of the month. Rhino2 was seen to use areas near Charpoli, Buraburi, Kuribeel and Fort and also associate with all the female rhinos probably dominating over Rhino1. Rhino1 was mostly using areas in and around Palsiguri, Kahibari and Bhatgali during the first few days of the month and gradually moved eastwards to the areas under Bhuyapara range during the first week. Bhuyapara area was not much used by Rhino1 earlier and it was exploring different areas during the month and was observed to have spent time close to Dhanbeel, Kanchanbari, Digjhari, Kaljhar and Betbari. During its explorations it also crossed the eastern park boundary to enter Daodhara RF the adjoining forest area as detected on 19th December 2010. It tried to move further east by crossing National Highway 152 but its movement was contained by the guards and chased back to the park. On 29th December 2010 two females were released and they joined the rest of the rhinos. After release the adult female (Rhino3) was observed to have moved south and occupied the areas close to Kuribeel and even came near to the 2nd Gate in the early morning hours of 30th December 2010. Rhino4 which is the calf of Rhino3 could not be tracked easily as it did not have a radio transmitter and only one confirmed



information about its ranging could be recorded for the month on 31st December 2010 when it was sighted near Rhino camp.

As seen from the previous month, Rhino1 continued exploring areas in the eastern part of the park under Bhuyapara range during January 2011 and preferred using areas like Kaljhar, Rupahi, Betbari, Kanchanbari, Dhanbeel, Makhibaha and near Bhuyapara range office. The rhino also easily strayed out in the night to the adjoining agriculture fields near Kaljhar, Betbari and the range as the boundary is completely open and accessibility is poor for the patrolling and monitoring team. On one occasion the rhino strayed out through the Kokilabari area for an aerial distance of 10kms to the east and had to be chased back to the park.

Rhino2 was the lone male in the Basbari area till the mid of the month and preferred to use areas like Charpoli, Forte, Kuribeel and Katajhar in the company of the Rhino3 and the rehabilitated females.

Rhino3 that was released in the park on December10, for most of the time used the habitats in the central areas of Basbari range however on 17th and 18th January 2011 it moved north and reached very close to the Indo-Bhutan border. This is confirmed as the rhino got camera trapped on the Doimari road during the tiger estimation exercise. This abrupt move to the north may be as a result of the burning of the grasslands during that period as a part of the annual management exercise. Rhino4 was tracked using physical signs like footmarks, dung and association with its mother, physical observation was very difficult as it moved away in the event of the slightest disturbance and whenever it was approached on elephants. Use of the areas close to Buraburi (release area), Kuribeel, Rhino camp and Langpati (eastern bank of Beki river) could be confirmed. On 28th January 2011 evidence of Rhino4 in the form of dung and foot tracks could be detected in the northern part of the Narayanguri area (within Beki river system) and after a thorough search following the tracks it could be confirmed that the rhino returned back towards Basbari the very next day.

A new batch of rhinos was released in Manas on 18th January 2011 that comprised of two adult females, one adult male and a male sub-adult. The new batch after release preferred to use the area around Langpati, 2nd Gate, Kuribeel and Bhatgali during the initial period. Rhino6 on one occasion was observed to have moved eastwards towards Rupahi in Bhuyapara on 31st January 2011.

During February, Rhino1 continued using the areas under Bhuyapara range and preferred to use the areas close to Dhanbeel, Kaljhar, Makhibaha and Kanchanbari. In Bhuyapara it preferred the grasslands near Madanbandh and Kakoidanga that comprises of grasses like *Saccharum* species, *Phragmites karka*, *Impereta cylindrica*, etc as new shoots were emerging after the burning. Here the rhino preferred to wallow in small sized pits surrounded by relatively open area like Abudara nulla, Madanbandh, Gendabil, etc and was also seen to enjoy the company of buffaloes. During this month it strayed to the adjoining agriculture areas and cattle sheds close to Kaljhar and Bhuyapara range.

The collar of Rhino2 dropped off during the first week of February 2011 and thereafter was monitored following signs and evidences. It continued to use the central areas of Basbari range in the company of the females specially Rhino6, Ganga and Jamuna. During this month, it was observed that Rhino2 along with the sub-adult rehabilitated rhino's Ganga and Jamuna used the area within the rhino enclosure (boma) for a limited period.



Plate7- Rhino1 at Kasimdoha



Plate8- Rhino2 at Palsiguri



Plate9- Rhino3 at Doimari road



Plate10- Rhino6&7 at Kuribeel

Rhino3, Rhino6 and Rhino7 preferably used the southern and central areas of Basbari range close to Rhino camp, Palsiguri, Kahibari, Bhatgali and Kuribeel. Rhino6 & 7 was observed to have strayed out of the park along Pahumara river close to Katajhar camp on three occasions.

Rhino8 was normally seen to be all alone and preferred to use areas close to Fort, Kuribeel, Buraburi and Langpati in the central part of the Basbari range. For a brief period during the mid of the month the rhino also visited the central parts of Bhuyapara range specially close to Makhibaha and Dhanbeel.

Rhino5 during this month preferred to use the areas close to Bhatgali, Kuribeel, Fort, Buraburi and Langpati. This rhino was observed at times to be sharing the same habitat and wallow pits with Rhino3, Rhino6 and Rhino7.

There was very little confirmed information on Rhino4 for the month. On 20th February 2011, a team of forest guards could confirm its presence in the Gabharukhunda area using the waterbodies and grasslands on the banks of the river Silsila a channel of river Manas under the western range Panbari. Since then the rhino has been observed to be using the area after shifting for about 10kms aerially towards the west from its release area.



Plate11 - Rhino8 at Beki river bank



Plate12- Rhino8 near Thangunmara

The male Rhino1 during March 2011 continued using the habitats under Bhuyapara range and was using the Kanchanbari, Dhanbeel, Makhibaha and Kaljhar area. The Rhino1 for a couple of times during the month also came out of the park in the Kaljhar area.

The male Rhino2 was primarily observed to use Koribeel, Fort, Boraborijhar, Kahibari and Katajhar area. It also once strayed out to the adjoining areas in Katajhar. It was at times also seem to be associating with Rhino6, Ganga and Jamuna during the month.

The female Rhino3 was mostly found alone using Koribeel, Kahibari, Buraburi and Rhino camp area. The female Rhino4 was observed to have continued using the Gabharukhunda area for the entire month. It was using an area of about 2 to 3 sq. kms and was using the swampy and grasslands comprised of *Saccharum* species, *Alpinia allughus*, *Phragmitis karka*, etc. It was observed that the rhino preferred to wallow in small rivulets with flowing water.

Rhino5 on 7th March 2011 was detected to have shifted eastwards and start using the areas in the central and eastern parts of Bhuyapara preferably near Makhibaha, Kanchanbari and Panda. It also used areas close to Betbari and Digjhari and strayed out close to Kokilabari and panda camp. It probably shifted eastwards due to the dominance of Rhino2 in the central parts of Basbari that it earlier used. The rhino is probably also avoiding Rhino1 who is preferably using the southern areas of Bhuyapara.

Rhino 6, 7 & 8 continued to use the southern and central areas under Basbari range without any significant changes as observed in the previous month.

During this period, it was observed that Rhino1 explored more areas and has shifted its centre of activity to the east. Calculating the home range in GIS using MCP method it was found that Rhino1 used an area of about 165sq.kms within the park boundary and an area of 340sq.kms in total considering the area used outside the park boundary. The Rhino2 used an area of about



51sq.kms during this period which is almost similar to the earlier year. The other 6 rhinos are still in an exploratory stage as they are in the park for only about a couple of months and the area used has been found to be 65, 74, 112, 40, 34 & 97 square kilometers respectively.

Stray and Stray Management :

During April,2010 to December,2010 before the release of more rhinos in Manas it has been recorded that Rhino1 & Rhino2 strayed out of the park for about 50 times which is significantly higher than the previous year (22 times). Rhino1 was more used to straying and normally accompanied the rehabilitated females during the summer season especially in the areas close to Basbari range not protected by the electric fence. The rhinos on an average strayed out to a distance of about 500mts from the boundary and normally return on their own after about 2 to 3 hours after wallowing and grazing in the open areas. On two occasions Rhino1 strayed out for a long distance under Basbari range once reaching close to Gobardhana at an aerial distance of about 8kms. from the boundary and the second time for about 4kms. On both the occasions the rhino had to be driven back to the park by the authorities taking all possible care with the help and support of the villagers. During one of the occasions one forest guard (Azad Ali) and a local lady from Gola village got injured. This long distance straying took place in the month of November 2010 and it was observed that during those days Rhino1 was trying to mate with Ganga and Jamuna but they were always not quite receptive and to escape the aggressive male often ran into the village areas. The male followed the escaping females and on two occasions went off to a long distance probably searching for the females.

Since mid-December 2010, Rhino1 has been primarily occupying the areas under Bhuyapara range and is occasionally straying out to the adjoining agricultural fields accompanying the cattle's and buffaloes in the evening hours and at times also to feed in the nearby pulse cultivation in the night specially near to Kaljhar, Digjhari, Betbari and Panda camps.

In the Bhuyapara part also the Rhino1 strayed to a long distance on two occasions. On 7th January2011, Rhino1 was detected to stray out to a long distance to the east for an aerial distance of about 8kms. crossing National Highway 152 to reach Bongaon Tea Estate. This might have resulted as the rhino was experiencing disturbance in the area it was occupying. The rhino was guided back by the park authorities with the help of local community, MMES members and staff from the Baksa Territorial Division. In the second instance on 22nd January 2011, the rhino reached Pakori gaon at a distance of about 6kms. south of the range office following the Kaljhar river channel.

Six more rhinos were released in Manas by January 2011 and since then it has been observed that Rhino3 strayed out close to the 2nd gate area during night hours for about four days just after release, Rhino5 strayed out for about five days during the night close to Kokilabari during the month of March 2011, Rhino 6 & 7 strayed out for about four days during the month of March 2011 near Katajhar area to feed in the pulses cultivated nearby. The new rhinos have probably strayed out as they are still in the process of adaptation trying to settle down in an area

and as the park and the agricultural fields are not clearly physically demarcated this phenomenon is not unusual as observed when Rhino1 and Rhino2 were trying to adapt themselves.

Sl. No	Month	Stray attempts made	Successful stray occasions	Location
1	April,10	8	0	
2	May,10	6	3	Gyati
3	June,10	20	5	Gyati, 2 nd gate, Kashimdaha
4	July,10	22	15	Katajhar, 2 nd gate, Gyati, Kashimdaha, Kahibari
5	August,10	23	11	Gyati, 2 nd gate, Tea State, Roharpam, Katajhar
6	September,10	10	4	Katajhar, 2 nd gate, Tea state
7	October,10	8	2	Gyati gaon
8	November,10	10	7	Roharpam, Gyati gaon, Batabari, Gobardhana
9	December,10	12	6	Katajhar, Daodhara, Betbari, Near Bhuyapara range, Kaljhar, Khoirabari
10	January, 2011	20	12	Kokilabari, Bongaon, Daodhara, Betbari, Kaljhar
11	February, 2011	7	5	Kathalguri, Bhatgali, Kaljhar, Betbari
12	March, 2011	20	10	Second Gate, Rupahi, Kaljhar, Katajhar, Betbari, Kokilabari
	Total	166	77	

Table 1 - Rhino stray record



Plate13 & 14- Rhino straying during night-time

The electric fence which is about 8kms. long has played a very big role in containing the straying of the rhinos in that stretch as well as the other animals like elephants. During the last year the fence was broken down by elephants for more than hundred occasions, the breakage is comparatively less when the elephants come out of the park but is more during their return when they are usually chased back by the villagers and guards. The fence is maintained regularly with the help of the communities and the community has also realized the benefit when the fence functions at its optimum. It has been realized that the fence do not function at its

optimum if not maintained regularly and it is really herculean task to maintain a linear fence in an area like Manas which runs for eight kilometers and often tampered by humans. It has been observed that the battery do not get properly charged during the monsoon season when the cloud cover is very common and prevails for extended periods. Since, December 2010 straying is taking place primarily in the Bhuyapara range as the boundary is quite open without proper road communication. Straying of the rhinos was observed mainly during the night and the male and females went out together in a number of occasions. It was observed that the straying was not just to feed in the agriculture fields but also to the swampy areas and waterholes close to the boundary and the average distance moved from the boundary was about 0.5kms specially during the hot and humid season (June-August) similar to the earlier trends. The rhino's were successful in seventy-seven occasions to stray out of the park (Table1) among the hundred sixty-six attempts recorded.



Plate15- Staff at night vigil



Plate16- Fringe community extending support

The fringe community has played a very positive role in the maintenance of the electric fencing as well as in managing the stray incidences along with the local organizations and NGO's. Whenever the rhino strays, there is often resentment among the local communities due to damage to agriculture but the efforts to reach out to the community is showing a positive impact in most of the cases as the people play a very pro-active part in informing the stray incident and also in driving back the rhinos without causing any harm to them and co-operating with the authorities in most cases.

Behavior and Feeding :

The released rhinos were monitored closely by the team during this period and could be tracked successfully for more than 1600 occasions out of a total effort of more than 2000 occasions and of these the rhinos could be physically observed for about 1057 times (~53%).

Rhino1 till November 2010 was observed to be the dominating male often seen in the company of the all the rehabilitated females. It was often seen to accompany the females to stray out of the park and also the same wallowing space commonly the small sized pits with the females. Courtship was observed for a number of occasions with Ganga and Jamuna during the month of November 2010 but no mating incident could be observed.

Rhino2 since December 2010 is probably the dominating male using the Basbari area as the other two adult males moved out to the east. Since then he was seen to be in the company of the females both the rehabilitated ones as well as Rhino6 from the new ones. The new rhinos 3, 4, 5, 6, 7 & 8 are new to the park and are still in the process of exploration and adaptation. Of these Rhino8 is normally seen to be moving about in a solitary fashion.

All the rhinos including the new ones are observed to be using the same dung piles for defecation which are normally on a higher level and at a distance from the water sources. The rhinos use the same the same trails for the regular movement from one location to another. During this period Rhino3 & Rhino8 has been observed to be using unique wallowing pits of small dimensions; however the rest of the rhinos are seen to sharing the use of the wallowing pits. In contrast to the other rhinos, Rhino6 is seen to be using comparatively bigger sized wallowing pits and Rhino4 is using flowing water for wallowing. The rehabilitated rhinos are often seen to use the flowing river water for resting but this behavior is very rarely seen in the wild ones. The wild ones generally use the flowing water bodies for feeding on the aquatic species.



Plate17 – Wallowing in a group



Plate18 – Rhino3 in the company of elephants

During this period, it can be stated that during summer and monsoon the rhinos primarily grazed on grass and herb species like Kahi (*Saccharum spontaneum*), Ulu (*Imperata cylindrical*), Nal (*Phragmites karka*), Dubori (*Cynodon dactylon*), Bobosa (*Eleusine indica*), Digilaria species, Medelua (*Casia tora*), Hati khutura (*Amaranthus spinosus*), etc. During post-monsoon they were seen to feed on aquatic plants like Puni species (*Lemna major* and *Lemna minor*), Algae species, Water Hyacinth (*Eichornia crassipes*), Kolmou (*Ipomoea reptans*) and Dal ghah (*Hymenachne amplexicaulis*). During winter they were observed to browse and graze on almost all common grasses like Ulu, Kahi, Nal, Khagori, Barenga, Ikora (*Erianthus revanae*) and also on herbs like Bor manimuni (*Centrala asiatica*), Khutura (*Amaranthus viridis*), Bihlangani (*Amphineuron opulentum*) and Dhekia (*Diplazium esculentum*); they also fed on soft leaves of trees like Simul (*Bombyx cieba*), Palas (*Butea monosperma*), Udal (*Sterculia villosa*), Oxy (*Dillenia pentagyna*), Nuni (*Moreus* sps.) and also on a variety of shrubs, ferns and creepers. The rhinos were also seen to feed on seeds of Oxy during the monsoon period.



The rhinos after the burning of the grasslands relish on all the new and fresh emerging leaves and shoots and have been observed to have fed on the ash remains just after completion of the burning.

Acknowledgement :

We duly acknowledge the Assam Forest Department for undertaking the Indian Rhino Vision (2020) Program along with all its partners and donors viz., - WWF, IRF, USFWS and BTC. We also offer our thanks to all the members of the Task Force for Translocation of Rhinos within Assam and specially the Chief Wildlife Warden of Assam for having confidence in us and giving us the responsibility of taking forward this conservation program. We thank all the members of the TCC and its sub-groups who have helped in the implementation process in different stages and a special thanks to all the doctors from College of Veterinary Sciences, Khanapara (specially Dr. Kushal K. Sarma and Dr. Bijoy Dutta), Assam State Zoo, Aaranyak and WTI. We specially thank the support of the local community, the District administration, the Assam Police, the NGO's and the student body organizations without whose help and support it would have been very difficult to achieve success. Thanks also to Mr. S. Chand, IFS (CWLW, Assam), Mr. B.S. Bonal, IFS (Member Secretary, CZA); Dr. Susie Ellis & Dr. Bibhab Kr. Talukdar from IRF; Mr. Ravi Singh and Dr. A. Christy Williams from WWF; Mr. Fred Bagley and Mrs. M. Nagendran from USFWS; Mr. H. Choudhury and Mr. Jayanta Das from WADWT; Mr. G.C. Basumatary (CHD Forest, BTC) and Mr. Khampa Borgoyari (Deputy Chief BTC) for their continued support, encouragement and advice. Thanks to the media, Police Department, Indian Army, SSB and District Administration for their much needed support. Last but not the least we acknowledge the dedicated efforts of all the officers and frontline staff of Manas, the Conservation Volunteers, the Home Guards, members of the local NGO's. A very special thanks to the Tiger Estimation team from ATREE and WWF for their support and to the officials from WWF-India who were always very helping and supportive.




References :

1. Bonal B. S, Talukdar B.K. and Sharma A : Translocation of Rhino in Assam, *Tiger Paper*, Vol. 36, No. 1, Jan-March, 2009
2. Bonal B. S, Sharma A, Dutta D. K, Swargowari A and Bhobora. C. R : An account of the released rhinos in Manas - National Park , Assam (April - September 2008).
3. Bonal B. S, Sharma A, Dutta D. K, Swargowari A and Bhobora. C. R : An account of the released rhinos in Manas - National Park , Assam (October2008 - March 2009).
4. Dinerstein E. (2003) : The Return of the Unicorns, Columbia University Press, New York
5. Singh D.M., Sharma A., Dutta D.K., Swargowari A., Bhobora C.R. and Bonal B.S., The Released Rhinos in Manas National Park, Assam -The Second Year (April2009 - March2010), May 2010, IRV2020, Translocation Core Committee, Assam
6. Singh D.M., Sharma A. and Talukdar B.K. (January 2011) : Translocation of Rhinos within Assam : A successful first round of the second phase under Indian Rhino Vision (IRV) 2020, Translocation Core Committee Assam.
7. Singh D.M., Sharma A. and Talukdar B.K. (March 2011) : Translocation of Rhinos within Assam : A successful second round of the second phase under Indian Rhino Vision (IRV) 2020, Translocation Core Committee Assam.
8. Swargowari A , C.R. Bhobora, Dutta D. K. : IRV-2020- Rhino Monitoring Report, Manas National Park, April 2010 – March 2011 (unpublished report).
9. Thapa Kanchan, Williams Christy A, Khaling Sarala, Bajimya (2008): Observations on habitat preferences of translocated rhinos in Bardia National Park and Suklaphanta Wildlife Reserve, Nepal (unpublished report).
10. The Telegraph (18th January 2011) : Four Pobitora rhinos caught (http://www.telegraphindia.com/1110118/jsp/northeast/story_13453820.jsp).



Annexure – I


GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS, WILDLIFE, ASSAM,
BASISTHA, GUWAHATI-29

No. WL/FG.41/ Rhino Translocation/ 2005 Dated Guwahati, the 28th February, 2011

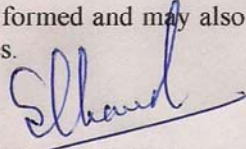
Consequent upon the transfer of Sri. D.M. Singh, IFS, the Translocation Core Committee is reconstituted as below –

1. Sri. Santosh Pal Singh, IFS, CCF (Wildlife) – Chief Operation Officer (COO)
2. Sri. Amit Sharma, WWF-India - Deputy Chief Operation Officer
3. Field Director, Manas TP - Member
4. Director, Kaziranga NP - Member
5. DFO, Guwahati WL Division - Member
6. Sri. Bibhab K. Talukdar, Aaranyak - Member

The Chief Operation Officer can co-opt any additional member with prior approval of the Chief Wildlife Warden of Assam.


Terms of Reference :

1. The TCC will be responsible for planning, executing, monitoring the capturing, transporting and releasing of the rhinos from the source PA's to target PA's.
2. The TCC will be responsible for planning and supervising the monitoring of the released rhinos in the target PA's and preparation of regular reports.
3. The TCC will constitute the different teams that may be necessary for executing the various activities in the source PA's viz.- Kaziranga NP and Pobitora WLS and the target PA's.
4. TCC will assign responsibilities and jobs to the teams formed and may also take the help of individuals to accomplish necessary activities.


[Suresh Chand, IFS]
Principal Chief Conservator of Forests (Wildlife)
and Chief Wildlife Warden, Assam



Annexure - II


GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS, WILDLIFE, ASSAM,
BASISTHA, GUWAHATI-29

No.WL/ FG.41 (A)/ TCC/ 2007 Dated Guwahati, the 29th November, 2010

NOTIFICATION

In pursuance to the decision taken in 17th meeting of Translocation Core Committee the “**Manas – Monitoring Team**” is constituted as following. This is in suppression of all earlier notifications issued by Chief Operation Officer of the Translocation Core Committee.

1. Field Director, Manas TR, Sri A. Swargowari - Team Leader
2. Dy. Field Director, Manas TR, Sri C.R.Bhobora - Deputy Team Leader

Field Monitoring & Security :

3. FRO, Basbari, - Member
4. FRO, Bhuyanpara - Member
5. FRO, Panbari - Member

Veterinarian :

6. Dr. Prabhat Basumatary, FVO Manas NP - Member

Monitoring / Research Support :

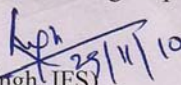
7. Mr. Deba Kr. Dutta (WWF) - Member

Advisers / Technical Support :

8. Mr. Amit Sharma (WWF)
9. Dr. Kushal Sarma (CVSc, Khanapara)

Terms of references :

1. The team will be responsible for monitoring the released rhinos and shall maintain a day to day record, after taking over from the Release Team.
2. The team will also be responsible for ensuring security in the National Park.
3. The team will provide regular updates and shall work under the supervision and guidance of the TCC.
4. The team shall set-up a dedicated rhino monitoring cell / station and work in close co-ordination with the WWF-India team positioned in the Park.
5. The Team Leader will notify a dedicated rhino monitoring field team in all the ranges comprised of adequate numbers of forest personnel, armed guards and *kunkie - mahaut* for regular and round the clock rhino monitoring. The team will also take the help of individuals to accomplish different activities as necessary.
6. The Team Leader will submit a six monthly Monitoring Report to the TCC.


(D.M. Singh, IFS)
Chief Operation Officer, TCC and
Chief Conservator of Forests (Wildlife),
Basistha, Guwahati – 29



Annexure – III

Rhino ID No.	Date	Time	Weather	Monitoring Station	Latitude	Longitude	Altitude	Nearest Camp	Nearest Landmark	Surface Type	Activities	Additional Information	Signal Quality	Remarks
2100	27/4/20	8-40 AM	cloudy	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
7000	"	9-30 "	"	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
110	"	10-40 "	"	Kamell	N 26.6894	E 91.0272	64 m	B.H.D.	Palasmani	Woodsland work land	Grazing	-	Nil	Direct seen the Rhino Kumbhari camp area.
321,338	"	11-30 "	"	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
2100	"	2-30 PM	"	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
7000	"	3-40 "	"	Borabuni	N 26.7020	E 91.0272	78 m	Borabuni	Borabuni	Woodsland work land	Grazing	-	Nil	Direct seen the Rhino Borabuni camp area.
110	"	4-20 "	"	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
2100	"	4-15 "	"	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
321,338	"	5-20 "	"	Rhino Camp	N 26.2457	E 91.0272	75 m	Rhino camp	Rhino camp	Woodsland work land	Grazing	-	Nil	Direct seen the Rhino, Rhino camp area.
7000	28/4/10	12-15 PM	Rainy	Tinmili	N 26.6007	E 91.0272	57 m	-	-	-	-	-	Nil	-
2100	"	11-00 "	"	Tinmili	N 26.6007	E 91.0272	57 m	Tinmili	Pink pan	Woodsland work land	Grazing	-	Strong	-
110	"	11-40 "	"	Tinmili	N 26.6007	E 91.0272	57 m	-	-	-	-	-	Nil	-
7000	"	11-55 "	"	Pammi	N 26.7013	E 91.0272	66 m	-	-	-	-	-	Nil	-
2100	29/4/10	12-42 AM	"	Pammi	N 26.7013	E 91.0272	66 m	Pammi	Lokasna	Woodsland	Grazing	-	Medium	-
321,338	"	1-30 AM	"	Pammi	N 26.7013	E 91.0272	66 m	-	-	-	-	-	Nil	-
110	"	2-15 "	"	Pammi	N 26.7013	E 91.0272	66 m	-	-	-	-	-	Nil	-
2100	"	3-30 "	"	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
7000	"	5-00 "	"	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
2100	30/4/10	8-15 AM	cloudy	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
110	"	9-30 "	"	Borabuni	N 26.7020	E 91.0272	78 m	-	-	-	-	-	Nil	-
7000	"	10-50 "	"	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
2100	"	11-20 "	"	Kamell	N 26.6894	E 91.0272	64 m	B.H.D.	Palasmani	Woodsland work land	Grazing	-	Medium	-
321,338	"	11-30 "	"	Kamell	N 26.6894	E 91.0272	64 m	-	-	-	-	-	Nil	-
110	"	2-40 PM	"	Rhino Camp	N 26.2457	E 91.0272	75 m	Rhino camp	Rhino camp	Woodsland work land	Grazing	-	Nil	Direct seen the Rhino, Rhino camp.
7000	"	3-15 "	"	Rhino	N 26.2457	E 91.0272	75 m	-	-	-	-	-	Nil	-
2100	"	4-00 "	"	Rhino	N 26.2457	E 91.0272	75 m	-	-	-	-	-	Nil	-
321,338	"	4-40 "	"	Rhino	N 26.2457	E 91.0272	75 m	-	-	-	-	-	Nil	-

Sample sheet of data register maintained by the IRV2020 monitoring team at Manas NP



Annexure – IV

1. Frontline staff involved in the monitoring of rhinos



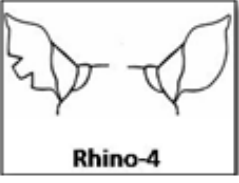

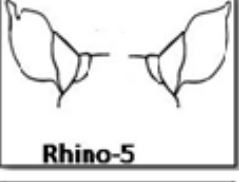

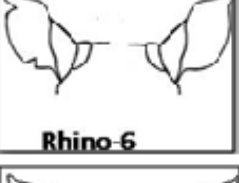



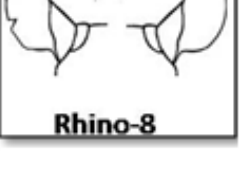

- A. **Basbari Range:** Prabhod Kumar Brahma (Forest Range Officer), Banjit Kr Das(Fr-I), Dipak Basumatry (Fr-I), Rajib Borgoyari (Fr-I), Emanuel Narzary (Fgd), Dilip Kumar Roy (Fgd), Uma Kanta Deka (Fgd), Prabin Roy (Fgd), Kumud Das (Fgd), Jatin Das (Fgd), Kusha Wary (Fgd), Ratan Basumatry (Fgd), Yusuf Khan Ali (Fgd), Nirmal Brahma (Fgd), Somesh Doimary (GW), Tapan Borgoyari(Fgd), Dhiren Musahary (CI), Anil Boro(CI), Ratul Basumatary(CI), Dhan Bahadur Magar (CI), Mon Mohan Pathak (Mahout), Biren Pathak (Mahout), Sumpul Grah (Mahout), Gopal Das (Mahout), Birenjoy Kerek Tanti (Mahout), Ratia Orang (Mahout), Modon Boro (Vol.), Nigam Basumatry(Vol.), Jatin Basumatry (Vol.), Sabharam Boro (Vol.), Monem Swargowary (Vol.) and a few more in addition to the departmental elephants and Mahouts.
- B. **Bhuyapara Range:** Labanya Ramchiary (Forest Range Officer), Mr. Bhobora (Dy Ranger), Bhupen Pathak (Fr-I), Biren Boro (Fr-I), Ansum Boro(Fr-I), Lakhan Boro (Fr-I), Doithon Narzary (Fgd), Md. Akhtar Hussain(Fgd), Md. Hyad Ali (Fgd), Bolod Singh Narzary (Fgd), Sanjun Basumatry (Fgd), Bharat Ramchiary (Fgd), Belon Goyari (G/w), Nripenda Deka (Fgd), Bongshidhar Das (Fgd), Akhil Haloi (Fgd), Kameswar Boro (Fgd), Mini Sarang Boro (Fgd), Sanjor Biswas (Fgd), Pradip Das (Fgd), Lakhmi Borgary (Fgd), Ramen Choudhary (Fgd), Priyamoi Hazarika (Fgd), Hopna Mazi (Fgd), Prafulla Basumatary (Fgd) and a few more in addition to the departmental elephants and Mahouts.
- C. **Panbari Range:** Babul Das (Forest Range Officer), Doimalu Basumatary(Fr-I), Alombara Basumatary (Fr-I), Nagen Roy (Fr-II), Binit Roy (Fr-II), Md.Ismaile Hussain(Fr-II), Dane Basumatary (Fgd), Narul Ali (Fgd), Karim Ali (Fgd), Pradip Gayari (Fgd), Munaf Ali(G/w), Manik Das (G/w), Majin Sangma (G/w), Bilifang Brahma (G/w), Karunakanta Das (CI), Lonkeswar Barman (CI) , Lonkeswar Boro (CI), Ganesh Boro (CI), Gopal Boro (CI) Indra Medhi (CI), Mahen Musahari (CI), Nibaron Basumatary (Vol.), Rindao Basumatary (Vol.), Bijen Basumatary (Vol.), Birsingh Boro (Vol.), Kabindra Boro (Vol.), Ranjan Basumatary (Vol.), Oangme Basumatary (Vol.) and a few more in addition to the departmental elephants and Mahouts.

2. WWF-India team involved in monitoring of rhinos in Manas NP

Deba Kumar Dutta (i/c), Jamir Ali, Bipul Nath, Iushuf Khan, Jawahar Sutradhar & Sarge Basumatary.

Annexure – V

Identity of the Rhino's 3 to 8 released in Manas during 2010 - 2011

 <p>Rhino-3</p>		<p>Adult Female from Pobitora WLS Capture Date : 28-12-2010 Release Date : 29-12-2010</p>
 <p>Rhino-4</p>		<p>Sub-adult Female from Pobitora WLS Capture Date : 28-12-2010 Release Date : 29-12-2010</p>
 <p>Rhino-5</p>		<p>Sub-adult Male from Pobitora WLS Capture Date : 17-01-2011 Release Date : 18-01-2011</p>
 <p>Rhino-6</p>		<p>Adult Female from Pobitora WLS Capture Date : 17-01-2011 Release Date : 18-01-2011</p>
 <p>Rhino-7</p>		<p>Sub-adult Male from Pobitora WLS Capture Date : 17-01-2011 Release Date : 18-01-2011</p>
 <p>Rhino-8</p>		<p>Adult Female from Pobitora WLS Capture Date : 17-01-2011 Release Date : 18-01-2011</p>



Annexure – VI

About the Authors –

1. Santosh Pal Singh – Chief Operations Officer, Translocation Core Committee and Chief Conservator of Forests (Wildlife), Assam
2. Amit Sharma – Deputy Chief Operations Officer, Translocation Core Committee (WWF-India, Assam); email – amitsharma_ghy@sify.com
3. Deba Kr. Dutta – Member, Manas Monitoring Team (WWF-India, Assam)
4. A. Swargowari – Leader, Manas Monitoring Team cum Field Director, Manas TP
5. C.R. Bhabora – Deputy Leader, Manas Monitoring Team cum Deputy Field Director, Manas TP
6. Dev Mangal Singh – Chief Conservator of Forests (Territorial), Lower Assam Zone

Citation :

Singh S.P., Sharma A., Dutta D.K., Swargowari A., Bhabora C.R. and Singh D.M., : Third year account of the released rhinos in Manas National Park (April2010 - March2011), May 2011, IRV2020, Translocation Core Committee, Assam