

To,  
 Register  
 National Green Tribunal  
 Eastern Zone Bench  
 New Town, Kolkata- 700157  
 West Bengal-

Date - 20/09/2023

**Subject: Gross and egregious violations of the provisions of the Forest (Conservation) Act, 1980, the Assam Forest Protection Force Act, 1986, the Wildlife (Protection) Act, 1972, the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and Article 21 of the Constitution of India, 1950 by the Government of Assam in Sonai Rupai Wildlife Sanctuary in Sonitpur District.**

Respected Sir/ Madam,

Protection of environment, conservation of forests, protection of wildlife and other natural resources are the paramount importance for the Government of India and also, the Government of Assam. India being a party to the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June, 1972, are obligated to take appropriate steps for the protection and improvement of the human environment. Decisions were taken at the United Nations Conference on Environment and Development held at Rio de Janeiro in June, 1992, in which India also participated, nation states were called upon to provide effective access to judicial and as well as administrative proceedings, including redress and remedy and to develop national laws regarding liability and compensation for the victims of pollution and other environmental damage. The Hon'ble Apex Court in its judicial pronouncements held that the right to healthy environment has been construed as a part of the right to life under Article 21 of the Constitution of India.

The state of Assam falls in the tropical climate belt in the northeastern region of India, and is well known for its rich flora and fauna. In Assam, as per an assessment conducted by *Indian Institute of Remote Sensing, Dehradun* 'Assessment of large-scale deforestation in Sonitpur district of Assam', 'reserved forests constitute 59% of the recorded forest area of 3.07 million hectare.' An assessment conducted by the Forestry and Ecology Division, Indian Institute of Remote Sensing, 'Assessment of habitat loss in Kameng and Sonitpur Elephant Reserves', it has been reported that 'the Kameng and Sonitpur Elephant Reserves in northeastern India are comprised of trans-border subtropical evergreen to tropical moist deciduous forests of Arunachal Pradesh and Assam. The reserves are facing deforestation and habitat loss in recent years.' Further, in that assessment, it was also observed that 'The rate of deforestation was highest between 1999 and 2002.' 'High deforestation has resulted in high man-elephant conflicts.' The primary cause

Deputy Registrar

Rhattacharya  
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NGT, EZB, KOLKATA

Receipt No. NGT/EZB/Kol/286

Date 20/09/2023

1. Walsh, J. J., Whiteledge, T. E., Barvenik, F. W., Wirick, C. D., Howe, S. O., Esaias, W. E. and Scott, J. T., *Limnol. Oceanogr.*, 1978, 23, 659-683.
2. Dagg, M. J., *Continental Shelf Res.*, 1988, 8, 167-178.
3. Furnas, M. J., Okaichi, T., Anderson, D. M. and Nemoto T., in *Red Tides: Biology, Environmental Science, and Toxicology*, Elsevier, 1989, pp. 273-276.
4. Gagan, M. K., Chivas, A. R. and Herezay, A. L., *J. Sediment. Petrol.*, 1990, 60, 456-470.
5. Di Tullio, G. R. and Laws, L. A., *Deep-Sea Res.*, 1991, 38, 1305-1329.
6. Paerl, H. W., *Nature*, 1985, 315, 747-749.
7. Willey, J. D. and Paerl, H. W., *Mar. Biol.*, 1993, 116, 329-334.
8. Paerl, H. W. and Fogel, M. L., *ibid*, 1994, 119, 635-643.
9. Pant, A. and Desai, B. N., in *Oceanography of the Indian Ocean*, Oxford and IBH, New Delhi, 1992, pp. 81-90.
10. Malone, T. C., Pike, S. E. and Conley, D. J., *Deep-Sea Res.*, 1993, 40, 903-924.
11. Lafond, E. C., *Proc. Indian Acad. Sci., Sect. B*, 1957, 46, 1-47.
12. Murty, C. S. and Varadachary, V. V. R., in Proceedings of the Symposium on the Indian Ocean, March 1967, Bulletin of National Institute of Science of India, 1968, vol. 38, pp. 80-86.
13. *INTERFACE, A Bulletin from the NRSA Data Center*, 1999, vol. 10.
14. Murphy, J. and Riley, J. P., *Anal. Chim. Acta*, 1962, 27, 31-36.
15. Strickland, J. D. H. and Parsons, T. R., in *A Practical Handbook of Sea Water Analysis*, Bull. Fish. Res. Board Can., 2nd edn, 1972, vol. 167, p. 310.
16. Wakeel, El. and Riley, J. P., *J. Cons. Perm. Int. Explor. Mer.*, 1957, 22, 180-183.
17. Wyrki, K., *Oceanographic Atlas of the International Indian Ocean Expedition*, National Science Foundation, Washington DC, Amerind Publishing Co Pvt Ltd, New Delhi, 1988.
18. NODC World Ocean Atlas 1998 Grads image, <http://www.odc.noaa.gov/cgi-bin/GrADS.pl>
19. Pankajakshan, T., Gopalakrishna, V. V., Muraleedharan, P. M., Reddy, G. V. and Nilesh, A., in *PORSEC-Proceedings*, 2000, vol. 1, pp. 458-465.
20. Cutler, A. N. and Swallow, J. C., *Tech. Rep. No. 187*, Wormely, England, 1984, 36 charts, p. 8.
21. Shetye, S. R., Shenoi, S. S. C., Gouveia, A. D., Michael, G. S., Sundar, D. and Nampoothiri, G., *Continental Shelf Res.*, 1991, 11, 1397-1408.
22. Nair, P. V. R., *Cent. Mar. Fish. Res. Inst. Bull.*, 1970, 22, 56.
23. Radhakrishna, K., Bhattathuri, P. M. A. and Devassy, V. P., *Indian J. Mar. Sci.*, 1978, 7, 94-98.
24. Qasun, S. Z., *ibid*, 1977, 6, 122-137.
25. Bhattathuri, P. M. A., Pant, Aditi, Sawant, Surekha, Gauns, M., Matondkar, S. G. P. and Mohanraju, R., *Curr. Sci.*, 1996, 71, 857-862.
26. Gomes, H. R., Goes, J. I. and Saino, T., *Continental Shelf Res.*, 2000, 20, 313-330.
27. Nayak, S. R., Sarangi, R. K. and Rejawat, A. S., *Curr. Sci.*, 2001, 80, 1208-1212.

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## Assessment of large-scale deforestation in Sonitpur district of Assam

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The study highlights the deforestation and encroachment in the moist deciduous and other forest areas in Sonitpur District of Assam. The time series analysis of satellite imagery was carried out. Satellite images of 1994, 1999 and 2001 and intensive ground truthing were used for forest type mapping and change detection. Alarming rate of conversion of well-stocked forests into cultivable land was noticed. The spatial distribution of forests showed progressive decline from 1994 to 2001 through 1999. The loss of forest cover was more pronounced between 1999 and 2001 than between 1994 and 1999. This coincides with increased levels of insurgency in lower Assam. An overall loss of 232.19 km<sup>2</sup> of forests was noticed in the Sonitpur District between 1994 and 2001. The study demonstrates unique potential of remote sensing and geographical information system for forest cover assessment and monitoring.

TROPICAL regions around the world are currently experiencing rapid, wide ranging changes in the land cover. The changes in the land cover, in particular the tropical deforestation, have attracted worldwide attention because of their potential effects on soil erosion, run-off and carbon dioxide level<sup>1</sup>. Large-scale deforestation has been reported in India in the past<sup>2</sup>. Forest cover in India has more or less stabilized after 1980 due to ban on clear felling. However, forest degradation and small-scale deforestation still continue. The loss of forest cover in India for the period between 1990 and 2000 is 380.89 km<sup>2</sup>, annually as reported by FAO<sup>3</sup> and 1889 km<sup>2</sup> between 1991 and 1999 as reported by Forest Survey of India<sup>4</sup>.

The state of Assam falls in the tropical climate belt in the northeastern region of India. The state is well known for its rich flora and fauna. Out of 15,000 flowering plants reported from India, 5000 grow in this region. The forest areas form a network of habitat patches in the primarily agricultural landscape of Assam. These forests fall in one of the two mega biodiversity hot spots identified in India, viz. the Western Ghats and the Eastern Himalayas. Recorded forest area is 3.07 million ha, which constitutes 39.15% of the geographical area of the state. According to the legal classification, reserved forests constitute 59%, protected forests 13% and unclassified forests 28% (ref. 4). Agriculture occupies a significant place in the economy of the state and forms the major occupation of the people. The average density of population per

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km<sup>2</sup> in Assam (286/km<sup>2</sup>) is slightly higher than that of the whole country (273/km<sup>2</sup>)<sup>5</sup>. The state of Assam is facing insurgency for quite sometime. Taking advantage of the disturbance, local people have clear-felled large areas of forests in lower Assam.

Monitoring of deforestation in the state using ground-based methods has become a difficult proposition due to insurgency. Satellite remote sensing is a better option under such situations. Temporal images allow detection of land cover changes over a period of time. Beginning in 1972, when the first Earth Resource Technology Satellite (ERTS) was launched by USA, satellite remote sensing has established its use in assessment and monitoring of the forest resources<sup>6</sup>. Its capability to provide real-time data with synoptic and repetitive coverage gives significant advantages over traditional methods. Remote sensing has played an important role in generation of valuable information on the forest cover, vegetation type and land use changes<sup>7-11</sup>. Remote sensing data coupled with geographical information system (GIS), offer good opportunities to monitor regional ecosystem processes in tropical environments that are undergoing rapid change<sup>12</sup>. A large number of studies have been carried out using visual interpretation techniques. Howarth and Wickware<sup>13</sup> have discussed the procedures for environmental change detection. Nelson and Holben<sup>14</sup> delineated the extent of deforestation in Rondonia, Brazil from MSS, LAC, GAC and GOES in order to identify appropriate satellite data for monitoring deforestation on continental scale. Temporal Landsat MSS data have been used to detect changes in forest cover due to shifting cultivation by Miller *et al.*<sup>15</sup> and Eden<sup>16</sup>. Singh<sup>17,18</sup> has evaluated automated methods

for forest change detection. Leucas *et al.*<sup>19</sup> suggested a post-classification change detection technique based on time series analysis of Landsat data. Forest to agriculture conversion and extent of shifting cultivation were investigated earlier<sup>20-22</sup>. These studies relied on visual interpretation technique. In general, visual interpretation technique has been more successful than digital techniques in mapping tropical vegetation<sup>12</sup>. Sader *et al.*<sup>23</sup> have concluded that vegetation diversity and interspersion of land cover are high in humid tropics and spectral reflectance characteristics of mixed vegetation are often not distinct, causing problems in digital classification. The present study was undertaken mainly to highlight the ongoing large-scale deforestation in Sonitpur District of Assam in north-eastern India.

The entire district of Sonitpur, Assam (Figure 1), which falls in 9A and 9B biogeographic zones, i.e. north-east Brahmaputra valley and northeast-northeast hills<sup>24</sup> was covered in this study. The geographical area of Sonitpur is 5103 km<sup>2</sup>. It is located on the right bank of river Brahmaputra within 26°24' and 26°59'N latitude and 92°18' and 93°48'E longitude. Land use in the district is divided primarily among tropical semi-evergreen, moist deciduous, riverain forest, grassland, agricultural land and tea garden. According to Champion and Seth<sup>25</sup>, Sonitpur has east Himalayan moist deciduous forest (I/3/3c/3cb), Assam valley semi-evergreen forest (I/2/2B/C1), eastern alluvial semi-evergreen forest (I/2/2B/2S2) and riverain forest. Moist deciduous forests dominate the forest cover in the district. The temperature ranges from 7°C in January to as high as 38°C in May. The annual rainfall in the district is 2393 mm (ref. 26). Both south-

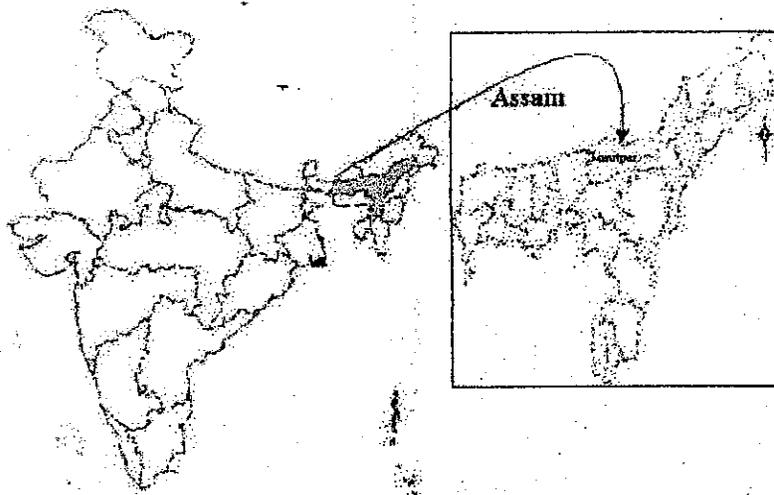


Figure 1. Location of the study area.

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Table 2. Area (km<sup>2</sup>) and species composition under different forest and non-forest categories in Sonitpur

Category	1994	1999	2001	Net change	Species composition
Moist deciduous	743	656.76	513.36	(-) 64	<i>Terminalia myriocarpa</i> , <i>Duabanga grandiflora</i> , <i>Pterospermum acerifolium</i> , <i>Ailanthus grandis</i> , <i>Bombax ceiba</i> , etc.
Tropical semi-evergreen	59.70	59.19	57.15	(-) 2.55	<i>Artocarpus chaplasha</i> , <i>Dipterocarpus turbinatus</i> , <i>Tetrameles nudiflora</i> , <i>Castanopsis hystrix</i> , <i>Vatica lancaefolia</i> , <i>Terminalia bellerica</i> , etc.
Riverain	7.65	7.65	7.65	Nil	<i>Bombax ceiba</i> , <i>Terminalia arjuna</i> , <i>Albizia lebbek</i> , <i>Dalbergia sissoo</i> , <i>Lagerstroemia speciosa</i> , etc.
Grassland	249.03	251.07	250.56	(+) 1.53	<i>Saccharum</i> sp., <i>Arundinaria</i> sp., <i>Erianthus</i> sp., <i>Phragmites</i> sp., etc.
Tea garden	383.24	385.28	384.77	(+) 1.53	-
River	658.80	658.80	658.80	Nil	-
Non-forest	3001.58	3084.25	3230.71	(+) 229.13	-
Total	5103	5103	5103	-	-

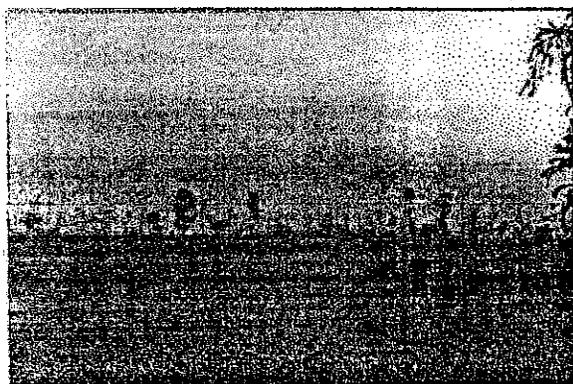


Figure 5. Forested land converted to agriculture in Nowduar Reserve Forest.

que. They were then co-registered with SOI toposheets using Lambert Conformal Conical projection. Well-identified ground control points (GCP) were taken to rectify the satellite images. Sub-pixel image to map registration accuracy was achieved through repeated attempts. Histogram matching was done to correct the radiometric difference prevailing in the mosaic of the year 2001. The district image was extracted by superimposing the Sonitpur District boundary (Figure 2). The three period images were then visually interpreted on-screen. A classification scheme was developed and the overall number of classes in each case was kept constant. The visually interpreted images were superimposed to detect changes from one period to the other. All operations were carried out using ERDAS IMAGINE software. Phytosociological analysis and Shannon-Weiner index of

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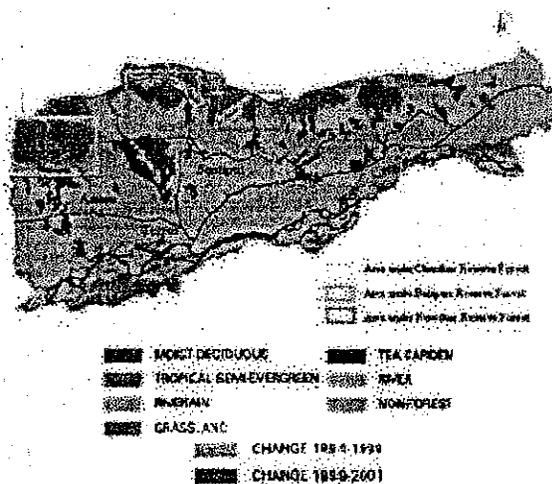


Figure 6. Map showing deforestation in Sonitpur District from 1994 to 2001 through 1999.

plant diversity were calculated in the respective forest types to assess the loss of phytodiversity due to deforestation.

Figure 2 shows the loss of forest cover with the passage of time. As evident from Figure 3, three types of forest, viz. tropical moist deciduous, tropical semi-evergreen and riverain forest could be identified and mapped from three data sets of different time periods. Three most affected reserve forests in the district are Charduar Reserve Forest, Balipara Reserve Forest and Nowduar Reserve Forest. Figure 4 shows deforestation in Nowduar Reserve Forest. Figure 5 shows a view of actual

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Table 3. Biodiversity status in different forest/vegetation types of Assam

Forest/vegetation type	No of samples (N)	Species diversity (H')	Total species	Economically important species	Medicinally important species	Endemic species
Semi-evergreen	25	5.45	250	105	62	21
Moist deciduous	127	6.49	640	257	179	37
Grassland	16	2.00	90	24	25	01

deforestation on ground in Nowduar Reserve Forest. Figure 6 shows change in the reserve forests from 1994 to 2001 through 1999. The results indicate that moist deciduous forests occupy the maximum area in Sonitpur followed by tropical semi-evergreen and riverain forests (Table 2).

The following species composition was noted in different forests:

**Tropical moist deciduous forest:** These forests were found along Arunachal Pradesh border. This type corresponds to east Himalayan moist deciduous forest (I/3/3c/3cb) type of Champion and Seth<sup>25</sup>. The important species in these forests are *Terminalia myriocarpa*, *Duabanga grandiflora*, *Pterospermum acerifolium*, *Ailanthus grandis*, *Bombax ceiba*, *Chukrasia tabularis*, *Albizia odoratissima*, etc.

**Tropical semi-evergreen forests:** These forests were found in the hilly areas of the district towards the north. This type corresponds to Assam valley semi-evergreen forest (I/2/2B/C1) and eastern alluvial semi-evergreen forest (I/2/2B/2S2) of Champion and Seth<sup>25</sup>. The forests are of mixed type, with deciduous upper canopy trees. The major tree species are *Artocarpus chaplasha*, *Dipterocarpus turbinatus*, *Tetrameles nudiflora*, *Terminalia myriocarpa*, *Castanopsis hystrix*, *Vatica lancaefolia*, *Albizia lucida*, *Terminalia belerica*, etc.

**Riverain forest:** This type of forest is confined along the banks of large rivers. The species composition of this forest is *Bombax ceiba*, *Terminalia belerica*, *Albizia lebbeck*, *Dalbergia sissoo*, *Terminalia arjuna*, *Lagerstroemia speciosa*, *Zizyphus* sp. etc.

Maximum loss (229.64 km<sup>2</sup>) was noticed in the case of moist deciduous forests and the decline was more pronounced between 1999 and 2001 (143.40 km<sup>2</sup>) than between 1994 and 1999 (86.24 km<sup>2</sup>). An area of 2.55 km<sup>2</sup> under semi-evergreen forest was lost, while riverain forests did not suffer any loss. Nearly all the deforested area (232.19 km<sup>2</sup>) has been converted to cultivable land. The rate of deforestation in the district worked out to be 10.7% from 1994 to 1999 and 20.1% from 1999 to 2001. The overall rate of the forest decline was estimated to be 28.65% between 1994 and 2001, which may be the highest rate of deforestation anywhere in the country. Table 3 indicates these forests are storehouses of rich biodiversity

with high Shannon-Weiner index value, and large number of species of medicinal (27.14%) and economic importance (39.39%). Many of them are also endemic (6.0%). Moist deciduous forest was found to possess highest biodiversity, with a high Shannon-Weiner index (6.49) as well as the maximum number of species (640).

The spatial distribution of different forest types from 1994 to 2001 shows that forest cover in Sonitpur is undergoing massive reduction with time. The district may be devoid of its forest cover in another 10 to 15 years if such a high rate of deforestation goes unchecked. This will of course lead to immense biodiversity loss. The increasing insurgency problem and constant increase in human and cattle population are to be blamed for this. Incidentally, the Supreme Court of India has banned all kinds of clear-felling in the northeastern region from 1996 onwards, with a view to protect the remnant forests. Unfortunately, illegal felling like the one in Sonitpur, still continues. The study shows high reliability and excellent potential of remotely sensed data for mapping and change detection, especially in problematic areas. This correlates well with earlier works on change detection.

1. Mas, J. F., *Int. J. Remote Sensing*, 1999, 20, 139-152.
2. Summary Report, National Remote Sensing Agency, Hyderabad, 1983.
3. State of the World Forests, Food and Agriculture Organization, Rome, 2000.
4. State of Forest Report, FSI, Ministry of Environment and Forests, Dehra Dun, 1999.
5. Economic Survey of Assam, Directorate of Economics and Statistics, Assam, 1999.
6. Kushwaha, S. P. S., ISPRS, *J. Photogramm. Remote Sensing*, 1990, 45, 175-181.
7. Houghton, R. A. and Woodwell, G. M., Proc. Seventh International Symposium on Machine Processing of Remote Sensing Data, Indiana, West Lafayette, 1981, pp. 593-602.
8. Botkin, D. B., Estes J. E., McDonald, R. M. and Wilson, M. V., *Bioscience*, 1984, 34, 508.
9. Malingreau, J. P., in *Remote Sensing and Geographic Information Systems for Resource Management in Developing Countries*, Kluwer, Dordrecht, 1991, pp. 253-278.
10. Roy, P. S., in *Environmental Studies in India*, Oxford and IBH Co, New Delhi, 1993.
11. Kushwaha, S. P. S., *Geocarto Int.*, 1997, 12, 55-62; 1993, 335-363.
12. Sader, S. A., Stone, T. A. and Joyoe, A. T., *PERS*, 1990, 56, 1343-1351.
13. Howarth, J. P. and Wickwar, G. M., *Int. J. Remote Sensing*, 1981, 2, 277-291.
14. Nelson, R. and Holben, B., *ibid*, 1986, 7, 429-448.

## RESEARCH COMMUNICATIONS

15. Miller, L. D., Nualchawee, K. and Tom, C., NASA Technical Memorandum 79545, Goddard Space Flight Centre, Greenbelt, Maryland, USA, 1978.
16. Eden, M. J., in *Remote Sensing and Tropical Land Management* (eds Eden, M. J. and Parry, J. T.), Wiley, London, 1986.
17. Singh, A., Ph.D. thesis, University of Reading, Reading, England, 1984.
18. Singh, A., in *Remote Sensing and Tropical Land Management* (eds Eden, M. J. and Parry, J. T.), Wiley, London, 1986.
19. Loucas, R. M., Honzak, M., Foody, G. M., Curran, P. J. and Cornes, C., *Remote Sensing Lett.*, 1993, 14, 3061-3068.
20. Gilruth, P. T., Hutchinson, C. F. and Barry, B., *PERS*, 1990, 56, 1375-1382.
21. Dwivedi, R. S. and Sankar, T. R., *Int. J. Remote Sensing*, 1991, 12, 427-433.
22. Roy, P. S., Ranganath, B. K., Diwakar, P. G., Vohra, T. P. S., Bhan, S. K., Singh, I. J. and Pandian, V. C., *Int. J. Remote Sensing*, 1991, 12, 2205-2225.
23. Sader, S. A., Powell, G. V. N. and Rappole, J. H., *ibid*, 1991, 3, 363-372.
24. Rodgers, W. A. and Panwar, H. S., *Biogeographical Classification of India*, WII, Dehradun, 1988.
25. Champion, H. G. and Seth, S. K., Govt. of India Publications, New Delhi, 1968.
26. *Statistical Handbook of Assam*, Directorate of Economics and Statistics, Govt. of Assam, 1994.
27. *Gazetteer of India, Assam*, Directorate of Economics and Statistics, Govt. of Assam, Guwahati, 1999.

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### Pattern of yolk internalization by hatchlings is related to breeding timing in the garden lizard, *Calotes versicolor*

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Pattern of yolk internalization by hatchlings born in early (May-June), mid (July-August) and late (September-October) breeding season in relation to maternal, egg and hatchling sizes was studied in *Calotes versicolor*. The maternal snout-vent length (SVL), body mass, clutch size, clutch mass and egg mass were recorded. Eggs from five clutches each, from early, mid and late breeding periods were incubated at ambient room temperature until hatching. At hatching, SVL and body mass of the hatchlings, and amount of yolk internalized by hatchlings were recorded. The internalized yolk mass of hatchlings was not related to maternal SVL, body mass, clutch mass and hatchling SVL. Internalized yolk mass was positively correlated with egg mass and hatchling body mass. Significantly greater amount of yolk was internalized by hatchlings born in the later part of the breeding season. Production of heavier hatchlings with greater amount of internalized yolk appears to be an important strategy to enhance the fitness of hatchlings of later clutches that have to compete for food with conspecific hatchlings of earlier clutches.

HIGHER vertebrates expedite the growth of their offspring by providing post-natal parental care, especially by feeding the young. Parental care is uncommon among reptiles<sup>1</sup>. However, reptiles aid their offspring's post-natal nutritional state by deposition of extra yolk than actually

required by the developing embryos. The portion of yolk that remains unutilized at the time of hatching (often referred to as 'residual yolk') is drawn into the body of the hatchling before it emerges from the egg<sup>2,3</sup>. The residual yolk represents reserve energy to offspring during their early post-hatching activities<sup>2,4-6</sup>. In turtles, residual yolk serves as reserve energy during their dispersal from nest to water<sup>2,6</sup>.

Inter-clutch variation in the amount of residual yolk is reported in a single species of lizard, *Iguana iguana*<sup>5</sup>. In this lizard, the inter-clutch variation in the internalized yolk is attributed to the difference in the availability of nutrients to the mother. All the previous studies on reptiles concerned with yolk internalization are on species that lay eggs in a single clutch or those have not been examined for the influence of maternal body size, clutch size and mass, and egg size, if any, on the pattern of yolk internalization between clutches oviposited at different times of the breeding season. Hence, the actual consequences of breeding time on yolk internalization are poorly understood in reptiles.

*Calotes versicolor* is a multiclutched lizard and has an extended breeding season (May-October)<sup>7,8</sup>. Therefore, it serves as a good model to study the pattern of yolk internalization by hatchlings from eggs laid at different times of the breeding season. The present study was undertaken to know whether maternal size, clutch and egg size, and breeding timing have any influence on residual yolk mass of hatchlings in *C. versicolor*.

The eggs from gravid *C. versicolor* were obtained during the breeding period (May-October 1999) from surrounding areas of Dharwad city (15°17'N and 75°3'E). The maternal snout-vent length (SVL; cm) and mass of body (g), clutch (g) and eggs (mg), and total number of eggs (clutch size) were recorded for these lizards. The clutches were categorized as early (May-June), mid (July-August) and late (September-October) depending upon the capture of gravid lizards following the procedure described previously by Shanbhag *et al.*<sup>8</sup>. For each

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total elimination of sucrose, accompanied with 1% CO<sub>2</sub> enrichment in the nutrient medium and bright light were detrimental to growth. This clearly shows the inevitability of sucrose in the medium for hairy root cultures of *S. khasianum*. Sugars are involved in the differentiation of xylem and phloem elements in cultured cells<sup>3</sup>. We have observed that growth and solasodine production improved at 3% sucrose, 1% CO<sub>2</sub> and bright light (Figures 5 b and 6). Concentrations higher than 1% CO<sub>2</sub> were seen to inhibit growth (Figure 5). Other research groups have reported similar decrease in secondary metabolite production in cell cultures as a result of high CO<sub>2</sub> concentration<sup>28</sup>. Therefore, by manipulating environmental and nutritional conditions, optimum growth and solasodine production could be achieved in hairy root cultures of *S. khasianum*. This requires a light intensity of 2000 lux at 14 h photoperiod (14 h of light and 10 h of dark), 25°C, 3% sucrose and 1% CO<sub>2</sub> as seen from our results. These conditions can be used to achieve a scale up of solasodine and hairy root cultures in suitable bioreactors.

1. Ishimaru, K., Arakawa, H., Yamanaka, M. and Shimomura, K., *Phytochemistry*, 1994, 35, 365-369.
2. Sauerwein, M. and Shimomura, K., *Phytochemistry*, 1991, 30, 3277-3280.
3. George, E. F. and Shrington, P. D., In *Plant Propagation by Tissue Culture - Handbook and Directory of Commercial Laboratories*, Exegetics Ltd, Eversley, England, 1984.
4. Conner, H. W., *Plant Phys.*, 1937, 12, 79-98.
5. Ramaswamy, K., Bheere, A. G. and Nair, P. M., *Eur. J. Biochem.*, 1976, 67, 275-282.
6. Flores, H. E., Dai, Y. R., Cuello, J. L., Maldonado-Mendoza, I. E. and Loyola Vargas, V. M., *Plant Physiol.*, 1993, 101, 363-371.
7. Flores, H. E., Hoy, M. W. and Pickard, J. J., *Trends Biotechnol.*, 1987, 5, 64-69.
8. Yoshimatsu, K., Sakate, M. and Shimomura, K., *J. Nat. Prod.*, 1990, 53, 1498-1502.
9. Aoki, T., Toda, Y. and Shimomura, K., *Plant Tissue Cult. Lett.*, 1992, 9, 214-219.
10. Taya, M., Sato, H., Kino-Oka, M. and Tone, S., *J. Ferment. Bioproc.*, 1994, 78, 42-48.
11. Sauerwein, M., Yamazaki, T. and Shimomura, K., *Plant Cell Rep.*, 1991, 9, 579-581.
12. Koch, K. E., *Annu. Rev. Plant Physiol. Plant Mol. Biol.*, 1996, 47, 509-540.
13. Yu, S. M., Lee, Y. C., Fang, S. C., Chan, M. T., Hwa, S. F. and Liu, L. F., *Plant Mol. Biol.*, 1996, 30, 1277-1289.
14. Park, I. S. and Kim, D. I., *Biotechnol. Tech.*, 1993, 7, 627-630.
15. Flores, H. E., Pickard, J. J. and Hoy, M. W., In *Chemistry and Biology of Naturally Occurring Acetylenes and Related Compounds* (eds Lam, J., Breteler, H. and Arnason, T.), Elsevier, Amsterdam, 1988, pp. 233-254.
16. Arteca, R. N., Poovaiah, B. W. and Smith, O. E., *Science*, 1979, 205, 1279-1280.
17. Murashige, T. and Skoog, F., *Physiol. Plant.*, 1962, 15, 473-479.
18. Hooykaas, P. J. J., Klapwijk, P. M. and Nuti, M. P., *J. Gen. Microbiol.*, 1977, 98, 477-484.
19. Peit, A., David, C., Dahl, G. A., Ellis, J. G., Guyon, P., Cassé, Delbert, F. and Tempé, J., *Mol. Gen. Genet.*, 1983, 190, 204-214.
20. Arnon, D. I., *Plant Physiol.*, 1949, 24, 1-15.
21. Bhatt, P. N. and Bhatt, D. P., *Physiol. Plant.*, 1983, 57, 159-162.

22. Kittipongpatana, N., Hock, R. S. and Porter, J. R., *Plant Cell, Tissue Org. Cult.*, 1998, 52, 133-143.
23. Teyssandier de la Serve, Axelos, M. and Peaud-Lenoel, C., *Plant Mol. Biol.*, 1985, 5, 155-163.
24. Parthier, B., *Biochem. Physiol. Pflanz.*, 1989, 185, 289-314.
25. Lalonde, S., Boles, E., Hellmann, H., Barker, L., Patrick, J. W., Frommer, W.B. and Ward, J. M., *Plant Cell*, 1999, 11, 707-726.
26. Thomas, B. R. and Rodriguez, R. L., *Plant Physiol.*, 1994, 106, 1235-1239.
27. Dilorio, A. A., Cheetham, R. D. and Weathers, P. J., *Appl. Microbiol. Biotechnol.*, 1992, 37, 463-467.
28. Stafford, A., *Trends Food Sci. Technol.*, 1991, 116-122.

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## Assessment of habitat loss in Kameng and Sonitpur Elephant Reserves

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The Kameng and Sonitpur Elephant Reserves in north-eastern India are comprised of trans-border subtropical evergreen to tropical moist deciduous forests of Arunachal Pradesh and Assam. The reserves are facing deforestation and habitat loss in recent years. The present study attempts to investigate the loss of habitat in these reserves using temporal satellite imagery of periods 1994, 1999 and 2002. The on-screen visual interpretation of the three-period imagery revealed alarming and continuous habitat loss from 1994 to 2002. The overall habitat loss was found to be 344 km<sup>2</sup> between 1994 and 2002. The average annual rate of deforestation worked out to be 1.38%, which is much higher than the national average. The rate of deforestation was highest between 1999 and 2002. The study indicated that at this rate much of the forests in the study area would be depleted within the next few years. It also showed that moist deciduous forests, which possess highest biodiversity in Assam, are facing maximum deforestation. High deforestation has resulted in high man-elephant conflicts. The study suggests rehabilitation of affected forests in the larger interest of elephants and biodiversity.

THE long-term sustenance of wildlife depends on the sustenance of wildlife habitats. Hence, habitat protection and conservation is vital to any meaningful wildlife conservation

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strategy. As human and cattle populations have demographically expanded, their demand for space and resources has increased. There are vast expansions of human habitations, agriculture and the industry at the expense of wilderness areas, especially in developing countries. The encroachment of the natural habitat is one of the most critical issues in wildlife conservation today. The consequences of an ever-increasing pressure of human development are depletion, degradation and fragmentation of habitats, loss of corridors and an increased human-animal conflict to name a few. The Government of India has taken serious note of the situation and embarked upon ambitious conservation-oriented wildlife projects such as Project Tiger, Project Crocodile, Project Hangul, etc. Project Elephant was started on similar lines in 1992, with an aim to provide the much-needed impetus to conservation of Asian elephant (*Elephas maximus*) in the country. Eleven elephant ranges with sizeable elephant populations have been identified for this purpose. They are: (i) Eastern India (9694 km<sup>2</sup>), (ii) North Brahmaputra (4300 km<sup>2</sup>), (iii) South Brahmaputra (4400 km<sup>2</sup>), (iv) Kaziranga (4900 km<sup>2</sup>), (v) Eastern Dooars (3800 km<sup>2</sup>), (vi) Garo Hills (3500 km<sup>2</sup>), (vii) Nilgiri-Eastern Ghats (13,000 km<sup>2</sup>), (viii) South Nilgiri (2400 km<sup>2</sup>), (ix) the Western Ghats (5700 km<sup>2</sup>), (x) Periyar (3300 km<sup>2</sup>) and (xi) Northern India (3000 km<sup>2</sup>).

There are about 35,000 to 50,000 elephants in Asia, which is one-tenth of the estimated population of African elephants<sup>2</sup>. The elephant is the largest terrestrial mammal in India. There is enough evidence to suggest that the elephant had wide distribution in India in the past. Today its distribution is limited to four widely separated geographical zones, viz. southern India (14,800 elephants), central India (2400 elephants), northern India (1600 elephants) and northeastern India (9200 elephants). The present estimated population of elephants in India is about 28,000, which also includes more than 3000 elephants in captivity in different parts of the country<sup>1</sup>. Elephant reserves seldom contain the full range of natural resources necessary for the survival of a large elephant population and therefore migration across such reserves occurs. An elephant's daily need for fodder is about 250-350 kg. Large animals like elephants are particularly vulnerable to habitat degradation and corridor loss as they migrate over long distances, as much as 50 km, as in West Bengal and north-eastern India or as little as 10-20 km, as in parts of Sri Lanka<sup>3</sup>. Some elephant populations even visit adjoining non-forest areas such as agriculture or human habitations, despite risk of life.

The expanding geospatial technologies, viz. remote sensing, geographic information system (GIS) and global positioning system (GPS) provide the capabilities to acquire, analyse and interpret wildlife habitat information on various scales, time- and cost-effectively<sup>4</sup>. According to the American Society of Foresters, satellite imagery and related technology is one of the top ten advances in forestry in the past one hundred years. Many studies have used remote sensing and GIS for wildlife habitat analysis during the past three

decades<sup>5-11</sup>. A Chinese study in Xishuangbanna clearly demonstrated the potential of integrating remote sensing, GIS and field information for habitat assessment<sup>12</sup>. In Thailand, satellite imagery and GIS have been used to find out the habitat suitability for Asian elephants<sup>13</sup>. IRS IC LISS-III data were used to study the elephant habitats and corridors in Orissa and adjoining parts of Bihar<sup>14</sup>. The ecological status of elephant corridors in Rajaji Corbett area in Uttaranchal was evaluated using a combination of remote sensing, GIS and field investigations<sup>15</sup>.

This study covers large parts of the Kameng and Sonitpur Elephant Reserves (KSER), spread in West Kameng, East Kameng and Papum Pare districts, Arunachal Pradesh and Sonitpur and Darrang districts, Assam and aims to present a comprehensive picture of elephant habitat loss and degradation using remotely sensed data of periods 1994, 1999 and 2002. An effort was also made to relate the changes in the habitat to the man-elephant deaths reported from the region. Our earlier study<sup>16</sup> focused on Sonitpur district only and reported an overall habitat loss of 237 km<sup>2</sup> between 1994 and 2001.

The North Brahmaputra Elephant Range covers 4100 km<sup>2</sup> hill forests of Arunachal Pradesh and dooar forests of Assam on the northern side of river Brahmaputra. The KSER boundaries encompass Pakke Tiger Reserve (including Pakhui Wildlife Sanctuary), Eagle Nest Wildlife Sanctuary, Sessa Orchid Sanctuary and reserve forests of Khablong Forest Division in Arunachal Pradesh and Sonai-Rupini Wildlife Sanctuary; Nameri Tiger Reserve (including Nameri National Park), Charduar, Balipara, Nowdum, Hishwanath and Behali Reserve Forests in Assam. Parts of KSER falling in Arunachal Pradesh and Assam (26°27'00" N and 92°01'30"-93°27'00" E) were selected for this study (Figure 1). According to Champion and Seth<sup>17</sup>, the forests in the study area are comprised primarily of sub-tropical evergreen, tropical semi-evergreen, tropical moist deciduous and riverain forest/grasslands. The East and West Kameng districts have 88.56% of their area under forest while forest area in Papum Pare is 94.74%. Darrang and Sonitpur districts have 13.56 and 19.80% area respectively, under forest<sup>18</sup>.

*Shorea assamica* (sal), *Terminalia myriocarpa* (hollock), *Artocarpus chaplasha* (sam), *Cinnamomum cecicodaphneu* (gonsorai), *Amoora wallichii* (amari), *Canarium strictum* (dhuna), *Terminalia citrina* (hilika), *Dysoxylum procerum* (poma), *Duabanga grandiflora* (khokan), *Mesua ferrea* (nahar), *Castanopsis indica* (hingori), *Endospermum chinense* (phul gamari), *Syzygium cumini* (jamun), *Sapium baccatum* (sellang), *Baccaurea sapida* (morhal), *Vatica lanceaefolia* (moroli), *Morus roxburghii*, *Sterculia hamiltonii*, *Pseudostachyum polymorphum* (baja bamboo) and *Dendrocalamus hamiltonii* (kako bamboo) are some of the species found in the KSER. Elephant, tiger, leopard, clouded leopard, red panda, musk deer, sambar, hog deer, Himalayan black bear, wild dog, fishing cat, jungle cat, slow loris, Indian bison, fox, jackal, Malayan giant squirrel, civet cat,

(8)

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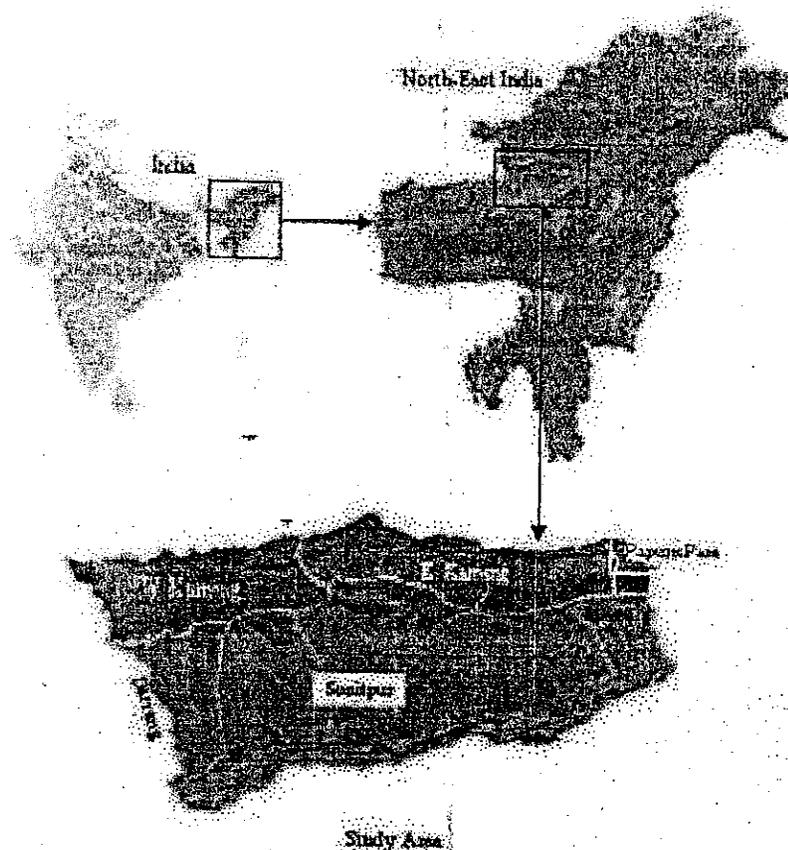


Figure 1. Location of study area in India.

bare, yellow-throated martin, rhesus macaque, capped langur, about 250 varieties of butterflies, 300 species of birds and four species of hornbills have been reported from the study area.

The dooars or foothills in Assam adjacent to Arunachal Pradesh border provide plenty of browse material for large herbivores like elephants. This favourable habitat has been seized and deforested during the past one decade due to a peculiar socio-political problem. The area is dominated by the Bodo tribe, which has been demanding for a separate ethnic Bodo province since long. Since their demand was not met, they resorted to several movements and widespread insurgency in Bodo-dominated districts of Kokrajhar, Darrang and Sonitpur in Assam. One of the consequences of this insurgency is large-scale deforestation and encroachment in forested tracts encompassing reserve forests of Sonai-Rupai, Charduar, Balipara, Nowduar, Biswanath and Behali. Bisht<sup>1</sup> has expressed doubts about the viability of KSER in the light of large-scale deforestation in the area.

Paddy is the major crop cultivated by the present-day occupants of the land. Paddy crop attracts elephants, which in turn devastate farmers' annual food source and

supplementary income. This leads to man–elephant confrontation, resulting in loss of elephant and human lives. About 60% of the elephants in Sonitpur district, Assam and adjoining East and West Kameng districts have been wiped out in the last five years; the most common method of killing is by poisoning. Ninety three persons were killed by wild elephants during 1991–2003 in Kameng–Sonitpur area. During the same period elephant deaths were 52, among which 23 were due to poisoning. In general, more humans and elephants died during 2000–03 (Table 1). Crop and property damage by elephants is worth 2.5 million rupees (US\$ 55,000) per year (Talukdar, pers. commun.). Crop depredation has become a serious problem in the KSER. Presently, elephants are compressed into smaller home ranges and left with little choice for traditional seasonal migration. The resultant increase in elephant densities in the remaining parts of the KSER has led to serious resource competition and habitat destruction. The Supreme Court of India has imposed a blanket ban on clear felling from 1996 onwards in North East India. However, felling in troubled districts like Sonitpur continues unabated.

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The Landsat TM imagery (for 1994 and 1999) and IRS P4 IRS 3B imagery (for 2002) were used (Figure 2). The two images had to be mosaiced to cover the entire study area in case of 1994 and 2002 data. Histogram matching was done to correct the radiometric differences before mosaicing. All imagery were rendered to atmospheric correction using dark pixel subtraction method<sup>19</sup>. Then they were geo-referenced to topomaps and to each other to have high geometric fidelity. The preliminary on-screen visual interpretation of the three-period imagery was carried out to delineate different forest (also referred as habitat here) and non-forest types using ERDAS IMAGINE and ArcGIS. A field visit was made for twenty days to correlate the image characteristics with forest and non-forest categories. A GPS set was used to facilitate ground truthing. Modifications in the interpretation were made after field visit and maps were finalized. The visually interpreted maps were converted to shape files for change detection in GIS environment. Intersect operation was used to generate change maps for the three periods. Information on deaths due to man-elephant conflict was collected from Aranyak, a non-governmental organization at Guwahati, Assam. Information on biodiversity was taken from our earlier work on biodiversity characterization at landscape level in northeastern India<sup>20</sup>.

Four types of elephant habitats were identified and mapped from satellite imagery: (i) subtropical evergreen forest, (ii) tropical semi-evergreen forest, tropical moist deciduous forest and (iv) grasslands, distributed from hills (up to 1000 m elevation) to plains (Figure 3). The species composition of these forest types could be found in an earlier study on Sonitpur<sup>16</sup>. The moist deciduous forest is located mostly in the plains. The semi-evergreen forest represents the ecotonal zone between moist deciduous and evergreen forests. The moist deciduous forest was noticed to have suffered maximum loss from 1994 to 2002 through 1999. The loss, however, was more pronounced between 1994 and 1999 (226.76 km<sup>2</sup>) than between 1999 and 2002 (118.32 km<sup>2</sup>).

Table 1. Human and elephant deaths between 1991 and 2003

Year	Persons killed by wild elephants	Natural death of wild elephants	Elephant death by poisoning
1991-92	-	-	-
1992-93	11	-	-
1993-94	12	2	-
1994-95	4	1	-
1995-96	6	1	-
1996-97	4	3	-
1997-98	5	2	-
1998-99	3	8	-
1999-00	4	3	-
2000-01	10	7	1
2001-02	15	2	17
2002-03	19	-	5
Total	93	29	23

1450

The total loss of this category of forest worked out to be 345.08 km<sup>2</sup> (or 45.38%) between 1994 and 2002. The semi-evergreen forest too suffered a loss of 20.44 km<sup>2</sup> between 1994 and 1999. No worthwhile loss was recorded between 1999 and 2002. There was no loss of subtropical evergreen forests, except that 5.55 km<sup>2</sup> got converted into open/degraded forest category.

The results indicate that forest areas in the immediate vicinity of human habitations suffered the most compared to those located away. Nearly all deforestation took place towards the Assam side of the inter-State boundary. The change of 5.55 km<sup>2</sup> dense forest into open forest inside Arunachal Pradesh could be attributed to shifting cultivation and not due to the Bodo problem. The degraded semi-evergreen forest decreased by about 12 km<sup>2</sup> between 1994 and 1999. Degraded deciduous forest increased considerably due to conversion of dense forest—61.23 km<sup>2</sup> between 1994 and 1999 and 20.50 km<sup>2</sup> between 1999 and

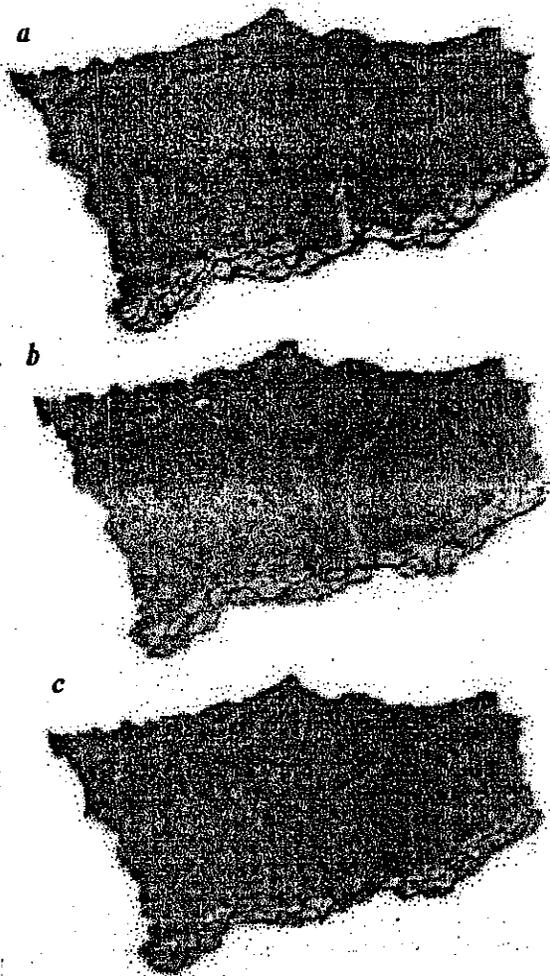


Figure 2. Satellite imagery (FCC) of (a) 1994, (b) 1999 and (c) 2002.

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(10)



Figure 3. Forest types in the study area.

Table 2. Habitat changes in KSER

Forest type	Area (km <sup>2</sup> )			Habitat loss/gain (km <sup>2</sup> )		
	1994	1999	2002	1994-99	1999-2002	1994-2002
Subtropical evergreen						
Dense	1319.78	1314.23	1314.23	-5.55	0.00	-5.55
Open/degraded	17.69	23.24	23.24	5.55	0.00	5.55
Tropical semi-evergreen						
Dense	977.67	957.23	957.00	-20.44	-0.23	-20.67
Open/degraded	22.85	10.62	10.22	-12.23	-0.40	-12.63
Tropical moist deciduous						
Dense	760.48	533.72	415.40	-226.76	-118.32	-345.08
Open/degraded	17.83	79.06	58.56	61.23	-20.50	40.73
Grasslands	6.23	0.00	0.00	-6.23	0.00	-6.23
Non-forest	4120.16	4324.59	4464.06	204.43	139.45	343.88

2002 – thus showing an overall increase of 40.73 km<sup>2</sup> from 1994 to 2002. The 6.23 km<sup>2</sup> grasslands area was altogether lost between 1994 and 1999. The reserve forest-wise loss of habitat was found to be maximum (90%) in Nowduar RF followed by Biswanath RF (70%), Charduar RF (60%), Balipara RF (40%), Sonai-Rupai RF (30%) and Behali RF (10%) in that order (Figure 4). An analysis of the overall depletion and degradation of forests showed alarming trends. While about 344 km<sup>2</sup> area under different forest types was lost between 1994 and 2002, the decrease was much higher in case of moist deciduous forests. Being interface forests, deciduous forests suffered continuous depletion with the passage of time (Table 2). The results reveal an average annual deforestation rate of 1.38%, which is rather too high. The annual rate of deforestation worked out to be higher

between 1999 and 2002 (1.59%) than between 1994 and 1999 (1.31%). The above results indicate that forests are under massive destruction with time and the elephant habitat is decreasing day by day.

The KSER forests historically represent the relatively undisturbed dense climatic climax forests and are located in the East Himalaya biodiversity hotspot of the country. Our study on biodiversity estimated high plant species diversity in evergreen, semi-evergreen and moist deciduous forests of Assam. Highest number of species, genera, families and Shannon-Weaver index of diversity<sup>21</sup> was reported in moist deciduous forests, followed by evergreen and semi-evergreen forests in that order. The degraded forests also showed high species diversity, which indicates that disturbance level till then was not high. The grasslands

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great diversity. A total of 640 species from moist deciduous, 300 from evergreen and 250 from semi-evergreen habitats were recorded (Figure 5). It is unfortunate that the

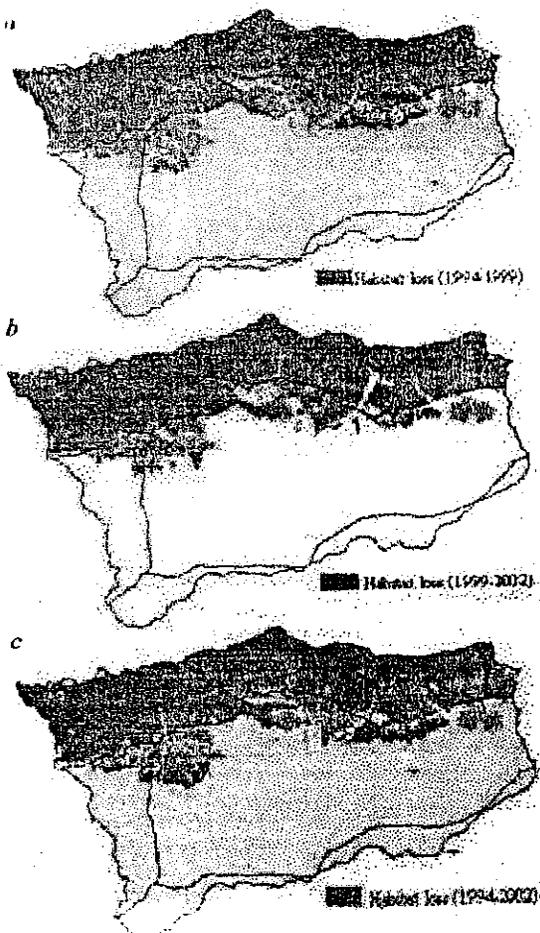


Figure 4. Habitat loss during (a) 1994-99, (b) 1999-2002 and (c) 1994-2002.

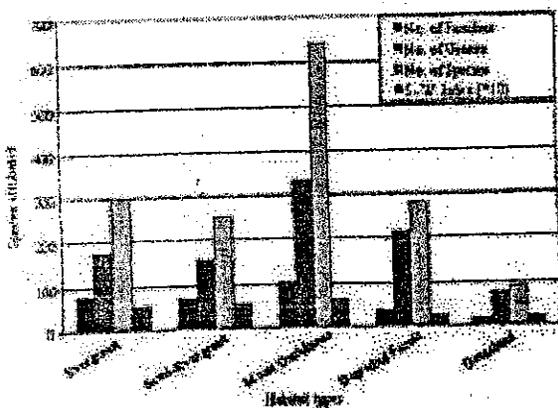


Figure 5. Species richness in the area.

forest having highest diversity is being lost with the highest rate.

The once vast home ranges of the elephant are now being depleted, degraded and fragmented into smaller habitat islands due to intense pressure on such ranges in many wildlife habitats of India, and elephant habitats are no exception. A wide-ranging animal like elephant requires vast areas for fodder and healthy survival. The compression and fragmentation of the habitat leads to lesser availability of fodder, increased risk of poaching and inbreeding among various elephant groups. Some elephant reserves like KSER are shrinking so fast that elephants may not even get sufficient time to get used to it. Elephant groups have been noticed roaming in the area, especially during night, even after the habitat is deforested. A possible reason for their continued use of the habitat even after deforestation could be their liking for paddy crop growing in their habitat. Elephants are also attracted by the country wine prepared from rice by local people. Either way they risk their lives and often get killed. As clear from Table 1, a correlation was noticed between deforestation and the number of human and elephant killings. The number of people killed during 2000-03 has constantly increased. The number of elephants killed rose sharply during 2001-02, which coincides with the maximum deforestation phase. More humans were killed by elephants than vice-versa.

Restoration of the habitat seems to be the only solution for any effective elephant conservation and human-wildlife conflict mitigation. This should be possible through rehabilitation of forests. Any further deforestation and encroachment in the KSER should be effectively resisted. The two reserves should be regularly monitored in future using remote sensing to detect the loss of the habitat due to human activities or natural calamities. The study demonstrates high potential of remote sensing and GIS technologies for wildlife habitat monitoring.

1. Bisht, S. S., An overview of elephant conservation in India. *Indian For.*, 2002, 128, 121-136.
2. Kempf, E. and Jackson, P., Wanted alive Asian elephants in the wild. WWF Species Status Report, World Wide Fund For Nature, Gland, 1995.
3. Sukumar, R., *The Asian Elephant: Ecology and Management*, Cambridge University Press, Cambridge, 1989.
4. Kuahwaha, S. P. S. and Roy, P. S., Geospatial technology for wildlife habitat evaluation. *Trop. Ecol.*, 2002, 43, 137-147.
5. George, T. H., Stringer, W. J. and Baldrige, J. N., Reindeer range inventory in western Alaska from computer-aided digital classification of Landsat data. Proceedings of 11th International Symposium on Remote Sensing of Environment, Environmental Research Institute of Michigan (ERIM), Ann Arbor, 1977, pp. 671-682.
6. Hill, G. J. E. and Kelly, G. D., Habitat mapping by Landsat for aerial census of kangaroos. *Remote Sensing Environ.*, 1987, 21, 53-60.
7. Brian, L. and West, E., GIS modeling of elk calving habitat in prairie environment *Photogramm. Eng. Remote Sensing*, 1997, 63, 161-167.

CURRENT SCIENCE, VOL. 87, NO. 10, 25 NOVEMBER 2004

- Kushwaha, S. P. S., Roy, P. S., Azem, A., Housh, H. and Chakraborty, P., Land area change and habitat suitability analysis in Kaziranga National Park, Assam. *Tigerpaper*, 2000, 27, 9-17.
- Kushwaha, S. P. S., Geoinformatics for wildlife habitat characterization. Proceedings of Map India 5th Annual International Conference, New Delhi, 6-8 February 2002, pp. 293-302.
- Foley, L. S., The influence of environmental factors and human activity on elephant distribution, M Sc thesis, ITC, The Netherlands, 2002, pp. 1-41.
11. Rees, W. G., Mapping land cover change in a reindeer herding area of the Russian Arctic using Landsat TM and ETM+ imagery and indigenous knowledge. *Remote Sensing Environ.*, 2003, 85, 441-452.
  12. Zhixi, Li, Hongga Li, Feng, Lu, Evaluation of Asian elephant habitat. GIS@development.net/aars/acrs, 1995.
  13. Mongkolsawat, C. and Thirangoon, P., Application of satellite imagery and GIS to wildlife habitat suitability mapping. Proc. Asian Conference of Remote Sensing, Manila, 16-20 November, 1998.
  14. Rout, D. K., Parida, B. C. and Behera, G., Characterization of elephant habitats and corridors in Orissa and part of Bihar using digital image processing technique and GIS. Proc. Biodiversity and Environment: Remote Sensing and Geographic Information System Perspectives, IIRS, Dehradun, 2000, pp. 137-145.
  15. Khanna, V., Ravichandran, M. S. and Kushwaha, S. P. S., Corridor analysis in Rajaji-Corbett Elephant Reserve: a GIS and remote sensing approach. *J. Indian Soc. Remote Sensing*, 2000, 29, 41-46.
  16. Srivastava, S., Singh, T. P., Singh, H., Kushwaha, S. P. S. and Roy, P. S., Assessment of large-scale deforestation in Sonitpur district of Assam. *Curr. Sci.*, 2002, 82, 1479-1484.
  17. Champion, H. G. and Seth, S. K., *A Revised Survey of the Forest Types of India*, Government of India Publications, New Delhi, 1968.
  18. FSI, State of Forest Report 2001. Forest Survey of India, Ministry of Environment and Forests, Dehradun, 2002, pp. 44-46.
  19. Lillesand, T. M. and Kiefer, R. W., *Remote Sensing and Image Interpretation*, John Wiley, New York, 1987, 2nd edn.
  20. Biodiversity characterization at landscape level in north-eastern India using satellite remote sensing and geographic information system. Project report, Indian Institute of Remote Sensing, Dehradun, 2002, pp. 73-74.
  21. Shannon, C. E. and Weaver, W., *The Mathematical Theory of Communication*, University of Illinois Press, Urbana, 1949, p. 32.

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## Ca and Sr Dynamics in the Indo-Gangetic plains: Different sources and mobilization processes in northwestern India

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The leachable fraction of the sediments from the Thar Desert fringe and the adjacent Ganges alluvial plains, has been studied to determine the sources and the processes responsible for the mobilization of Ca and Sr using Sr isotopes and Ca/Sr ratios. In the desert the leachable fraction of the soil/sediments is probably derived from mixing of old marine carbonates, microfossils with the sea-spray of the Arabian Sea and rainwater. Aeolian reworking of soil carbonates of this mixed origin could have provided the carbonate found at the desert fringe. The sub-humid zone of the Gangetic plains, just outside the desert fringe, has relatively higher <sup>87</sup>Sr/<sup>86</sup>Sr ratios with lower Ca/Sr ratios, indicating silicate weathering as the major contributor of leachable fraction. The spatial geochemical differences could also be related to the ineffectiveness of dust transport and accumulation processes in the humid Ganga plain. The <sup>87</sup>Sr/<sup>86</sup>Sr ratio of the present-day dust leachate from the polluted city of Delhi indicates that its Sr source is petroleum burnt residues.

We studied the sediments of the Thar Desert and Ganga plains for their sources and found that the Himalayas have been playing a dominant role in supplying sediments for these two geomorphic entities<sup>1</sup>. During the course of the Sr and Nd isotopic studies of the sediments, we leached our samples with dilute hydrochloric acid to separate carbonates and other authigenic phases from the samples<sup>2,3</sup>. Besides studying silicate chemistry, we also analysed the leachates for their <sup>87</sup>Sr/<sup>86</sup>Sr isotopic composition. Because Sr replaces Ca in mineral structure, it can be used as a tracer for the source of Ca<sup>4</sup>. When we combine this information with Ca/Sr ratios of the leachates, we find that we have a powerful tracer pair to distinguish between different sources for the leachates. Such a geochemical approach can provide important information on the sources of calcium in various surface and ecosystem studies as shown by various investigations<sup>5-7</sup>.

The main sources which may supply Ca to the ecosystem could be weathering products of silicates and carbonates, sea spray and rainwater<sup>7-9</sup>. Besides the local sources, dust derived from a long distance could also provide Ca to the

\*For correspondence. (e-mail: jktrip@yahoo.com)



## GOVT. OF ASSAM

OFFICE OF THE ADDL. CHIEF ENGINEER::PWD::(ROADS)::TEZPUR ZONE::TEZ

No. ACE/T/CS/SSD/04/2016/11

Dated Tezpur, the 27<sup>th</sup> JanuaryLetter of Acceptance

To,

Sri Kulen Hazarika  
Batabari. H.No - Nil  
Town - Dalgaon.  
P.S./P.O. - Dalgaon  
Dist - Darrang.

Sub: - "Construction of Road from Batasipur to Mouriapur Centre (Ch. 600.00 m to Ch. 6300.00 m) Under Fakhruddin Ali Ahmed Paki Path Nirman Achari Under Dev. of Specific Roads for the year 2015-16 under Sonitpur State Road Division.

Dear Sir,

This is to notify you that your Bid dated 19/01/2016 for execution of the "Construction of Road from Batasipur to Mouriapur Centre (Ch. 600.00 m to Ch. 6300.00 m) under Fakhruddin Ali Ahmed Paki Path Nirman Achari Under Dev. of Specific Roads for the year 2015-16 under Sonitpur State Road Division. for contract price of Rs.83,74,200 (eighty three lakhs seventy four thousand two hundred ten) only is hereby accepted by the PWD Department.

You are hereby requested to furnish performance Security, in the form detailed in Para 34.1 of ITB for amount of Rs.4,19,000.00 (Rupees four lakhs nineteen thousand ) only within 2 (Two) weeks of issue of this letter of acceptance valid up to 28 (Twenty Eight) days from the expiry of defects liability period and sign the contract, failing which action as stated in Para 34.2 of ITB will be taken.

Your's faithfully,

(B.K. Bhattacharjee)  
Addl. Chief Engineer, PWD (Roads)  
Tezpur Zone, Tezpur.

Memo No. ACE/T/CS/SSD/04/2016/11- A

Dated Tezpur, the 27<sup>th</sup> January

Copy to.....

1. The Commissioner & Special Secretary to the Govt. of Assam. PWRD. Dispur. Guwahati for favour of kind information.
2. The Deputy Secretary to the Govt. of Assam, PWD (H) Department. Dispur, Guwahati-6 for favour of kind information.
3. The Chief Engineer, PWD (Roads) Assam. Guwahati-3 for favour of kind information.
4. The Superintending Engineer, PWD, Tezpur Road Circle, Tezpur for information.
5. The Executive Engineer, PWD. Sonitpur State Road Division. Tezpur for information and necessary action.

(B.K. Bhattacharjee)

ANNEXURE-2

GOVERNMENT OF ASSAM  
OFFICE OF THE CHIEF ENGINEER, P.W.D. (Roads), ASSAM, CHANDMARI,  
GUWAHATI-3

ISSUE OF NOTICE TO PROCEED WITH THE WORK

No. CE/DEV/TB/319/Pt-II/1015-16/

Date 2016.

To,

Sri Lalit Kr. Agarwala.  
P.O:- Barangabari, Dist:- Sonitpur, Assam.

Sub: - Improvement of road Tarajuli to Dayalpur (Ch.4400.00 M. to Ch.9100.00 M. & from Ch. 9400.00 M. to Ch.11000.00 M.) under Fakhruddin Ali Ahmed Paki Path Nirman Achani under Development of Specific Roads for the year 2015-16, Package No.FAPNA/SON/Spl/05.

Ref. L.O.A.. No.CE/DEV/TB/319/Pt-II/2015-16/5 Dated. 30-01-2016.

Dear Sir,

Pursuant to your furnishing the requisite performance security as stipulated in ITB clause 34.1 and signing of the contract for the work 'Improvement of road Tarajuli to Dayalpur (Ch.4400.00 M. to Ch.9100.00 M. & from Ch. 9400.00 M. to Ch.11000.00 M.) under Fakhruddin Ali Ahmed Paki Path Nirman Achani under Development of Specific Roads for the year 2015-16, Package No.FAPNA/SON/Spl/05' for the contract price of **Rs.1,34,36,360.00 (Rupees one crore thirty four lakhs thirty six thousand three hundred sixty)** only, you are hereby instructed to proceed with the execution of the said works in accordance with the contract document.

Yours faithfully

*S&I*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

Memo No. CE/DEV/TB/319/Pt-II/2015-16/  
2016.

- A.

Dated. 02/02/16

Copy to:-

1. The Commssioner & Spl. Sectetary to the Govt. of Assam, PWD, Dispur Guwahati-6, for favour of information.
2. The Addl. Chief Engineer, PWD (Roads), Tezpur Zone, Tezpur for information
3. The Superintending Engineer, PWD (Roads), Tezpur Road Circle, Tezpur for information .
4. The Executive Engineer, PWD, Sonitpur State Road Division, for information and necessary action. Enclo. (i) Original Accepted Tender No.CE/DEV/FAPNA/2015-16/CS of Rs.1,34,36,360.00 (Rupees one crore thirty four lakhs thirty six thousand three hundred sixty) only (ii) One No. D.R. in original-Rs.8,23,538.00 (No.0773241).

*[Signature]*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

1504  
15/2/2016

(15)

ANNEXURE -3

- GOVERNMENT OF ASSAM  
OFFICE OF THE CHIEF ENGINEER, P.W.D. (Roads), ASSAM, CHANDMARI,  
GUWAHATI - 3

ISSUE OF NOTICE TO PROCEED WITH THE WORK

No. CE/DEV/TB/319/Pt-I/1015-16/

Date 2016.

To,

Sri Lalit Kr. Agarwala.  
P.O:- Barangabari, Dist:- Sonitpur, Assam.

Sub: - Construction of road from Hugrajuli to Khaubla Center (Ch. 0.00 M. to Ch.12000.00 M..) under Fakhruddin Ali Ahmed Paki Path Nirman Achan under Development of Specific Roads for the year 2015-16, Package No.FAPNA/SON/Spl./04.

Ref. L.O.A.. No.CE/DEV/TB/319/P-It/2015-16/4

Dated. 30-01-2016.

Dear Sir,

Pursuant to your furnishing the requisite performance security as stipulated in ITB clause 34.1 and signing of the contract for the work 'Construction of road from Hugrajuli to Khaubla Center (Ch. 0.00 M. to Ch.12000.00 M..) under Fakhruddin Ali Ahmed Paki Path Nirman Achan under Development of Specific Roads for the year 2015-16, Package No.FAPNA/SON/Spl./04' for the contract price of **Rs.1,75,64,692.00 (Rupees one crore seventy five lakhs sixty four thousand six hundred ninety two)** only, you are hereby instructed to proceed with the execution of the said works in accordance with the contract document.

Yours faithfully

*4501*  
*15/12/2016*

*S&K*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

Memo No. CE/DEV/TB/319/Pt-I/2015-16/  
2016.

- A.

Dated. 02/02

Copy to:-

1. The Commssioner & Spl. Secretary to the Govt. of Assam, PWD, Dispur Guwahati-6, for favour of information.
2. The Addl. Chief Engineer, PWD (Roads), Tezpur Zone, Tezpur for information
3. The Superintending Engineer, PWD (Roads), Tezpur Road Circle, Tezpur for information.
4. The Executive Engineer, PWD, Sonitpur State Road Division, for information and necessary action. Encl. (i) Original Accepted Tender No.CE/DEV/FAPNA/2015-16/04 of Rs.1,75,64,692.00 (Rupees one crore seventy five lakhs sixty four thousand six hundred ninety two) only (ii) Two Nso. D.R. in original - Rs.6,11,000.00 (No.904563) & Rs.3,24,201.00(No.0773310).

*[Signature]*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

GOVERNMENT OF ASSAM  
OFFICE OF THE CHIEF ENGINEER, P.W.D. (Roads), ASSAM, CHANDMARI,  
GUWAHATI - 3

## ISSUE OF NOTICE TO PROCEED WITH THE WORK

No. CE/DEV/TB/319//1015-16/

Date 2016.

To,

Sri Suraj Agarwala.  
Fatashil, P.O. & P.S. - Bharalumukh,  
Dist. Kamrup(M), Assam

Sub: - Construction of road from Belsiri to Abhoi Center (Ch. 5200.00 m. to Ch.12000.00 m.) under Fakhruddin Ali Ahmed Paki Path Nirman Achari under Development of Specific Roads for the year 2015-16, Package No. FAPNA/SON/Spl/01.

Ref. L.O.A.. No.CE/DEV/TB/319/2015-16/19

Dated. 30-01-2016.

Dear Sir,

Pursuant to your furnishing the requisite performance security as stipulated in ITB clause 34.1 and signing of the contract for the work 'Construction of road from Belsiri to Abhoi Center (Ch. 5200.00 m. to Ch.12000.00 m.) under Fakhruddin Ali Ahmed Paki Path Nirman Achari under Development of Specific Roads for the year 2015-16, Package No. FAPNA/SON/Spl/01' for the contract price of **Rs.1,38,49,660.00 (Rupees one crore thirty eight lakhs forty nine thousand six hundred sixty)** only, you are hereby instructed to proceed with the execution of the said works in accordance with the contract document.

Yours faithfully

*Sdf*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

Memo No. CE/DEV/TB/319/2015-16/20 - A.

Dated. 02/02/2016.

Copy to:-

1. The Commissioner & Spl. Secretary to the Govt. of Assam, PWD, Dispur Guwahati-6, for favour of information.
2. The Addl. Chief Engineer, PWD (Roads), Tezpur Zone, Tezpur for information
3. The Superintending Engineer, PWD (Roads), Tezpur Road Circle, Tezpur for information.
4. The Executive Engineer, PWD, Sonitpur State Road Division, for information and necessary action. Encl. (i) Original Accepted Tender No.CE/DEV/FAPNA/2015-16/62 of Rs.1,38,49,660.00 (Rupees one crore thirty eight lakhs forty nine thousand six hundred sixty) only (ii) One No. D.R. in original - Rs.6,92,483.00 (No.0773881).

*B*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

4503  
15/1/2016

(17)

AGOVERNMENT OF ASSAM  
OFFICE OF THE CHIEF ENGINEER, P.W.D. (Roads), ASSAM, CHANDMARI,  
GUWAHATI - 3

## ISSUE OF NOTICE TO PROCEED WITH THE WORK

No. CE/DEV/TB/319/Pt/1015-16/

Date

2016.

To,

Sri Suraj Agarwala.  
Fatashil, P.O. & P.S. - Bharalumukh,  
Dist. Kamrup(M), Assam

Sub: - Construction of road from Batasipur to Abhoi Center (Ch. 0.00 M. to Ch.6300.00 M.) under Fakhruddin Ali Ahmed Paki Path Nirman Achari under Development of Specific Roads for the year 2015-16, Package No. FAPNA/SON/Spl/03.

Ref. L.O.A. No. CE/DEV/TB/319/Pt/2015-16/5

Dated. 30-01-2016.

Dear Sir,

Pursuant to your furnishing the requisite performance security as stipulated in ITB clause 34.1 and signing of the contract for the work 'Construction of road from Batasipur to Abhoi Center (Ch. 0.00 M. to Ch.6300.00 M.) under Fakhruddin Ali Ahmed Paki Path Nirman Achari under Development of Specific Roads for the year 2015-16, Package No. FAPNA/SON/Spl/03' for the contract price of **Rs.1,40,35,444.00 (Rupees one crore forty lakhs thirty five thousand four hundred forty four)** only, you are hereby instructed to proceed with the execution of the said works in accordance with the contract document.

Yours faithfully

*S&J*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

Memo No. CE/DEV/TB/319/Pt/2015-16/6 - A.

Dated. 02/02/2016.

Copy to:-

1. The Commssioner & Spl. Sectetary to the Govt. of Assam, PWD, Dispur Guwahati-6, for favour of information.
2. The Addl. Chief Engineer, PWD (Roads), Tezpur Zone, Tezpur for information
3. The Superintending Engineer, PWD (Roads), Tezpur Road Circle, Tezpur for information.
4. The Executive Engineer, PWD, Sonitpur State Road Division, for information and necessary action. Enclo. (i) Original Accepted Tender No. CE/DEV/FAPNA/2015-16/63 of **Rs.1,40,35,444.00 (Rupees one crore forty lakhs thirty five thousand four hundred forty four)** only (ii) One No. D.R. in original - Rs.7,01,772.00 (No.0773880).

*[Signature]*  
Chief Engineer, PWD.  
Border Roads and NEC Works  
Chandmari, Guwahati-3, Assam.

4502  
15/12/2016



GOVERNMENT OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER::  
WESTERN ASSAM WILDLIFE DIVISION, DOLABARI, TEZPUR

Phone: 0371-2268054 (Tel/Fax)

Email: [dfw.wawl@gmail.com](mailto:dfw.wawl@gmail.com)

No.B/WAWL/Encroachment/2016/ 254-55

Date: 17/03/2016

To,

The Executive Engineer,  
Sonitpur State Road Division  
Sonitpur, Tezpur

Sub: Construction of roads/bridges inside the Sonai Rupai Wildlife Sanctuary

- Ref: 1. E mail received from PCCF (W) & Chief Wildlife Warden, Assam dated 15/03/2016  
2. Complaint filed by Sri Dillip Nath (Reporter) dated 11/03/2016.  
2. Range Officer Report via Memo No. SR/52/PDW Roads/2016/51 dated 17/03/2016

Sir,

It has been brought to the notice of this office, vide the references mentioned above that your office has been constructing roads and bridges inside the Sonai Rupai Wildlife Sanctuary under the scheme "FAKARUDDIN ALI AHMED POKI PATH NIRMAN AASONI". As per the record (in ref. 2), 12 Kms road from Hagrajuki to Khaola, 8 Kms of road from Batasipur to Muriapur and 6 Kms of road from Batasipur to Aboi centre is under construction, and, parts of which are falling within the Sonai Rupai Wildlife Sanctuary.

Consequent to the complaints received, the Range Officer, Kalamati in his field inspection report (in ref. 3) stated that about 5 Kms of the road/ bridge construction, i.e., from the Lalbari centre to Bogai centre via Khaola Centre falls inside the Sonai Rupai Wildlife Sanctuary.

The construction of roads and bridges inside the Wildlife Sanctuary amounts to "Non-forestry" activity and mandatory permission from the Ministry of Environment and Forests, Govt. of India is required for carrying out such activity as per the provisions of the Forest (Conservation) Act, 1980. Even govt. agencies are liable for prosecution for violation of the provisions of the aforesaid act.

Therefore, this office would like to know whether mandatory prior permission of The Ministry of Environment and Forests, Govt. of India was obtained before starting the construction work. A copy of the proposal as submitted and as approved may also be furnished to this office.

GOVT. OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER  
SONITPUR WEST DIVISION: TEZPUR

No.A/FC Act, 1980/SW/2016/

Dt.

To

The Conservator of Forests,  
Northern Assam Circle, Tezpur.

Sub :- Public complaint regarding execution of developmental works inside Charduar RF/ Sonai Rupai Wildlife Sanctuary.

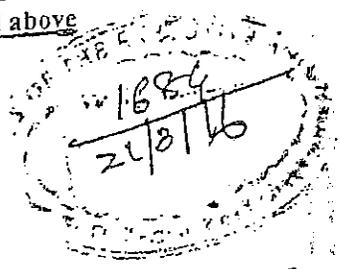
Ref :- Your letter No.FGN.40/Misc/NAC/Pt-III/1038-40 dt.16/03/2016.

Sir,

With reference to the above, I have the honour to inform you that on receipt of the information regarding construction of road by the PWD, Sonitpur State Road Division, Tezpur inside Charduar RF & Sonai Rupai Wildlife Sanctuary, I have immediately intimated to the Executive Engineer, PWD, Sonitpur State Road Division, Tezpur vide this office letter No. B/FC Act, 1980/SW/2016/1696-97 dt.15/03/2016 with a copy to you to stop the construction works of the roads inside Charduar RF/ Sonai Rupai Wildlife Sanctuary and violation of Forest Conservation Act, 1980 & also asked him to obtain necessary approval from MoEF, GOI as per guideline. Accordingly the Executive Engineer, PWD, Sonitpur State Road Division, Tezpur vide his letter No.C/1511/R/2015/3255 dt.18/03/2016 stopped the works of the 3 (three) roads namely Hugarajuli to Khabla center road, Batasipur to Maoriapur center road and Batasipur to Aboi center road until settled down the matter. A copy of the Executive Engineer's letter alongwith its enclosures are appended herewith for your kind perusal and needful.

This is for favour of your kind information and necessary action.

Encl :- As stated above



Yours faithfully,

DIVISIONAL FOREST OFFICER  
SONITPUR WEST DIVISION  
TEZPUR

Dt. 19/03/16

No.B/FC Act, 1980/SW/2016/1821-23

Copy to the Deputy Commissioner, Sonitpur, Tezpur for favour of kind information and necessary action

Copy to the Executive Engineer, PWD, Sonitpur State Road Division, Tezpur for kind information with reference to his letter mentioned above. He is requested to obtain necessary approval from the Ministry of Environment & Forest, Govt. of India as per guidelines of Forest Conservation Act, 1980.

Copy to the Range Officer, Dhekiajuli Range, Dhekiajuli for information and necessary action with reference to his letter No.DH/29/Reserved Forest (Genl)/2016/74 dt.17/03/2016. He is directed to keep strict vigil on the area to check any non forest activities inside RF area.

DIVISIONAL FOREST OFFICER  
SONITPUR WEST DIVISION  
TEZPUR

GOVERNMENT OF ASSAM  
OFFICE OF THE EXECUTIVE ENGINEER:: PWD::SONITPUR STATE ROAD  
DIVISION:: TEZPUR

C/1511/R/2015/ 3272

Date:- 19/3/16

To,

The Divisional Forest Officer,  
Western Assam Wildlife Division,  
Dolabari, Tezpur.

Sub:- Construction of road /Bridges inside the Sonai Rupai Wildlife Sanctuary.

Ref:- 1) Your letter No.B/WAWL/ Encroachment/2016/254-55 dt. 17/3/2016  
2) letter No.CB/2015/291,dtd.02/02/2015 from the S.P.Sonitpur District addressed to D.C.Sonitpur  
3) Letter memo No.SNZ.15/2014/100,dtd.02/02/2015 from the D.C.Sonitpur Dist.  
4) Letter memo No. SNZ-15/2014/181,dtd.09/04/15 from the D.C.Sonitpur Dist.

Sir,

With reference to your letter No: mentioned above, I am to inform you the following points-

1) Works taken as per instruction of the Deputy Commissioner, Sonitpur, vide his letter memo No.SNZ.15/2014/100,dtd.02/02/2015 (copy enclosed)  
2) Roads are taken for connectivity to the newly established Police pickets. So, it is the matters of security (copy of letter No.CB/2015/291,dtd.02/02/2015 from the S.P.Sonitpur District addressed to D.C.Sonitpur is enclosed).

3) No new roads are to be constructed. Works are purely repairing/improvement nature on existing Katcha road.

4) No bituminous works is being provided in the project.

5) It is not known that the roads which are in question fall under reserved land.

Under such circumstances, you are requested kindly to issue N.O.C.(No objection certificate) for repairing the roads namely-

(1) Hugrajuli to Khaubla Center (2) Batasipur to Maoriapur (3) Batasipur to Abhoi Center

Considering security of innocent people.

Your kind consideration in this regard is requested.

Encl:- As under reference Sl.2,3 & 4.

Yours faithfully,

(A.K. Dutta)

Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

Date:- 19/3/16

Memo No. C/1511/R/2015/ 3272 - A

Copy to :-

(1) The Deputy Commissioner, Sonitpur District, Tezpur for favour of kind information & necessary action. It is urgently require to complete the repairing works before monsoon started. Encl:- Copy of the letter mentioned under Ref. =4Nos.

(2) The Superintendent of Police, Sonitpur District, Tezpur for favour of kind information & necessary action. Encl:- Copy of the letter mentioned under Ref. =4Nos.

(3) The Superintending Engineer, PWD, Tezpur Road Circle, Tezpur for favour of kind information. Encl:- Copy of the letter mentioned under Ref. =4Nos.

(4) The Asstt. Executive Engineer, PWD Dhekrajuli State Road Sub-Divn. for information & necessary action.

(5) Sri Lalit Kr. Agarwala, Contractor for information. He is asked to stop the work "Hugrajuli to Khaubla Center" until matter is settled down.

(6) Sri Kulen Hazarika, Contractor for information. He is asked to stop the work "Batasipur to Maoriapur Center" until matter is settled down.

(7) Sri Suraj Agarwalla, Contractor for information. He is asked to stop the work "Batasipur to Abhoi Center" until matter is settled down

(A.K. Dutta)

Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

GOVERNMENT OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER::  
WESTERN ASSAM WILDLIFE DIVISION, DOLABARI, TEZPUR

Phone: 0371-2268054 (Tel/Fax)

Email: [dfo.wawl@gmail.com](mailto:dfo.wawl@gmail.com)

No.B/WA/WL/Encroachment/2016/ 312-14

Date: 30/03/2016

4/16

To,

The Executive Engineer,  
Sonitpur State Road Division  
Sonitpur, Tezpur

Sub: Construction of roads/bridges inside the Sonai Rupai Wildlife Sanctuary.

- Ref:
1. Your letter No. C/1511/R/2015/3278 dated 19/03/2016
  2. Complaint filed by Sri Dilip Nath (Reporter) dated 11/03/2016
  3. E-mail received from PCCF (W) & Chief Wildlife Warden, Assam dated 17/03/2016

Sir,

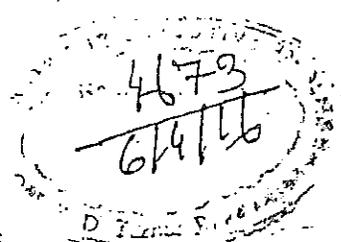
With reference to the subject cited above the undersigned would like to bring to your kind notice that as per Section 2 of Forest (Conservation) Act, 1980 no state government or authority shall use forest land for non forest purpose without the prior approval of central government. The repairing and improvement work of roads inside the Sonai Rupai Wildlife Sanctuary also amounts to non forestry activity and hence the office of the undersigned is not authorised to issue any N.O.C in this regard.

Further, you are requested to obtain the mandatory permission from the Ministry of Environment and Forests, Govt. of India for carrying out the repairing and improvement works of roads inside the Sonai Rupai Wildlife Sanctuary. The guidelines and the details for the same can be obtained from the office of the undersigned.

This is for your kind information and necessary action.

Yours faithfully,

(Rohini Ballave Saikia)  
Divisional Forest Officer  
Western Assam Wildlife Division



Copy to:

1. Deputy Commissioner, Tezpur, Sonitpur for her kind information and necessary action please.
2. Superintendent of Police, Sonitpur, Tezpur for her kind information please.

No. 3420, Dt. 5/4/16

REE(DR)

You are requested to collect guide line from DFO. at early.

James  
5/4/16

(Rohini Ballave Saikia)

Divisional Forest Officer  
Western Assam Wildlife Division

GOVERNMENT OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER:  
WESTERN ASSAM WILDLIFE DIVISION, DOLABARI, TEZPUR

Phone: 0371-2268054 (Tel/Fax)

Email: [dfo.wawld@gmail.com](mailto:dfo.wawld@gmail.com)

No. B/WAWL/Encroachment/2016/ 344-45

Date: 05/04/2016

To,

✓ The Executive Engineer,  
Sonitpur State Road Division  
Sonitpur, Tezpur

Sub: Show cause notice under section 9(1) of Forest (Conservation) Rules, 2003 for violating the provisions of Forest (Conservation) Act, 1980

Ref: Your letter No. C/1511/R/2015/3278 dated 19/03/2016

Sir,

With reference to the subject cited above, it is intended to bring to your kind information that, in your letter (in reference above) you have mentioned that your department has taken up the repairing and improvement works on existing Katcha road as per the instruction of the Deputy Commissioner, Sonitpur. On preliminary enquiry, it was found that the part of the roads fall within the Soni Rupai Wildlife Sanctuary.

In this regard, it would be pertinent to mention that the works taken up by your department has led to the violation of section 2 of the Forest (Conservation) Act, 1980. Therefore, this show cause notice of 60 days is issued to you to give an opportunity for you to explain the works carried out by your department inside the Sonai Rupai Wildlife Sanctuary and as to explain why complaint should not be filed against you in the honourable court for violating the provisions of Forest (Conservation) Act, 1980

Further, under the Section 9(2) of the said rules, you are requested to furnish within a fortnight the complete details and documents related to the following.

1. Under what scheme/project was the existing katcha road made? Since, as per our records there are no forest roads in that area.
2. Under what scheme/project was the repairing and maintenance work carried out in the existing Katcha road?
3. Whether mandatory prior permission of Govt. of India was obtained before starting the construction work?
4. A copy of the proposal of the scheme/project as submitted and as approved should be furnished to this office immediately.

This is for your kind information and necessary action

Yours faithfully,

*Rohini Ballave Saikia*  
5/4/16

(Rohini Ballave Saikia)  
Divisional Forest Officer  
Western Assam Wildlife Division

1781  
31/4/16

ANNEXURE- 9(B)

GOVERNMENT OF ASSAM  
OFFICE OF THE EXECUTIVE ENGINEER:: PWD::SONITPUR STATE ROAD  
DIVISION:: TEZPUR

No. C/1511/R/2016/45

Date:- 8/4/16

To,

The Divisional Forest Officer,  
Western Assam Wildlife Division,  
Tezpur.

Sub.:- Mandatory permission for carrying out repairing and improvement of roads inside Sonai Rupai  
Wild life Sanctuary.

Ref.:- Your letter No.B/WAWL/ Encroachment/2016 dt. 30/03/2016

Sir,

With reference to the subject cited above, you are hereby requested to supply the guidelines  
and details for obtaining permission for carrying out repairing and improvement of roads in forest  
area.

Your early action is requested.

Yours faithfully,

(A.K. Dutta)  
Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

Date:- 8/4/16

Memo No. C/1511/R/2016/46

Copy to :- The Asstt. Executive Engineer, PWD Dhekiajuli State Road Sub-Divn. for information.

(A.K. Dutta)  
Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

(24)

GOVERNMENT OF ASSAM  
OFFICE OF THE EXECUTIVE ENGINEER:: PWD:: SONITPUR STATE ROAD  
DIVISION:: TEZPUR

Date:- 20/5/16

No. C/1511/R/2016/376

To,  
The Divisional Forest Officer,  
Western Assam Wildlife Division,  
Tezpur.

Sub.:- Process for Diversion of Forest Land for Non- Forestry purpose under Forest (Conservation) Act, 1980.

Ref.:- Your letter No.B/WAWI/ Encroachment/2016/254-55 dt. 17/03/2016.

Sir,

With reference to the subject cited above, I have the honour to submit herewith Form-I for NOC for construction of Road (name of roads given below)

- 1) Road from Hwgrajuli to Khaubla Centre.
- 2) Road from Batasipur to Muriapur.
- 3) Road from Batasipur to Abhoi Centre.

Improvement of the Roads have been taken as desired by the Deputy Commissioner, Sonitpur District to provide connectivity to the newly established Police Pokets.

It is also mentioned here that from the down loaded Google map it is observed that only Hwgrajuli to Khaubla Centre Road lies within Sonai Rupai Wildlife Sanctuary. Proposed roads will not constructed Black Topped one. So, you are requested kindly to give necessary NOC to construct Gravel Road considering security point of view.

Your early action in this regard is requested.

Encl:- Format-I along with Map.

Yours faithfully,

(A.K. Datta)

Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

Date:- 20/5/16

Memo No. C/1511/R/2016/377

Copy to :- The Superintending Engineer, PWD, Tezpur Road Circle, Tezpur for favour of information.

(A.K. Datta)

Executive Engineer, PWD  
Sonitpur State Road Division, Tezpur

GOVERNMENT OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER:  
WESTERN ASSAM WILDLIFE DIVISION, BOLABARI, TEZPUR

Phone: 0371-2268054 (Tel/Fax)

Email: [dfo.wawl@gmail.com](mailto:dfo.wawl@gmail.com)

No. B/WAWL/Encroachment/2016/ 591-93

Date: 27/05/2016

To:  
The Executive Engineer,  
Sonitpur State Road Division  
Sonitpur, Tezpur

Sub: Process for diversion of forest land for non forestry purpose under Forest  
(Conservation) Act, 1980

Ref: Your letter No. C/1511/R/2016/376 dated 20/05/16

Sir,

With reference to the subject cited above, I would like to inform you that the proposal submitted by your office for the diversion of forest land for non forestry purpose is incomplete. In this regard you are required to submit in details, digitised geo referenced topo map showing the diversion area, the total area proposed for diversion, the justification for choosing the forest area, the aim and objective of the proposed project, the cost and outlay, FRA certificate as per prescribed format. For any assistance you may contact the office of the undersigned. Information is also available at the MoEF website ([www.moef.nic.in](http://www.moef.nic.in))

Further it is reiterated that the office of the undersigned is not authorised to issue any NOC in this regard and hence you are requested not to carry out any kind of non forestry activity until mandatory permission is obtained from the Government of India. The matter should be given top priority and immediate compliance is requested from your end, since it violates the various provisions of The Forest Conservation Act, 1980 and The Wildlife (Protection) Act, 1972.

This is for your kind information and necessary action.

No. 448, Dt. 30/5/16

Most Important

AEE (Dhekiajuli)

P.L. take necessary  
action with consultation D.F.O  
Western Assam Wildlife Division

30/5/16

(26)

Yours faithfully,

*Rohini*

(Rohini Ballave Saikia)  
Divisional Forest Officer  
Western Assam Wildlife Division

GOVT. OF ASSAM  
OFFICE OF THE DEPUTY COMMISSIONER  
SONITPUR, TEZPUR.

No. SCM. 39/2011-12/991

Dated Tezpur, the 27<sup>th</sup> Feb 2012.

To

The Principal Secretary to Hon'ble CM, Assam  
Dispur, Guwahati-6.

Subject: Encroachment of Sonai Rupai Wild Life Sanctuary.

Ref: CMs Office U/O No. CMO/04/2011/339 dtd. 8<sup>th</sup> Feb 2012.

Madam,

With reference to the above subject and in respect of the petition submitted by Sri Dilip Nath, Vill-Panchnoi, P.O.-Hugrajuli, District-Sonitpur, Assam, I have the honour to inform you that the presence of encroachers in the Sonai Rupai Wild Life Sanctuary is a reality. In fact, not only Sonai Rupai Wild Life Sanctuary but also in other Reserve Forest huge areas are under encroachment and these encroachment are going on for last several years. At present there are about 2 (two) lakhs such encroachers in forest areas in the district.

It is also fact that some EGS Centres were established within these RF in order to cover the population under universalisation of the elementary education through Sarva Siksha Abhijan (SSA)

It is also fact that these encroachers being Indian citizen & ordinary resident of the district are entitled to voting rights. Also no eligible voter can be left out on the ground of being encroachers and accordingly the name of these population to get into Electoral Rolls. As per guidelines of the Election Commission of India (ECI) polling station are to be set up within 2(two) km reach of voters. Thus, in the process some polling stations were also set up in the RF / Wild Life Sanctuary during last elections.

In view of this, it is submitted that this issue of inclusion of the names of forest encroachers in the voter list and establishment of polling station within RF area will be settled only if Forest Deptt. evict these encroachers from the forest area.

This is for favour of your kind information and necessary action.

Yours faithfully,

Sd/-  
(T.C. Sarma)  
Deputy Commissioner  
Sonitpur, Tezpur.

Memo No. SCM. 39/2011-12/991-A

Dated Tezpur, the 27<sup>th</sup> Feb 2012.

Copy to :

Sri Dilip Nath, Vill-Panchnoi, P.O.-Hugrajuli, District-Sonitpur, Assam for information.

  
(T.C. Sarma)  
Deputy Commissioner  
Sonitpur, Tezpur.

অসম চৰকাৰ



GOVERNMENT OF ASSAM

**GOVT OF ASSAM**  
**OFFICE OF THE PROJECT DIRECTOR, ITDP, TEZPUR**  
**SONITPUR::ASSAM**

No: ITDP (T). FR Act/06 RTI.500/2022-23/ 5530

Date:- 10/08/2023.

To,

**Shri Dilip Nath**  
**Member, Aranya Suraksha Samiti, Assam**  
**RTI Worker**  
**Vill- Panchnoi**  
**P.O- Hugrajuli-784507 via Mazbat**  
**Dist- Sonitpur (Assam)**

**Subject: Reply of RTI Application No: 313/50/22-23(A) 774 dated: 30/06/2023**

Sir,

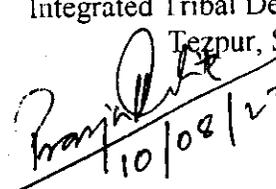
With reference to the subject cited above, I am pleased to attach herewith the reply to your RTI Application No: 313/50/22-23(A) 774 dated: 30/06/2023.

Reply to Q-1:- Kindly find the attached document herewith this letter as Reply to Query No.1

  
 Project Director

Integrated Tribal Development Project (ITDP)

Tezpur, Sonitpur (Assam)

  
 10/08/23  
 Project Director  
 Integrated Tribal Dev. Project  
 Tezpur, Sonitpur

(28)

MEETING OF DISTRICT LEVEL COMMITTEE ON FOREST RIGHT ACT.2006 HELD ON  
 IN THE OFFICE CHAMBER OF THE DEPUTY COMMISSIONER, SONITPUR.

Present

- Sri M.K. Deka, IAS, Deputy Commissioner & Chairperson DLC, FR Act, 06 Sonitpur  
 Sri Kulen Sarma, ACS, ADC and I/c Project Director, ITDP, Tezpur, Sonitpur Member Secretary DLC, FR Act '0. Sri  
 Sri Anil Sharma, DFO, Northern Assam wild life Division, Tezpur.  
 Sri Satvananda Ojha, ACF, Sonitpur West Division, Tezpur.  
 Sri Babayoti Ojha, ACS, ADC, Sonitpur.  
 Sri S.T. Rahman, ACS, SDWO, Tezpur  
 Sri Mrs. Uma Timungpi, ZPC, Gingia Member FR. Act  
 Sri Sri Prasanta Basumatary, ZPC, Kalabari, Member FR. Act  
 Sri Sri Biswa jyoti Das, ACF, Sonitpur East Division, Biswanath Chariali.

The meeting was presided over by Sri M.K. Deka, IAS Deputy Commissioner, Sonitpur & Chairperson of DLC FR Act'2006.

Sri Kulen Sarma, ACS, ADC, Sonitpur, I/c Project Director, ITDP Tezpur & Member Secretary of District Level Committee, welcome all the members present in the meeting and explained in detail about the sitting of the meeting.

At the outset, the committee discussed and examined the decision taken under resolution of the Sub-Divisional Level committee (SDLC) meeting of Tezpur held on dated 10/01/2011 and 10/01/2017, where the committee rejected the claim of a total of 21,515 individual and community.

- The District Level Committee there after examined all issues and following facts Emerges.
- (i) Since sub-divisional level committee has already given its approval for approval for forest claims of any individual and community, hence there is no pendency at the district level.
  - (ii) There is no appeal petition filed by any individual or community during the stipulated time against the decision of sub-divisional level committee.

The District Level Committee after threadbare discussion and examination of all issues and also keeping in view the judgement of Hon'ble Guahati High Court @5043/08 dtd. 22/10/09 and 3840/08 Dtd. 22/10/09 accepted the decision of the sub-divisional level committee and resolved to apprise the Government accordingly.

Sd/-  
 Deputy Commissioner,  
 Sonitpur, Tezpur  
 &

Chairman, District Level Committee FR Act, Sonitpur

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21/10/17  
 9/1/17

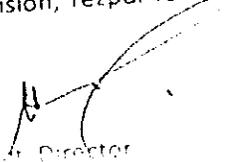
(29)

(2)

Dated :- 23/02/15

NO. 103 ITDP(1)338- FR. Act.06/2008-09/Pl-II/102-415

- Copy to
1. P.S. the Chief Secretary to the Government of Assam, Dispur for favour of kind appraisal to the Chief Secretary, Assam
  2. The Commissioner & Secretary to the Government of Assam, Forest & Environment Department, Dispur for favour of kind information.
  3. The Commissioner to the Government of Assam, WPT & BC Department Guwahati for favour of kind information.
  4. The Principal Conservator of Forests & HOFF, Assam, Panjabari, Guwahati-38 for favour of Kind information.
  5. The Commissioner, North Assam Division, Tezpur, for favour of kind information.
  6. The Deputy Commissioner, Sonitpur, Tezpur
  7. The Conservator of Forest, Northern Asasam Circle, Tezpur for information.
  8. The Divisional Forest officer, Sonitpur, West Division, Tezpur for information.
  9. The Divisional Forest officer, Sonitpur East Division, BNC for information.
  10. The Divisional Forest officer, Western Assam, Wild life Division, Tezpur for information.
  11. All members of the District Level Committee.

  
Pradyot Director

ITDP, Tezpur

&

Member Secretary, DLC FR. Act.06 Sonitpur

Minutes of the review meeting on forest right Act, 2006, held on  
14/8/2018 at the Conference Hall of Circuit House, Tezpur.

Members present:-

- 1 Chandan Brahma, Hon'ble Minister, Tourism and WPT & BC etc., Assam.
- 2 Manoj Kr. Deka, IAS, Deputy Commissioner, Sonitpur, Tezpur.
- 3 Nabajyoti Ozah, ACS, ADC, Sonitpur.
- 4 Kulen Sarmah, ACS, ADC & In charge, ITPD, Tezpur.
- 5 Ranjit kowar, DFO, Sonitpur West Division
- 6 Pankaj Sarma, DFO, Western Assam Wild Life Division.
- 7 Pankaj Chamuah, ACS, Circle Officer, Tezpur Rev. Circle & In Charge, SDWO, TEZPUR
- 8 SURJO Kamal Bora, ACS, Circle Officer, Chariduar Rev. Circle.
- 9 Sabyasachi Kashyap, ACS, Circle Officer, Dhekiajuli Rev. Circle
10. Smti. Antara Sen, ACS, Assistant Commissioner, Tezpur
11. Smti. S. Hazarika, DSWO, Sonitpur, Tezpur.
12. Sri Prabhat Das, Inspector of School & DEEO, Sonitpur District Circle, Sonitpur, Tezpur.
13. Sri Sanjoy Das, Junior Engineer, SSA, Sonitpur, Tezpur.
14. Sri R.N. Brahma choudhury, DIPRO, Tezpur
15. Sri Prasanta Boro, Gel. Secy. Boro Sahitya Sabha, Tezpur
16. Sri Pakhi Ram Basumatary, Co-Ordinator, FRC, Sonitpur
17. Sri Sambaru Muchahary, Rangapara.
18. Sri Lenin Basumatary, Dhekiajuli
19. Sri Sambar Basumatary, Dhekiajuli.
20. Sri Indra Kt. Basumatary, DBSS, Sonitpur
21. Mr. Gayari, Sivapur FRC.
22. Sri Sailen Basumatary, Ex. Member, SDBSS
23. Sri Binanda Basumatary, Secy. No.2 Santipur FRC.
24. Sri Niren Muchahary, Agopur FRC.

The meeting was chaired by Sri Chandan Brahma, Hon'ble Minister, Tourism and WPT & BC etc. Assam.

At the very outset Sri Manoj Kr. Deka, IAS, Deputy Commissioner, Sonitpur and chairperson of District Level Committee, Forest Right Act, 2006 extended his warm welcome to all the esteemed member present.

The Deputy Commissioner & Chairperson of District Level Committee on implementation of Forest Right Act, 2006 detailed on the resolution taken in the last meeting



GOVERNMENT OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER  
WESTERN ASSAM WILDLIFE DIVISION :: DOLABARI :: TEZPUR

Ref: WPT/2019/439-40

Email: dfo.wowl@gmail.com

WPT/2019/439-40

Dated 3<sup>rd</sup> July, 2019.

Divisional Forest Officer  
Western Assam Wildlife Division  
Tezpur

Chief Conservator of Forests  
Kamakhya  
Assam  
Tezpur, Guwahati - 37

Compliance of Hon'ble Supreme Court orders dated 13.02.2019 & 28.02.2019 in Writ Petition (Civil) No. 103/2008 Wildlife First & others -Vs- MoEF & others - submission of report to Hon'ble Supreme Court by Forest Survey of India - reg.

Letter No. FG 84/Recognition Forest Right 2006-07/Pt -VIII dated 27.06.2019

With reference to the subject cited above, I have the honour to furnish the following information concerning to Point (i) to (iv) as asked for vide above referred letter.

(i) There are no polygons (record of geo-coordinated maps) available with the concerned authority on the rejected claims of those under the jurisdiction of this Division.

(ii) The Forest Right Committees were constituted for claim of rights but geo-coordinated maps had not been prepared by the concerned authority against the claimants and moreover, District Level Committee had rejected all the claims pertinent to the jurisdiction of this Division. The minutes of the meeting held in the Conference hall of Deputy Commissioner, Sontpur, Tezpur on 9<sup>th</sup> March, 2019 in presence of the Hon'ble Minister of Tourism and WPT & BC, Assam enclosed herewith, wherein it was clearly quoted "assured instructions/guidelines will be issued by the WPT & BC Deptt. after obtaining legal advise/views from Judicial Department regarding how to deal with the rejected applications."

But, so far no instruction/guideline has been provided in this regards

Approximately more than 85 sq km of Sonai-Rupai Wildlife Sanctuary is under attachment order to hand over the area to this Division during 2006 where claim has been made under PFA 2006.

Requesting for information and necessary action.

Yours faithfully



(Pankaj Sharma)  
DFO  
WAWL Division

Requesting the Principal Chief Conservator of Forests, Wildlife & CWLW, Assam, Aranya Bhawan, Gauhati for favour information and necessary action.



(Pankaj Sharma)  
DFO  
WAWL Division

GOVT. OF ASSAM  
OFFICE OF THE DIVISIONAL FOREST OFFICER  
SONITPUR WEST DIVISION, TEZPUR

Subject: Encroachment of Land rights (2011-2012) 2773/25  
Date: 2020.25.11.2021

Conservator of Forests,  
Northern Assam Circle,  
Tezpur

Minutes of the Review meeting held on 5<sup>th</sup> October 2021 of Forest Right Act 2003

Ref: Deputy Commissioner, Sonitpur, Tezpur letter No. SRS-153/2020-21 (P-1) dated 11.11.2021

In reference to the above mentioned subject, I have the honour to advise herewith the minutes of the review meeting held on 5<sup>th</sup> October 2021 at Deputy Commissioner's Office, Sonitpur under the Chairmanship of Dr. Rongy Peppu, Hon'ble Minister of WPI & R. In Forest Right Act 2003, in this regard, it is mentioned here that, in point No.4 of the minutes, it has been clearly stated that the entitlement of the individual to claim land right under the provision of Forest Right Act 2003 mentioned as "It was clarified that even if there is no official record of any settlement of the persons mentioned by the Forest Department, if any claimant can produce any evidence of his existence in the forest area in 1876, 1878 or 1922, or whichever the year may be, prior to 15<sup>th</sup> December 2003, under Rule 13, he can be considered eligible for Forest right. Within the ambit of the provisions of the Act, there is ample opportunity given to a forest dweller to prove his claim. Documentary evidence is only one kind of such evidence Rule 13 of the Act lays down a number of such criteria which may serve as evidence for determining forest rights to persons" even if they are encroachers in the forest land i.e. Reserve Forests/Protected area etc.

In this connection, I would like to mention here with the following facts for favour of your kind perusal and needful action.

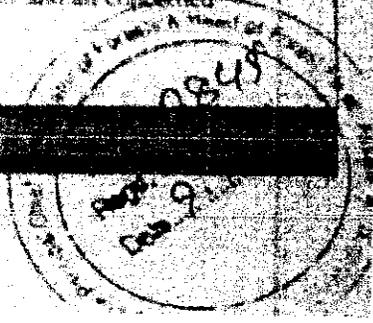
Out of total 48067.77 Ha Reserve Forests, the magnitude of encroachment is in higher in two Reserved Forests namely Charduar R.F. and Balipara R.F. which occupies the extreme north portion of district between Jibharali and Paachnoi River.

No scientific survey has so far been carried out to ascertain the actual extent of encroachment in the Reserve Forests under this Division, but, as per record, the figures maintained in the following table in Reserve Forests indicates the following.

No.	Name of R.F.	Total area (in Ha.)	Area under encroachment (in Ha. Approx.)	Percentage of Encroachment	Approx. no. of household- Inhabitants	Population No. Approx.
1	Charduar R.F.	24,572.00	23,000	91.59%	22,500	1,05,000
2	Balipara R.F.	18,923.00	10,000	52.70%	2,500	15,000
3	Sengharai R.F.	339.86	200	58.84%	-	-
4	Chandrapur R.F.	42.27	-	-	-	-
5	Chandrapur (B) R.F.	156.15	-	-	-	-
6	Singri R.F.	485.52	-	-	-	-
	Total	44,067.77	33,200	-	25,000	1,20,000

At present major portion of the Reserve Forests areas under Sonitpur West Division, Tezpur are under encroachment and these encroached areas are used by the encroachers for construction of their dwelling house, educational and religious institutions and for agricultural crop.

Further, as per direction of the Govt. district administration has initiated all possible measures to give the voting rights to the above people residing inside the Forests areas. As far as enumeration of and giving voting rights to the encroachers of Charduar R.F. (Butavshipur and Hugrajuli areas) under Dinkrajuli constituency and Balipara R.F. of Soitea constituency is concerned, my predecessors had opposed the process of enumeration itself at the very beginning and it was requested to the Deputy Commissioner, Sonitpur vide this office letter no. B/11/52/encroachment/7954 dtd. 20.02.2018 to stop the process of enumeration of encroachers. The then Conservator of Forests, Northern Assam Circle, Tezpur also requested the Deputy Commissioner, Sonitpur to stop the enumeration of encroachers vide his letter number FGN-13/Encroachment/SW/04 of 15.06.2018 dtd. 15.06.2018. But the encroachers were enumerated and they also casted their votes in the Assembly election 2018. In the year 2019, they also managed the Deputy Commissioner, Sonitpur and all concerned



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2006 and letter no. W/jector/4472-78 dtd. 01/08/2006 not to allow formation of Village Council in notified areas of reserved forests of Sonitpur West Division, Tezpur, but no fruitful result has been achieved.

Moreover, this division falls under Sonitpur Elephant Reserve. Total area of this division is 1,20,000 ha (12,000 sq km), out of which 440.67 sq km areas are under notified forests and more than 90% of the notified forests are in the grip of encroachers. Rapid shrinkage of habitat as well as its fragmentation has impacted the population of various species of animals in different habitats. In case of elephants, like the elephant which has a tradition of long range movement for their foraging grounds and water resources, have not only exposed the animals to the risk of being killed by the human being, but also have exposed the human population to large scale confrontation with the settlement coming on the way of the animal. Further, Elephant are migratory in nature. Obstruction in Regular Dandi (Path) of the elephant by construction of dwelling houses, schools, Anganwadi centres, religious institution, water supply, power lines etc. disturbs the ageold migratory route of the elephant and resulted in the death of many of these animal herds.

In this connection, it is worth mentioning here that, as per section-2(C) "Definition" of the Act, the claimant of the PFC must fulfill the following conditions -

"The claimant resides in forest" which perhaps means that the claimant must have the residence in the forest land only and no any other dwelling hutland in other revenue areas. Otherwise, some absentee claimants appear to grab the land on the pretext of the act which shall be very unfortunate.

Moreover, in the same sub-section, it is also stipulates that "who depends as forest or forest land for his/her livelihood or needs" - so, person having other occupation or business or those person who are not dependent on forest shall not be entitled to claim the land as per rule.

Likewise, under section 4(c) of the relevant rule made by the Central Govt. for implementation of the Act, it is stipulated that "... after giving reasonable opportunity to interested person and authorities concerned."

So, those claimants have been rejected at the time of verification process during 2009 or 2010, because they should not fulfill the stipulated criteria as per the said Act and hence, they have been rejected at that time and no other reason to whom their claims are to be verified again.

In view of the above, I earnestly request your honour to kindly look into the matter and take up the same with the higher authority for taking appropriate action before any direction is issued from the competent authority to giving the land right to the encroachers as per the above said Act.

This is for favour of your kind information and necessary action.

Encl: As stated above

Yours faithfully,

*M. S. Islam*  
Divisional Forest Officer,  
Sonitpur West Division  
Tezpur

Copy to:-

- 1) The Principal Chief Conservator of Forests & Head of Forest Force, Assam, Aranya Bhawan, Panjabari, Guwahati-37 for favour of his kind information and necessary action.
- 2) The Ad. Principal Chief Conservator of Forests, (I) Upper Assam Zone, Jorhat for favour of his kind information and necessary action.

*M. S. Islam*  
Divisional Forest Officer,  
Sonitpur West Division  
Tezpur

35

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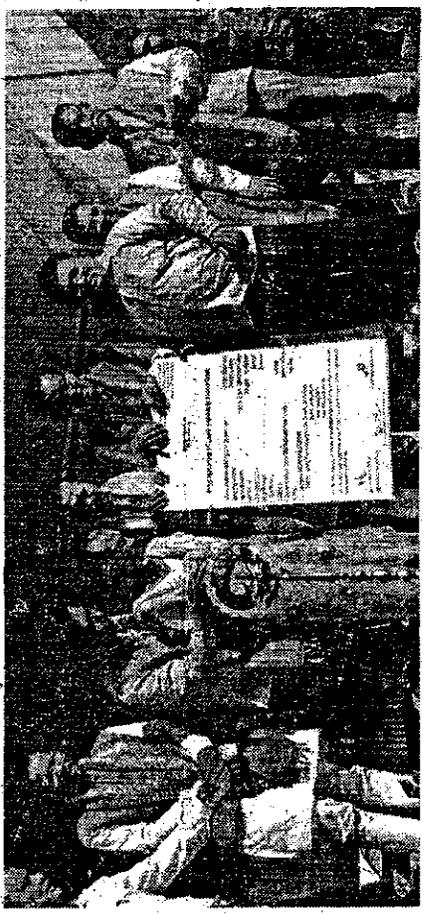
অসমীয়া প্ৰতিলিপি ■ গুৱাহাটী ■ দেওবাৰ, ৬ নবেম্বৰ, ২০২২/১৯ কাৰ্তি, ১৯৪৪ শক

# ঢেৰীয়াজুলিৰ ১,৩০১ জনজাতীয় পৰিয়ালক ভূমিস্বত্ব

## বন অধিকাৰ আইন-২০০৬ৰ অধীনত ভূমিপুত্ৰক মাটি প্ৰদান কৰাটো ঐতিহাসিক ঘটনা : প্ৰমোদ বড়া

প্ৰতিদিন বিশেষ সেৱা, ঢেৰীয়াজুলি, ৫ নবেম্বৰ : শোণিতপুৰ জিলাৰ চাৰিদুৱাৰ সংৰক্ষিত বনাঞ্চল আৰু সোণাই-কাপাই অত্যধিকৰ তিচ্ছত বনবাস কৰি থকা ১,৩০১ টা পৰিয়ালক আজি শোণিতপুৰ জিলা প্ৰশাসনে ৰা অধিকাৰ আইন-২০০৬ৰ অধীনত ভূমিস্বত্ব প্ৰদান কৰিছে। এই উপলক্ষে ৩৩ জন ঢেৰীয়াজুলি সমষ্টিৰ হুমেজুলি প্ৰাথমিক বিদ্যালয়ৰ বেলেপথৰত এখন বিশাল সৰু অনুষ্ঠিত হয়। দিনৰ ১২ বজাত অনুষ্ঠিত সভাখনত হস্তান্তৰ আৰু বন্যশিল্প বিতপৰ মন্ত্ৰী উৰ্ণাও গৌড়া ব্ৰহ্মই মুখ্য অতিথি হিচাপে উপস্থিত থাকি মাটি দৰলৰ প্ৰমাণপত্ৰ বিতৰণ কাৰ্যক্ৰমৰ শুভাৰম্ভ কৰে। সভাত অসম চি ব্ৰহ্মই কয়, বন আইন ২০০৬ৰ অধীনত বনাঞ্চলৰ তিতৰত বনবাস কৰা লোকসকলক মাটিৰ প্ৰমাণপত্ৰ দিয়া হৈছে। এই লোকসকলে মাটিৰ প্ৰমাণপত্ৰ লাভ কৰি উচিত ন্যায় পালে বুলি মন্ত্ৰীপৰাৰ্কেয়ে উল্লেখ কৰে। শোণিতপুৰ উপায়ুক্ত দেৱকুমাৰ শিৱই আলমৰী ভাষণ দিয়া অনুষ্ঠানত জলসিঞ্চন মন্ত্ৰী অশোক সিংহলে কয়—

মুখ্যমন্ত্ৰী হিমন্ত বিশ্ব শৰ্মাৰ বলিষ্ঠ পদক্ষেপৰ বাবে ঢেৰীয়াজুলিৰ বনাঞ্চলত বনবাস কৰা ভূমিপুত্ৰই ভূমিৰ অধিকাৰ পালে সমৰ্থ হৈছে। বিগত চৰকাৰসমূহে এইসকল লোকক ভূমিৰ অধিকাৰ দিবলৈ সাহস কৰা নাছিল। জনজাতীয় লোকসকলক ন্যায় দিবলৈ পূৰ্ব চৰকাৰে সন্দিগ্ধ প্ৰকাশ কৰা নাছিল। বহু বাধা, বাত-প্ৰতিবাদৰ মাজেৰে হিমন্ত বিশ্ব শৰ্মাৰ চৰকাৰে সাহসী পদক্ষেপৰ বাবে জনজাতীয় লোকসকলে আজি মাটিৰ প্ৰমাণপত্ৰ লাভ কৰিলে বুলি মন্ত্ৰী সিংহলে উল্লেখ কৰে। অনুষ্ঠানত যি টি চিৰ মুখ কাৰ্যবাহী সদস্য প্ৰমোদ বড়ায়ে কয়— এই এনফুৰ সত্ৰপতি হৈ থকাৰ সময়তে শ্ৰেণীজুলিৰ উত্তৰাঞ্চলৰ কল্ভুৰিত বনবাস কৰা ভূমিপুত্ৰ বৃদ্ধসকলক বন অধিকাৰ আইন-২০০৬ৰ অধীনত ভূমিৰ অধিকাৰ দিয়াৰ দৰ্ঘীত বহু আপেলান প্ৰতিবাদ কৰা হৈছিল। বিগত সময়ৰ কোনো এক চৰকাৰে এই লোকসকলৰ সমস্যা উপলব্ধি কৰা নাছিল। মৌলিক অধিকাৰৰ পৰা বঞ্চিত হ'বলগীয়া হৈছিল। কিন্তু বন অধিকাৰ আইন-২০০৬ অনুসৰি ইয়াৰ ভূমিপুত্ৰক মাটিৰ স্বত্ব প্ৰদান



নগাঁৱত অবাধে চলিছে মদ-দ্ৰাগছৰ প্ৰচলন

### মৰিকলং চাৰিআলিৰ অৰৈধ বাৰত গ্ৰাহক-মালিকৰ প্ৰচণ্ড মাৰপিট

হোজাইৰ যমুনা নদীত অৰৈধ বালি খনন

(৩৮)

of deforestation and elephant habitat loss and degradation are because of illegal encroachment by humans of the natural habitats, resulting an ever-increasing pressure of human development are depletion, degradation and fragmentation of habitats, loss of corridors and an increased human-animal conflict.

Copy of the assessment report is annexed herewith and marked as ANNEXURE-A.

I am a social activist, environmentalist, conservationist, preservationist, citizen of India, and a permanent resident of the Sonitpur district in Assam, as such I am entitled to all the rights, privileges and protections guaranteed under the various provisions of the Constitution of India and any other laws framed thereunder. I have been raising voices against the illegal encroachment, settlement of certain class of population in the reserved forest area in Sonai Rupai Wildlife Sanctuary, construction of roads and schools in the reserved forest without any prior approval of the Central Government, which are highly illegal, mala fide, and contrary to the established provisions, mandate and scheme of the Forest (Conservation) Act, 1980. I am contending that there has been a purported exercise of malpractice amongst the officials of the P.W.D. (Roads) Sonitpur State Road Division, Tezpur and also, the State Government wherein, without any approval of the Central Government and only, on the direction of the Deputy Commissioner of the Sonitpur district, roads were being constructed inside the reserved forest Sonai Rupai Wildlife Snactuary. I am basing such malpractice in a chronological manner on an application filed under the Right to Information Act, 2005 bearing Ref. No.49/2019-20/636 (B) dated 15/06/2020 to the State Public Information Officer, Executive Engineer P.W.D., Sonitpur State Road Division, Tezpur. I was shocked to see that such illegal practice instead of several intimations from the Divisional Forest Officer, Sonitpur West Division, Tezpur vide various communications sent to the Executive Engineer, P.W.D. (Roads) (Which will be appended as ANNEXURES at latter part of this application) there was no approval from the Central Government to the concerned department, for carrying out such construction works.

I also filed an RTI Application, bearing No. 313/50/22-23(A) 774 dated 30/06/2023, to the Project Director, Integrated Tribal Development Project (ITDP), Tezpur, Sonitpur, wherein it came to light that '*under resolution of the Sub-Divisional Level Committee (SLDC) meeting of Tezpur held on dated 10/01/2011 and 09/01/2017, where the committee rejected the claim of total of 21,515 individual and community.*' Further, it is also discerned from the Minutes of the Meeting of District Level Committee on Forest Right Act, 2006 held at the Office Chamber of the Deputy Commissioner, Sonitpur, on 14/8/2018 '*the District Level Committee after threadbare discussion and examination of all issues and also keeping in view of the judgment of Hon'ble Gauhati High Court in WP (C) 5043/08*

dated 21/10/09 and WP(C) 3840/08 dated 22/10/09 accepted the decision of the sub-divisional level committee and resolved to apprise the Government accordingly.' It is also shocking that as per the ' Minutes of the Review meeting held on 5<sup>th</sup> October, 2021 of Forest Right Act, 2006, 'Out of total 44067.77 Ha. Reserve Forests, the magnitude of encroachment is in higher in two Reserve Forests namely Charduar R.F and Balipara R.F. which occupies the extreme north portion of the District in between Jiabharali and Panchnoi River.'

Sl.No.	Name of R.F.	Total area (in Ha)	Area under encroachment (in ha. Approx)	Percentage of encroachment	Approx. No. of household/hutments	Population No. Approx
1.	Charduar R.F	24,072.00	22,000	91.39%	22,500	1,05,000

'At present major portion of the Reserve Forests areas under Sonitpur West Division, Tezpur are under encroachment and these encroached areas are used by the encroachers for construction of their dwelling house, educational and religious institutions for agricultural crop.

Further, as per direction of the Govt. District administration has initiated all possible measures to give the voting rights to the above people residing inside the forests areas. As far as enumeration of and giving voting rights to the encroachers of Charduar RF (Batashipur and Hugrajuli area) under Dhekiajuli constituency and Balipara R.F. of Sootea constituency is concerned, my predecessors had opposed the process of enumeration itself at the very beginning and it was requested to the Deputy Commissioner, Sonitpur vide this Office letter no. B/16/5/Encroachment/7954 dated 28/10/2004 to stop the process of enumeration of encroachers. The then Conservator of Forests, Northern Assam Circle, Tezpur also requested the Deputy Commissioner, Sonitpur to stop the enumeration of encroachers vide his letter number FGN/13/Encroachment/SW/04/6158-62 dated 01/11/2004. But, the encroachers were enumerated and they also casted their votes in the Assembly Election, 2006. Further, this office also requested the Deputy Commissioner and all concerned authorities vide letter no.B/Election/4472-78 dated 1/08/2006 not to allow formation of Village Panchayat in encroached areas of reserved forests of Sonitpur West Division, Tezpur, but no fruitful result has come out.

Moreover, this division falls under Sonitpur Elephant Reserve. Total area of this division is approximately 2350 Sq.KM, out of which 440.67 sq. km areas are under notified forests and more than 73% of the notified forests are in the grip of encroachers. Rapid shrinkage of habitat as well as its fragmentation has isolated the population of various species of animals in different habitats. In case of such fragmentation have not only exposed the animals to the risk of being killed by the human being, but also have exposed the human population to large scale confrontation with the settlement coming on their way of movement. Further, Elephant are migratory in nature. Obstruction in Regular Dandi (Path) of wild

*elephants by construction of dwelling houses, Angandwadi centres, religious institution, setting up of Mobile Towers etc. disturbs the age old migratory route of the elephant and resulted in the present scenario of man-animal conflict.'* It was also requested by the Divisional Forest Officer, Sonitpur West Division, Tezpur that at the time of the verification process during 2009-2010, the claims of the encroachers/claimants under the Forest (Conservation) Act, 1980, were rejected by observing the due process of law as stipulated, and since their claims were rejected, and no other reason their claims were to be verified again. The illegal activities of encroachment in the Sonai Rupai Wild Life Sanctuary, it was recorded that about 2 (two) lakhs encroachers in the forest areas in the district. The then Deputy Commissioner of the Sonitpur District had also stated that there were EGS Centres were established within the areas of the reserved forests 'to cover the population under universalization of the elementary education through Sarbha Siksha ABhijan (SSA). In that, it was also submitted by the then Deputy Commissioner that 'issue of inclusion of the names of forest encroachers in the voter list and establishment of polling station within RF area will be settled only if Forest Depptt. Evict these encroachers from the forest area.'

I am appalled by such patent illegality that I have been left with no other alternative, but to write this application. I am highlighting the patent illegalities, and as I am aggrieved by the actions of the state authorities, I have formed a legal right to prefer this application for kind consideration, and request that prompt and zealous action on your part. The illegalities are detailed herein below:

**1. Permission and construction of illegal roads:**

a. **27/01/2016:** The Office of the Additional Chief Engineer, P.W.D. (Roads), Tezpur vide communication no. ACE/T/CS/SSD/04/2016/11 dated 27/01/2016 issued Letter of Acceptance to one Sri Kulen Hazarika, notifying that his Bid dated 19/01/2016 for the "Construction of Road from Batasipur to Mouriapur Centre (CH.600 m to Ch. 6300.00m)" under the Fakhruddin Ali Ahmed Paki Path Nirman Achari Under Dev. Of Specific Roads for Year 2015-16 under Sonitpur State Road Division for contract price of Rs. 83,74,210/, which the Department had accepted.

A copy of the said Letter of Acceptance for the "Construction of Road from Batasipur to Mouriapur Centre" is annexed herewith and marked as **ANNEXURE-1.**

b. **2/2/2016:** The Office of the Chief Engineer, P.W.D. (Border) Roads and NEC Works, issued an instruction to proceed with the execution of the improvement of road Tarajuli to Dayalpur (Ch.4400.00 M to Ch.9100.00 M & from Ch.9400.00 M to

Ch.11000.00M) under the Fakhruddin Ali Ahmed Paki Path Nirman Achari under the Development of Specific Roads for the year 2015-16, for the contract price of Rs. 1,34,36,360.00/- to one Lalit Kr. Agarwala. The same authority also issued an instruction to proceed with the execution of the construction of road from Hugarajuli to Khaubla Center (Ch.00M to Ch.12000.00 M) Fakhruddin Ali Ahmed Paki Path Nirman Achari under the Development of Specific Roads for the year 2015-16 for the contract price of Rs. 1,75,64,692.00/-.

On the same day, the said authority, issued a notice to proceed with the work of construction of road from Belsiri to Abhoi Centre (CH.5200.00m to Ch.12000.00m) under the Fakhruddin Ali Ahmed Paki Path Nirman Achari under the Development of Specific Roads for the year 2015-16 for the contract price of Rs. 1,38,49,660.00/- to one Suraj Agarwala. Furthermore, the Office of the Chief Engineer, P.W.D. (Roads) also issued notice to proceed with the work of construction of road from Batasipur to Abhoi Center (Ch.0.00M to Ch.6300.00M) under the Fakhruddin Ali Ahmed Paki Path Nirman Achari under the Development of Specific Roads for the year 2015-16 for the contract price of Rs.1,40,35,444.00/- to one Suraj Agarwala.

Copies of the issuance of notice to proceed with the work of the improvement of road Tarajuli to Dayalpur (Ch.4400.00 M to Ch.9100.00 M & from Ch.9400.00 M to Ch.11000.00M) are annexed herewith and marked as **ANNEXURES-2, 3, 4 and 5.**

**c. 17/03/2016 to 20/09/2016:** On 17/03/2016 the then Divisional Forest Officer, wrote a letter to the Executive Engineer, Sonitpur State Road Division, that there had been construction of roads and bridges inside the Sonai Rupai Wildlife Sanctuary under the Fakhruddin Ali Ahmed Paki Path Nirman Achari under the Development of Specific Roads for the year 2015-16, and as per the record of 12 Kms road from Hagarajuki to Khaola, 8kms of road from Batasipur to Muriapur and 6kms of road from Batasipur to Aboi centre was under construction, and parts of which are falling within the Sonai Rupai Wildlife Sanctuary. Complaints were also received, and the Range Officer in his field Inspection report stated that about 5 kms of the road/bridge construction, i.e. from the Laibari centre to Bagai centre via Khaola Centre falls inside the Sonai Rupai Wildlife Sanctuary and such constructions, amounted to "Non-Forestry" activity and mandatory permission from the Ministry of Environment and Forests, Govt. Of India is required for carrying out such activity and even, the Government agencies are liable to be prosecuted for violation of the Forest (Conservation) Act, 1980. The Divisional Forest Officer sought whether such prior approval or permission was taken from the Central Government.

A copy of the enquiry sent by the Divisional Forest Officer sent to the Executive Engineer on 17/3/2016 is annexed herewith and marked as **ANNEXURE- 6.**

**18/3/2016 and 19/03/2016:** On receipt of the said query, the Office of the Executive Engineer, P.W.D., Sonitpur State Road Division had specifically stated "1. Works taken as per instruction of the Deputy Commissioner, Sonitpur, vide his letter memo. No. SNZ.15/2014/100, dated. 02/02/2015.

Copies of the said reply are annexed herewith and marked as **ANNEXURES-7 and 8.**

**19/03/2016, 30/03/2016, 8/4/2016, 20/05/2016, 27/05/2016:** On 19/03/2016, the Divisional Forest Officer on receipt of public complaint regarding execution of development works inside Charduar Reserve Forest/ Sonai Rupai Wildlife Sanctuary, wrote to the Conservator of Forest that he himself immediately intimated the Executive Engineer, P.W.D. about whether the works of the 3 (three) roads namely Hugrajuli to Khabla centre road, Batasipur to Maoriapur centre road and Batasipur to Aboi centre, necessary approval from the Central Government, i.e. Ministry of Environment and Forest was obtained.

On 30/03/2016, the Executive Engineer asked the Divisional Forest Officer to issue No Objection Certificate as regards the construction of the three roads, and the Divisional Forest Officer, stated that he had no authority to issue any NOC and as such, issuance of it would be violative of the Forest (Conservation) Act, 1980.

On 5/04/2016 the Divisional Forest Officer asked the Executive Engineer under what scheme the existing katcha road being made, repairing and maintenance work carried out in the existing katcha road, mandatory Central Government permission acquired or not, and on 8/4/2016, the Divisional Forest Officer was asked by the Office of the Executive Engineer to provide for the guidelines and details for obtaining permission for carrying out repairing and improvement of roads in forest area.

On 20/5/2016, again the Executive Engineer asked the Divisional Forest Officer to issue No Objection Certificate as regards the construction of the three roads, and the Divisional Forest Officer, stated that he had no authority to issue any NOC and as such, issuance of it would be violative of the Forest (Conservation) Act, 1980.

On 27/05/2016, the Divisional Forest Officer wrote to the Executive Engineer that the proposal for submission for the diversion of forest and for non forestry purpose is incomplete, there was further request to the P.W.D. to submit in details, digitized geo reference topo map choosing the forest area, the aim objective of the proposed project and further the Divisional Forest Officer, stated that he had no authority to

issue any NOC and as such, issuance of it would be violative of the Forest (Conservation) Act, 1980.

Copies of communications between the authorities are annexed herewith and marked as **ANNEXURES-9, 9(A),9(B) 10, and 11.**

There was no prior approval, as being reflected from the above - mentioned communications, from the Central Government, Ministry of Environment and Forest, the whole exercise of construction and execution of work as regards roads were acts perpetuated by illegalities, and to give legitimacy for the encroachers.

## **2. Illegal encroachment and depletion of forest:**

**8/02/2012:** the Divisional Forest Officer, Sonitpur West Division, Tezpur in its letter that at the time of the verification process during 2009-2010, the claims of the encroachers/claimants under the Forest (Conservation) Act, 1980, were rejected by observing the due process of law as stipulated, and since their claims were rejected, and no other reason their claims were to be verified again. The illegal activities of encroachment in the Sonai Rupai Wild Life Sanctuary, it was recorded that about 2 (two) lakhs encroachers in the forest areas in the district. The then Deputy Commissioner of the Sonitpur District had also stated that there were EGS Centres were established within the areas of the reserved forests 'to cover the population under universalization of the elementary education through Sarbha Siksha ABhijan (SSA). In that, it was also submitted by the then Deputy Commissioner that 'issue of inclusion of the names of forest encroachers in the voter list and establishment of polling station within RF area will be settled only if Forest Depptt. Evict these encroachers from the forest area.'

Copy of the letter addressed to Principal Secretary is annexed herewith and marked as **ANNEXURE-12.**

**14/08/2018:** On 14/8/2018 '*the District Level Committee after threadbare discussion and examination of all issues and also keeping in view of the judgment of Hon'ble Gauhati High Court in WP (C) 5043/08 dated 21/10/09 and WP(C) 3840/08 dated 22/10/09 accepted the decision of the sub-divisional level committee and resolved to apprise the Government accordingly.*'

Copy of the Committee is annexed herewith and marked as **ANNEXURE-13.**

**3<sup>rd</sup> July and 23/11/2021:** On the dates , specified Minutes of the Review meeting held on October 5<sup>th</sup> 2021 of Forest Right Act, 2006, '**Out of total 44067.77 Ha.**

**Reserve Forests, the magnitude of encroachment is in higher in two Reserve Forests namely Charduar R.F and Balipara R.F. which occupies the extreme north portion of the District in between Jiabharali and Panchnoi River.'**

Sl.No.	Name of R.F.	Total area (in Ha)	Area under encroachment (in ha. Approx)	Percentage of encroachment	Approx. No. of household/hutments	Population No. Approx
1.	Charduar R.F	24,072.00	22,000	91.39%	22,500	1,05,000

'At present major portion of the Reserve Forests areas under Sonitpur West Division, Tezpur are under encroachment and these encroached areas are used by the encroachers for construction of their dwelling house, educational and religious institutions for agricultural crop.

Further, as per direction of the Govt. District administration has initiated all possible measures to give the voting rights to the above people residing insidede the forests areas. As far as enumeration of and giving voting rights to the encroachers of Charduar RF (Batashipur and Hugrajuli area) under Dhekiajuli constituency and Balipara R.F. of Sootea constituency is concerned, my predecessors had opposed the process of enumeration itself at the very beginning and it was requested to the Deputy Commissioner, Sonitpur vide this Office letter no. B/16/5/Encroachment/7954 dated 28/10/2004 to stop the process of enumeration of encroachers. The then Conservator of Forests, Northern Assam Circle, Tezpur also requested the Deputy Commissioner, Sonitpur to stop the enumeration of encroachers vide his letter number FGN/13/ Encroachment/SW/04/6158-62 dated 01/11/2004. But, the encroachers were enumerated and they also casted their votes in the Assembly Election, 2006. Further, this office also requested the Deputy Commissioner and all concerned authorities vide letter no.B/Election/4472-78 dated 1/08/2006 not to allow formation of Village Panchayat in encroached areas of reserved forests of Sonitpur West Division, Tezpur, but no fruitful result has come out.

Moreover, this division falls under Sonitpur Elephant Reserve. Total area of this division is approximately 2350 Sq.KM, out of which 440.67 sq. km areas are under notified forests and more than 73% of the notified forests are in the grip of encroachers. Rapid shrinkage of habitat as well as its fragmentation has isolated the population of various species of animals in different habitats. In case of such fragmentation have not only exposed the animals to the risk of being killed by the human being, but also have exposed the human population to large scale confrontation with the settlement coming on their way of movement. Further, Elephant are migratory in nature. Obstruction in Regular Dandi (Path) of wild elephants by construction of dwelling houses, Angandwadi centres, religious institution, setting up of Mobile Towers etc. disturbs the ageold migratory route of the elephant and resulted in the present scenario of man-animal conflict.'

Copies of the said meeting are annexed  
herewith and marked as  
**ANNEXURES - 14 and 15.**

**3. Illegal action on the part of the State Government to give occupancy rights : The Government of Assam, on 5th November, 2022 :** in its recent executive decision has decided to give occupancy rights to the encroachers over the lands that they have encroached, as per the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, to 1, 301 people, and as such, the Government of Assam has legitimized the illegal encroachers, and have give effect to such illegality by violating the provisions of the Forest (Conservation) Act, 1980, and its allied laws. A wrong / illegality cannot be sanctioned by an executive fiat of the whims and wishes, which it solely based on political gains.

Copy of the newspaper is annexed herewith  
and marked as Annexure - 16.

Prayer : It is therefore, humbly prayed that your kind authority to kindly accept my application, consider it take prompt and zealous action, and revoke the rights of occupancy to the encroachers, and evict the encroachers who have been encroaching inside the reserved forest without have any rights accrued in their favour.

*Dilip Nath*

*20/9/2023*

Dilip Nath,  
Vill : Panchnoi, P.O. Hugrajuli - 784507  
Dist. Sonitpur (Assam)  
Gmail Address : @dnath\_nath

*M- 7896868722*

*Gmail Address = dilipnath98644@gmail.com*

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**Fwd: complain of assam forest.pdf**

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**From :** Sh. RAJA CHATTERJEE Registrar <registrarngt-kolkata@gov.in>

Sat, Sep 30, 2023 10:06 AM

 1 attachment

**Subject :** Fwd: complain of assam forest.pdf

**To :** Judicial Section <ngtjudicial-kolkata@gov.in>

**Reply To :** Sh. RAJA CHATTERJEE Registrar <registrarngt-kolkata@gov.in>

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**From:** dilipnath98644@gmail.com

**To:** "Sh. RAJA CHATTERJEE Registrar" <registrarngt-kolkata@gov.in>

**Sent:** Saturday, September 30, 2023 9:43:01 AM

**Subject:** complain of assam forest.pdf

Respected sir, Please let me know any updates regarding my complaint

From

Dilip nath

Email- [dilipnath98644@gmail.com](mailto:dilipnath98644@gmail.com)

Sonitpur, TEZPUR, ASSAM

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—  
RAJA CHATTERJEE

REGISTRAR,

NATIONAL GREEN TRIBUNAL,

EASTERN ZONAL BENCH, KOLKATA.

PHONE No. 033-23240094

EMAIL: [registrarngt-kolkata@gov.in](mailto:registrarngt-kolkata@gov.in)

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