

THE RELEASED RHINOS



IN MANAS NATIONAL PARK, ASSAM - THE SECOND YEAR

[APRIL 2009 - MARCH 2010]



D.M. Singh, Amit Sharma, Deba K. Dutta,

A. Swargowari, C.R. Bhobora and B.S. Bonal

TRANSLOCATION CORE COMMITTEE,

INDIAN RHINO VISION (IRV) 2020 PROGRAM



Introduction :

Indian Rhino Vision (IRV) 2020 a program for the long term conservation of the one horned 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 also supported by a number of organizations including USFWS and BTC. 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. Manas NP which was till the early nineties home to a healthy rhino population was chosen as the first protected area to be developed and populated with rhinos from the wild through translocation from Pobitora WLS and Kaziranga NP. The immediate plan is to populate Manas NP with at least twenty rhinos from the wild by 2010.



Plate1- Monitoring in progress

The two rhinos have been tracked and observed in Manas by the monitoring team since the time of release and has now completed two years in Manas NP since its release in the park on 13th April, 2008. The present account is for the period from 1st April 2009 to 31st March 2010. The rhinos are fitted with radio collars and the tracking has been done currently using three sets of antennae and receiver systems. The monitoring team in

Manas monitors the rhinos with technical support from the WWF team and under the leadership of FDTP Manas, Mr. A. Swargowari. All the activities are conducted under the supervision of the Translocation Core Committee (TCC).

Habitat use and Ranging :

During this period of reporting, the Rhino-1 spent most of the time in the open and Rhino-2 spent most of the time inside the enclosure (up to December 2009). After coming out of the enclosure, both the rhinos were mostly using the area in the central part of the park under Basbari range. During this period, only Rhino-1 travelled to the east to the areas under Bhuyapara range on two occasions for the very first time after release. Rhino-1 also strayed out of the park boundary for fourteen times which was maximum during July09 (~63%); on the other hand Rhino-2 strayed for just one

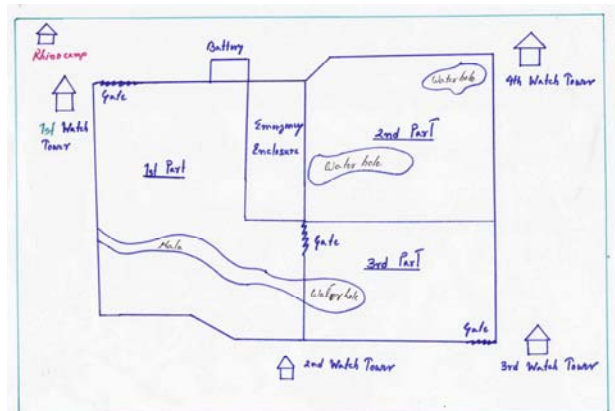


Fig.1- Sketch of the enclosure



time. The stray took place mainly in the Palsiguri area and the maximum distance strayed was about 1km. from the park boundary; straying has almost completely ceased in this area after erection of the electric fence in this section since the second week of August 2009.

In the month of April 2009, both the males were confined to the 2sq.kms. enclosure. During the month there were tense moments between the two, this may be due to low availability of food and water within the enclosure. During monitoring, it was observed that the rhinos had a fight (short durations) on six occasions specially in the evening hours (5pm-6pm). The Rhino-1 was normally found to be feeding on the available grasses in the 1st part of the enclosure specially towards the eastern side. On the other hand, the Rhino-2 was spending maximum time in the 3rd and 4th part of the enclosure. However during the day the rhinos were seen to share the same waterhole for wallowing and water was supplied from the nearby Kasimdoha river using pumping system.

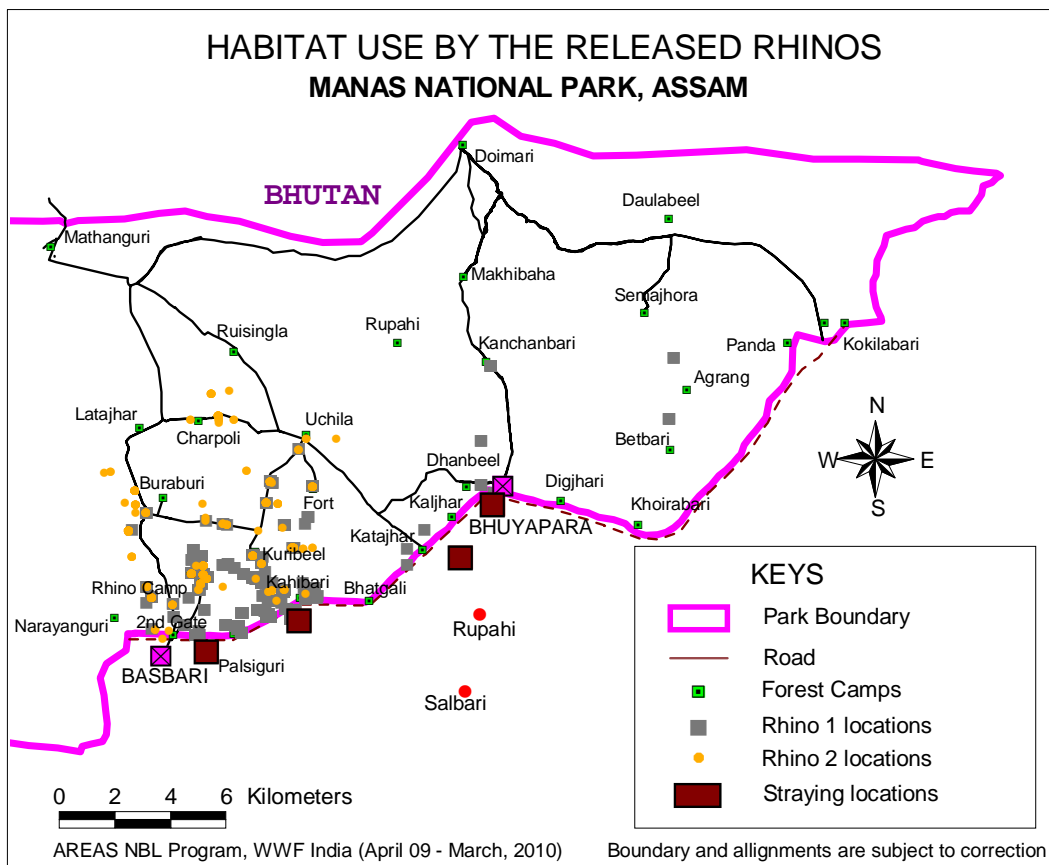


Fig.2 – Map showing location of rhinos recorded during the year

Rhino-1 broke the enclosure on the evening of 3rd May 2009 at around 7pm, this took place after a number of continued and intense fights between the two rhinos during 2nd and 3rd May 2009.



Rhino-1 came out of the enclosure after spending about 11 months inside the enclosure after breaking the fence through the western part to enter on 10th June 2008. After coming out of the enclosure, Rhino-1 headed towards Pahu-field area and primarily spent time in a fixed range covering the areas like Kasimdoha, Kuribeel, Rhino camp and Kahibari. This rhino also spent a lot of time wallowing in the water holes close to the southern boundary and was also spending time with all the females mainly with the elder one (Mainao) specially in the late afternoon and evening hours. After coming out of the enclosure, the Rhino-1 ventured out to the paddy fields in Madulijhar area (north of Palsiguri camp) for the first time on 29th May 2009 around 9pm and thereafter tried to continue with this pattern of night time straying giving a tough time to the monitoring and patrolling teams.

Rhino-2 after being left alone in the enclosure was observed to be very calm and normal during the whole month and was observed in the evenings to graze primarily in the 1st part of the Boma or in between the 3rd and 4th watch tower. Rhino-2 continued with a similar type of ranging and behavior inside the enclosure till mid-November 2009 after which he also came out to the open.

During June to August, 2009 the Rhino-1 kept using the areas primarily in between Rhino camp, Palsiguri, Kahibari and Kuribeel. During morning hours it was either feeding or wallowing, during daytime it primarily was wallowing and in the evening it was seen feeding. It was also seen to stay in company with the females in the afternoon and evening hours and also went out straying with the females during the night specially with the elder female. The straying was not only for feeding on the paddy fields but also to wallow in the muddy sections of the agriculture fields. Successful events of straying was observed to be 19 in total during these three months and the maximum was recorded during July 09 in 14 occasions. It became quite difficult to contain straying during July due to heavy rains resulting in waterlogged conditions and breakage in road systems. It was also observed that the rhinos were gradually getting used to the crackers and lights used for chasing them and containing them inside the park boundary, this also resulted in some injuries to the members of the monitoring and patrolling teams. After erection and commissioning of the electric fence in the most vital stretch of 5kms. in the very first week of August 2009 events of straying came down drastically providing much respite to the villagers as well as the members of the monitoring and patrolling team.

During September to October, 2009 Rhino-1 mainly spent the time in and around Palsiguri and Rhino Camp. It was also seen that most of the time was spent in company of all the three females and defecated forming one single dung pile. In the morning, all the four rhinos were observed to be wallowing and feeding on the aquatic weeds and water hyacinths in the waterhole near Palsiguri camp adjoining the southern boundary. They were seen to graze together in the evening hours. Other animals like Gaurs, Buffalos, Boar and Hog deer were also seen to be utilizing the same area in the evenings.



In the month of November09, the waterholes close to the southern boundary were gradually drying-up and the rhinos were observed to change their movement pattern and move west towards the Beki river and spent time in the Langpati area (west of Bura Buri). Rhino-1 spent most of the time during the month in the areas close to the river and at times specially in the evenings it also came to the Palsiguri – Rhino camp area to spend time with the females. The enclosure gates were kept open in the later part of the month for the Rhino-2 to come out to the open, which he ultimately did on 26th November2009 in the evening. On the gates being open, two young females entered the enclosure and spent the whole day within it and came out in the evening leaving the male inside. The male on coming out of the enclosure using the western side moved towards rhino camp where he met Rhino-1 and challenged each other. Thereafter he moved westwards towards river Beki and during late night strayed out of the park for a very short distance using the embankment on the east side of the river Beki. He was pushed back to the park by the monitoring team who was following the rhino continuously and thereafter for the month he stabilized and used areas like Tinmile, Pachmile and Gormara close to the river Beki to the west of Bura Buri and Latajhar camp.



Fig.3 – Rhino1 in Kuribeel area



Fig.4 – Rhino2 in the Uchila area

During December2009 to February2010, most of the grasslands and waterholes close to the southern boundary were turning dry. The Rhino-1 and Rhino-2 very seldom stayed close to each other, rather it was observed that there were challenges and brief fights among the two once they get too close to each other and this was more common during the evening and night. Rhino-1 occupied areas primarily in between river Beki (Langpati area on eastern bank), Rhino camp, Palsiguri and Kuribeel area. For the very first time after release in Manas Rhino-1 moved eastwards to areas close to Kanchanbari, Panda camp, Agrang and Betbari during 10th and 11th January2010. It also strayed out to the south near the Bhuyapara Range Office and thereafter was pushed inside; it came back to its earlier areas after spending about three days in the Bhuyapara range. Rhino-2 occupied areas primarily in between river Beki (Tinmile – Pachmile - Gormara on eastern bank), Bura Buri, Kuribeel, Fort and Palsiguri and Rhino Camp. However both the rhinos use different tracks to move about in the area and very seldom come close to each other. Both the rhinos spend time with the females separately and the Rhino-1 spends a



larger span of time with the females compared to the other specially during the morning and evening time wallowing and grazing together.

During March 2010, there was a good amount of pre-monsoon rains for about 12 days bringing back the waters in the dried waterholes close to the southern boundary and reviving the grasslands. During this month both Rhino-1 and Rhino-2 used similar areas but never stayed close to each other and their mutual occasional challenges and fights continued mainly in the open areas close to the Kuribeel camp. On one occasion, the fight was recorded to be quite intense and of longer duration (about 15 to 30mins.) which resulted in panic among the trained elephants used for monitoring and patrolling. Rhino-1 spent most of the time in between Kuribeel and Rhino camp and Rhino-2 spent most of the time in between Bura Buri, Fort and Kuribeel. During this time both the rhinos avoided the areas on the eastern bank of river Beki which they used during the previous months. Similar to the earlier months, Rhino-1 spent more time with the females than his counterpart.

SI No	Month	Stray attempts made	Successful stray occasions	Location
1	April,09	0	0	
2	May,09	10	2	Palsiguri
3	June,09	30	2	Palsguri & Kahibari
4	July,09	25	14	Palsiguri & Katajhar
5	August,09	12	1	Near 2nd gate
6	September,09	5	0	
7	October,09	0	0	
8	November,09	0	0	
9	December,09	1	1	Gyati area, east bank of river Beki
10	January, 2010	2	2	Bhuyanpara range office
11	February, 2010	0	0	
12	March, 2010	0	0	
	Total	85	22	

Table1 – Stray record of the two male rhinos in Manas

During this period, straying occurrences were quite low compared to the previous year (April08 – March09). For the very first time after release Rhino-1 moved eastwards during January, 2010 towards Bhuyapara and even strayed out of the park on two occasions to feed in cereals in the adjoining agriculture lands close to the range office. Straying 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 only 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. The rhino were successful in twenty-two occasions to stray out of the park (Table1) among the eighty-five attempts recorded. About 86% of the stray occasions were recorded prior to the erection of the electric fence during April to August 2009.

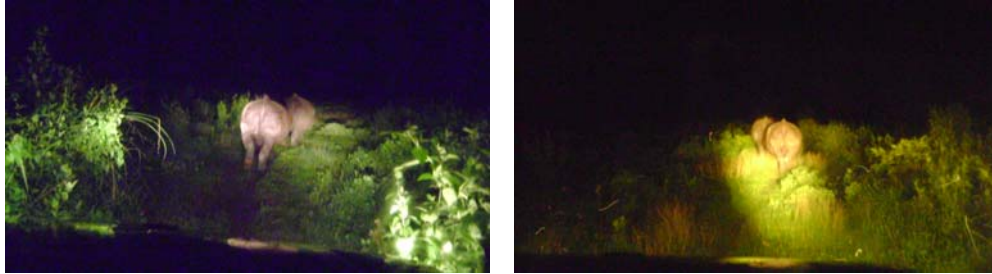


Fig.5 & 6 – Rhino1 and elder female (Mainao) going out to the agriculture fields in the night

During this period in contrast to the earlier year, it was observed that Rhino-1 explored more areas and both the rhinos started to use areas on the east bank of river Beki more frequently. Calculating the home range in GIS using MCP method it was found that Rhino-1 used an area of about 112sq.kms and Rhino-2 used an area of about 50sq.kms during this period.

Behavior and Feeding :

The rhinos and their daily behavior has been monitored closely by the team and recorded at regular intervals even though it was quite difficult to physically see the rhinos for a significant number of times. More than 1000 observation were made for each of the rhinos during this period. During this year the activity pattern was found to be quite similar to the first year. From analysis of the recorded data it was found that about 45% of the time was devoted to feeding, 14% to wallowing, about 17% was unknown and rest of the time was utilized for resting and movements. Feeding was dominant during the morning, late afternoon and evenings. Wallowing and resting was dominant during the daytime (10am – 4pm) which deviated a bit as per the seasonal changes. During September and October (post-monsoon) period it was observed to be feeding on the aquatic plants in the wetland close to Palsiguri specially in the morning hours. Rhino-1 preferred to graze in the evenings in the company of the females specially the elder one (Mainao).

Both the male rhinos enjoyed a good and friendly association with the females. Rhino-1 spent more time with the females wallowing and feeding together and even went out to feed in the agriculture fields to the south during the night. The two males normally avoid each other after coming out of the enclosure and normally challenge and fight among each other whenever they come near to each other. This fights cannot be directly related to the presence of the females



but maybe attributed to the factor that one tries to dominate as a result of which Rhino-2 spends most of the time on his own.

The electric fence was observed to have a strong impact on the behavior on the rhinos. After commissioning of the fence they tried to come out but on receiving the jolt for a couple of times, they seem to avoid contact with the fence. The fence has minimized the straying incidents of the rhinos and is seen to have a controlling effect on them. The electric fence helped a great deal the monitoring and patrolling team in successfully containing the rhinos inside the park during the period September09 to March2010 except for a couple of occasions. The electric fence was also able to check the events of depredation by other wild animals and people were able to cultivate and get a good produce of agriculture crops like mustard and paddy in a few adjoining plots for the very first time.

During this period, from continued observation it can be stated that during summer and monsoon the rhinos primarily grazed on grass species like Kahi (*Saccharum spontaneum*), Ulu (*Imperata cylindrical*), Nal (*Phragmites karka*) and Dubori (*Cynodon dactylon*). 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*) and Dal ghah (*Hymenachne amplexicaulis*). During winter they were observed to browse and graze on almost all common grasses,; herbs like Bihlangani (*Amphineuron opulentum*) and Dhekia (*Diplazium esculentum*); they also fed on soft leaves of trees like Simul (*Bombyx cieba*), Palas (*Butea monosperma*) and Oxy (*Dillenia pentagyna*) 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.



Fig.7 & 8 – Rhino1 and female rhinos in close association

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 implementing the 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 and Assam State Zoo. We specially thank the support of the local community, 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. M.C.Malakar (IFS); Dr. Susie Ellis & Dr. Bibhab Kr. Talukdar from IRF; Mr. Ravi Singh, Mr. Dipankar Ghose and Dr. A. Christy Williams from WWF; Mr. Fred Bagley and Ms. M. Nagendran from USFWS; Mr. H. Choudhury and Mr. Jayanta Das from WADWT; and 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 the officers and frontline staff of Manas, the Conservation Volunteers, the Home Guards, members of the local NGO's and members from the WWF team in Assam specially Dr. Anupam Sarmah and Dr. Pranab J. Bora who were always ready with a helping hand.

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).
6. Dinerstein E. (2003) : The Return of the Unicorns, Columbia University Press, New York
7. 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).
8. Talukdar B. K. – The Current State of rhinos in Assam and threats in the 21st Century, *Pachyderm*, 2000, 29, 39-47.



Annexure – I

GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS : WILDLIFE : ASSAM
BASISTHA : GUWAHATI – 781029

No. WL/ FG.41 / Rhino Translocation / 2005

Dated Guwahati, the 1st January 2010

NOTIFICATION

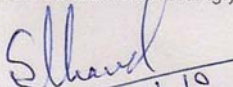
In pursuance of the decision taken in the 12th meeting of the Translocation Core Committee (TCC) held in Basbari on 18th December 2009 the TCC is reconstituted as below -

- | | | |
|-----------------------------------|---|--------------------------------|
| 1. Sri. D.M. Singh, IFS, CCF-WL | - | 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 Talukdar, Aaranyak | - | Member |

The COO, TCC can co-opt any additional member with prior approval of the CWLW, Assam.

Terms of reference:

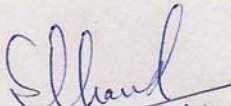
1. The TCC will be responsible for planning, executing and monitoring the capturing, transporting and releasing of the rhinos to be translocated from source PA's to target PA's.
2. TCC will constitute the different teams that may be required for executing different activities in both the source PA's i.e. – Kaziranga NP and Pobitora WLS and in the target PA's.
3. TCC will also assign the works and responsibilities to the concerned teams accordingly.


(Suresh Chand) 1.1.10

Principal Chief Conservator of Forests (WL)
and Chief Wildlife Warden, Assam
Basistha, Guwahati.

Copy to –

All concerned for information and necessary action.


(Suresh Chand) 1.1.10

Principal Chief Conservator of Forests (WL)
and Chief Wildlife Warden, Assam
Basistha, Guwahati.



Annexure - II

**GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS : : ASSAM
REHABARI : : GUWAHATI – 781 008.**

No.WL/ FG.41 (A)/ TCC/ 2007

Dated Guwahati, the 15th December, 2009

NOTIFICATION

In pursuance to the decision taken in 6th meeting of Translocation Core Committee the “**Manas - Monitoring Team**” is constituted as following.

1. Field Director, Manas TR, Sri A. Swargowari - Team Leader
2. Dy. Field Director, Manas TR, Sri C.R.Bhobora - Deputy Team Leader
- Security :**
3. Range Officer, Basbari, - Member
4. Range Officer, Bhuyanpara - Member
5. Range Officer, Panbari - Member
- Darter / Veterinarian :**
6. Dr. Prabhat Basumatary, FVO Manas TR - Member
- Research Support :**
7. Mr. Deba Kr. Dutta (WWF) - Member
- Advisers / Technical Support :**
8. Chief Conservator of Forests (Wildlife)
9. Mr. Amit Sharma (WWF)
10. Dr. Kushal Sarma (CVSc, Khanapara)

Terms of references :

1. The team will be responsible for monitoring the released rhinos and shall prepare a day to day report, 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 work under the supervision and guidance of the TCC.
4. The team will work in close co-ordination with the (WWF) officials managing the monitoring station.
5. The Team Leader will nominate at least 16 forest personnel, 6 armed guards and 6 *kunkie - mahaut* for regular 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.

*This is in submission A
previous notification dt 20.12.2007.*

(B.S. Boral)
Chief Operation Officer, TCC cum
Chief Conservator of Forests (M&E),
Rehabari, Guwahati – 8.

Copy to :

1. All concerned for information and necessary action.
2. The Chief Wildlife Warden, Assam

(B.S. Boral)



Annexure – III

**GOVERNMENT OF ASSAM
OFFICE OF THE FIELD DIRECTOR: MANAS TIGER PROJECT
BODOLAND TERRITORIAL COUNCIL
BARPETA ROAD: ASSAM**

O. O. No. 100 , Dated: 24-04-2008.

Following mentioned forest staff are hereby deputed specifically for the purpose of Monitoring and constant tracking of the two male Rhinos recently translocated to MANAS on 12-04-2008 under IRV-2020 programme. They will keep a close liaison with the Monitoring team engaged by WWF, and the joint team shall be responsible for overall monitoring and constant tracking of the Rhinos.

Name of the Forest staff:

1. Sri Daneswar Das, Forster-I,
2. Sri Berekul Islam, Forester-I,
3. Sri Kumud Das, Forest Guard,
4. Sri Pabin Ray, Forest Guard,
5. Sri Emanuel Narzary, Forest Guard,
6. Sri Tarini Kalita, Forest Guard.

/

(A. Swargowari, IFS)
Field Director, Manas Tiger Project,
Barpeta Road, Assam.

Memo No. FDT/RS&/IRV/101-06. Dated: 24-04-2008.

Copy to:-

1. The Chief Conservator of Forests, Wildlife, Assam, Rehabari, Guwahati-8, Assam, for favour of kind information and needful.
2. The Deputy Field Director, Manas Tiger Project, Barpeta Road, for information and necessary action. He is requested to supervise the monitoring procedure.
3. The Range Officer, Bansbari Range, Bansbari for information and necessary action. He is requested to supervise and guide the team constantly.
- ✓ 4. Sri Amit Sarma, WWF-INDIA, 202, Meghmallar, Uzan Bazar, Guwahati - 1, Assam, for information and needful.

/

(A. Swargowari, IFS)
Field Director, Manas Tiger Project,
Barpeta Road, Assam.



Annexure – IV

Rhino no.	Date	Time	Weather	Nearest Camp	Latitude	Longitude	Altitude	Nearest Camp	Nearest Landmark	Surface type	Activities	Additional information	Signal quality	Remarks
2100	27/4/20	8-40AM	cloudy	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	-
7000	"	9-30 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	-
110	"	10-40 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	B.H.D.	Palstrom	Wetland	Wasting	-	Nil	Direct seen the Rhino
321,338	"	11-30 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	Direct seen the Rhino
2100	"	2-30PM	"	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	Direct seen the Rhino
7000	"	3-40 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	Boramoni Forest	Boramoni camp	Wetland	Wasting	-	Nil	Direct seen the Rhino
110	"	4-10 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	Direct seen the Rhino
2100	"	4-15 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	Direct seen the Rhino
321,338	"	5-20 "	"	Rhino Camp	N.26.2450	E.91.0270	757m	Rhino camp	Rhino camp	Wetland	Wasting	-	Nil	Direct seen the Rhino
7000	28/4/10	12-55PM	Rainy	Tiamila Forest	N.26.4000	E.91.0270	570m	-	-	-	-	-	Nil	-
2100	"	11-00 "	"	Tiamila Forest	N.26.4000	E.91.0270	570m	Tiamila Forest	Palstrom	Wetland	Wasting	-	Strong	-
110	"	11-40 "	"	Tiamila Forest	N.26.4000	E.91.0270	570m	-	-	-	-	-	Nil	-
7000	"	11-55 "	"	Pam mile Forest	N.26.7010	E.91.0270	667m	-	-	-	-	-	Nil	-
2100	29/4/10	12-42PM	"	Pam mile Forest	N.26.7010	E.91.0270	667m	Pam mile Forest	Leisure	Wetland	Wasting	-	Medium	-
321,338	"	1-30AM	"	Pam mile Forest	N.26.7010	E.91.0270	667m	-	-	-	-	-	Nil	-
110	"	2-15 "	"	Pam mile Forest	N.26.7010	E.91.0270	667m	-	-	-	-	-	Nil	-
2100	"	3-30 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	-
7000	"	5-00 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	-
2100	30/4/10	8-15AM	cloudy	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	-
110	"	9-30 "	"	Boramoni Forest	N.26.7030	E.91.0270	787m	-	-	-	-	-	Nil	-
7000	"	10-50 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	-
2100	"	11-20 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	B.H.D.	Palstrom	Wetland	Wasting	-	Medium	-
321,338	"	11-30 "	"	Kamaili Camp	N.26.5894	E.91.0270	647m	-	-	-	-	-	Nil	-
110	"	2-40PM	"	Rhino Camp	N.26.2450	E.91.0270	757m	Rhino camp	Rhino camp	Wetland	Wasting	-	Nil	Direct seen the Rhino
7000	"	3-15 "	"	Rhino Camp	N.26.2450	E.91.0270	757m	-	-	-	-	-	Nil	-
2100	"	4-00 "	"	Rhino Camp	N.26.2450	E.91.0270	757m	-	-	-	-	-	Nil	-
321,338	"	4-40 "	"	Rhino Camp	N.26.2450	E.91.0270	757m	-	-	-	-	-	Nil	-

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



Annexure – V

1. Frontline staff involved in the monitoring of rhinos

- A. **Basbari Range:** P.K. Brahma (Range Forest Officer Basbari), Fakkarudin Ahmed (Deputy Range Forest Officer Basbari), Daneswar Das (Fr-I), Barekul Islam (Fr-I), U. Pathak (Fr-I), Niranjan Basumatry (Fr-I), Lakshyajeet Das (Fr-I), Manahari Barman (F-II), Birendra Nath Sarma (Fgd-II), Emanuel Narzary (Fgd), Dilip Kumar Roy (Fgd), Umakant Deka (Fgd), Prabin Kumar Roy (Fgd), Kumud Das (Fgd), Jatin Das (Fgd), Azad Ali Ahmed (Fgd), Tarini Kalita (Fgd), Yusuf Ahmed (Fgd) , Kamal Brahma (Fgd), Lankeswar Das (Fgd), Lankeswar Lahkar (Fgd), Khagen Kalita (Fgd), Golap Das (Fgd), Purna Musahary (Fgd), Somesh Doimary (Fgd), Gunin Ch Das (driver), Gopal Das (mahout) Bircha Tanti (mahout), Chukru Garh (mahout), Prafulla Koch (mahout), Pradip Basumatry (IRV,Vol), Madan Gayary (IRV,Vol), Tiken Basumatry (IRV,Vol), Medhi Narzary (IRV,Vol), Drubajeet Brahma (IRV,Vol) Jatin Gayary (IRV,Vol) Arun Narzary (IRV,Vol), Anil Basumatary (IRV,Vol) and a few others in addition to the departmental elephants.
- B. **Bhuyapara Range:** Labanya Ramchiary (Range Forest Officer Bhuyapara), Dilip Kumar Das (Fr-I), Lakhan Bodo (Fgd), Santra Bodo (Fgd), Raghunath Bodo (Fgd), Gopinath Sarma (Fgd), Pradip Boniya (Fgd), Dwitun Narzary (Fgd), Hopna Medhi (Fgd), Hyaed Ali (Fgd), Belun Narzary (Fgd), Mangal Kherkatary (IRV,Vol), Bishnu Ramchiary (IRV,Vol), Nitha Roy (mahout), Kandarpa Das (mahout), Dasarath Rabha (mahout), Poben Gayary (mahout) and a few others in addition to the departmental elephants.

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

Deba Kumar Dutta (i/c), Jamir Ali, Bipul Nath, Iushuf Khan and Rajen Khaklary.



Annexure – VI

About the Authors –

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 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. Bhobora – Deputy Leader, Manas Monitoring Team cum Deputy Field Director, Manas TP
 6. Bishan Singh Bonal – Member Secretary, Central Zoo Authority, New Delhi and Former COO TCC, Assam
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