



Migratory Elephants in Nilagiri – Balasore

Harsha Bardhan Udgata

Asiatic Elephant (*Elephas maximus*) is confined to 3 states of Eastern India namely Odisha, Jharkhand and West Bengal. Local migration of elephants in search of food, water and mate is a biological process, commonly noticed throughout India, which may be either interstate or intrastate but normally takes place from one habitat to another, i.e. from one forest to another through a link called corridor. Elephant corridors are also equally important as their habitats. Elephants in Protected Areas (National Park and Wildlife Sanctuary) grossly feed on bamboo, tree fodder and grasses. They take tree barks and saline soil as well to meet their vitamin and mineral requirement. With the improved practices of agriculture, recently the food habit of elephants has been shifted towards paddy, sugarcane, banana stem (in winter season), mango and jackfruits (in summer season). As these agriculture crops are tastier and rich in calorie elephant do crop raid in small groups of 6-15 on the crop fields of forest fringe villages. Cultivators tolerate up to certain extent of crop damage but when the damage increases beyond tolerance limit man-elephant conflict takes place. Sometimes elephants enter into human habitation in search of country liquor, rice brew (*Handia*), mahua flower, rice, common salt and jaggery and break the mud houses. As a result, human life and cattle life are

scarified. Now-a-days this conflict has emerged all over the state baring 2-3 districts.

Elephants never recognize State political or administrative boundary. Elephants of Sundargarh District visit Jharkhand and similarly, elephants from Jharkhand and West Bengal migrate to bordering districts of Odisha like Sundargarh, Mayurbhanj and Balasore. This interstate migration of elephant has now been extended to longer distance upto Nilagiri of Balasore district, perhaps due to certain major disturbances in and around their original habitat, Dalama wildlife sanctuary of Jharkhand. Scientific studies are required to be conducted to identify the disturbances and to eliminate the problems so that other states should not pay the cost for a unhealthy change occurred in origin state.

Interstate migration of elephants from Dalma Wildlife Sanctuary of Jharkhand State to Nilgiri area of Balasore District in Odisha through West Bengal (Midnapur District) and Mayurbhanj District of Odisha is seen since last 4 years. Dalama Wildlife Sanctuary is situated at 10 Km. south of Jamshedpur in Jharkhand State and is a small wildlife sanctuary having 193 Sq.Km. area carrying around 158 elephant population (Once their number was 300 as per 2007 census), which is beyond the carrying capacity of that sanctuary.

The huge elephant population of Dalama might be visiting some other areas within their state prior to last 4-5 years, or might be visiting upto West Bengal border. But surprisingly since past 4 years continuously a herd of more than 100 elephants have been entering to Raibania area (Jaleswar Range) and Nilgiri areas of Balasore District during November-December to forage on pre-ripen /ripen paddy crops of the district. Balasore District is suitable for paddy cultivation as most of the areas are low laying, plane and netted with rivers and their tributaries. The agro-climatic condition of the district mostly supports paddy cultivation. *Swarna* variety of paddy having 150 days duration is mostly preferred by cultivators as it yields 25 Qntl. per Ac, which is comparatively higher than that of any other local variety. People do not opt for short duration paddy or some alternate crop as the water logging condition in crop fields persists upto November - December.

Like previous 3 years, during 2013 November a herd of 110 migratory elephants entered into Odisha near Morada of Mayurbhanj district on 27.10.2013. They moved toward Nilgiri area of Balasore district while foraging on pre-ripen paddy fields on the way during night. Day time they took rest in nearby island like forests near Asanbani, K.C.Pur, Nadpur of Mayurbhanj district. After spending 10 days in different forest patches of Mayurbhanj district finally they entered into Balasore District in the night of 6.11.2013 near village Durgadevi and Routraypur. At morning 5 AM of 7.11.2013 they entered into Ajodhya Reserved Forest near Gopalpur village of Nilgiri area for their shelter. In the night they crossed Ajodhya RF near village Jadibali, Budusahi and Hatimunda and entered into their long cherished destination of Tinikosia Reserved Forest, a Sal forest having dense under growth. Tinikosia forest was their heaven where they stayed from 7.11.2013 till they were finally driven

out on 3.12.2013. The path of migration described above was fixed for every time they have come to Nilagiri from West Bengal and they have also returned in the same path. Sometimes few lone tuskers have taken little diversion from the main line of movement of the herd and joined again with them later on.

Formation of Elephant Clan

110 Migratory Elephants reached Nilgiri in 6 batches. 1st batch consisting of 70 members crossed the state border on 27.10.2013, 2nd batch of 7 members and 3rd batch of 8 members joined with 1st batch on 30.10.2013 and then that group of 85 elephants (including 10 tuskers) crossing Jambhira river entered into forest patch near Asanabani, Saria and Tikabasa village of Betanoti Range in Mayurbhanj district on 31.10.2013 and started foraging on nearby crop fields. On 5.11.2013 they entered into Dalki RF near Nadpur village of Betanoti Range by crossing the National High Way-5 near Jugal the place in between Betnoti and Baisinga where the NH-5 crosses the railway line.

On 6.11.2013 night they crossed river Budhabalanga near Uttarpal and Nakhara village, then passed through the agriculture fields of Durgadevi, Routraypur (inter district border), and Pundal village. After crossing Sona river near Kathapal bridge they entered into Ajodhya RF near Gopalpur village of Nilgiri area at 5 AM of 7.11.2013 (Thursday). There is a belief that migratory elephants enter Balasore District every year on Thursday only and people respect them as Goddess Laxmi. In the evening the herd moved towards Tinikosia RF foraging in crop fields of Jadibali, Banabuin, Hatimunda and Tereldihi villages. 4th batch of 18 elephants crossed NH-5 on 7.11.2013 and joined with the main herd on 8.11.2013 forming a big clan of 104 elephants in

Tinikosia RF. 5th batch of 7 more elephants joined on 24.11.2013 and 6th batch of 3 tuskers joined on 27.11.2013. In the meanwhile, 3 female elephants died due to a sporadic hemorrhagic viral disease caused due to infection of 'Elephant Endotheliotropic Herpes Virus' (EEHV) on 8th, 11th and 21st November and one calf died on 3rd December due to drowning making the strength of the herd as 110. However two more calves were born on 18th and 20th November.

Foraging Pattern

Tinikosia Forest, a dense Sal Forest became the alternate home for all 110 migratory elephants from 7th November to 3rd December i.e. till they were finally driven out from Nilagiri. They used to start moving out of forest at 4 PM everyday and continued foraging on adjoining crop fields till morning 6 AM of next day when they returned to Tinikosia forest for shelter. They kept themselves hidden inside forest during day time.

Although all 110 elephants belonged to 6 families they moved under a unified command. All in one group used to move to crop field of a particular village in the evening for crop raid. Agriculture fields were full of paddy crop, not

matured for reaping. This year elephants arrived 15 days earlier than last year and taking advantage of the crop condition fed on pre-ripen paddy grains preferably over the fully ripen grains. Farmers could not save their crop as it was not fully ripen and secondly the fields were full of water due to heavy rainfall and flash flood that occurred in October, 2013 following the severe cyclonic storm 'Phailin' on 12th and 13th October, 2013.

After reaching Southern patch of Tinikosia RF near Bhalukasuni village the entire herd under a Unified Command moved for foraging in a single group to the surrounding villages/crop fields in rotational basis; change of direction of rotational grazing followed an interestingly typical pattern of anticlockwise direction. They were not only feeding the crop in the field, but also entering into human habitation and damaging houses, killing domestic animals and human beings. Howling of large crowd behind them make them disturbed as a result of which the elephants cause more damage in the villages. Staff of Forest Department have spent sleepless nights in controlling the mob, elephants and preventing the depredation. The loss due to migratory elephant depredation and compassionate payment made to the victims during last 4 years are given below :

Year	No. of migratory elephants came to Nilagiri	Date of Entry to Nilagiri	Date of Exit from Nilagiri	Duration of stay (Days)
2010-11	65	17.11.2010	26.11.2010	10
2011-12	70	22.11.2011	07.12.2011	16
2012-13	90	10.11.2012	02.12.2012	22
2013-14	110	07.11.2013	04.12.2013	27

Year	Human Casualty (No.)	Human Injury (No.)	Crop Damage (Acre)	House damage (Partly) (No.)	House damage (Fully) (No.)	Cattle Killed (No.)	Total Compassionate amount paid (Rs. In Lakh)
2010-11	0	0	374.54	139	27	3	07.56
2011-12	0	0	259.41	109	21	1	17.39
2012-13	3	0	570.37	93	66	0	71.75
2013-14	1	1	448.54	89	9	0	49.57

Observation on Migratory Elephant

1. More than 100 elephants of Dalma sanctuary are coming to Nilgiri areas every year during November, crossing West Bengal border (Midnapur District) and Mayurbhanj District of Odisha. After crossing West Bengal border the elephants in small groups enter into Suliapada of Deuli range, Morada of Rasgovindpur Range of Mayurbhanj Division and few groups enter into Raibania area in Jaleswar Range of Balasore District. After 7-10 days of stay in Raibania area they proceed towards Nilgiri area of Balasore District along with that of Suliapada and Morada. During April 2014, a herd of 23 migratory elephants for the first time in history entered Nilgiri through Suliapada and Asanabani.

2. They start from Dalama sanctuary of Jharkhand in October, reach Nilgiri in November, stay for nearly one month in Nilgiri area, then return to West Bengal by January of next year. They stay in West Bengal during Summer. A small group visit Nilgiri again during April and return to West Bengal.

3. The main objective of their migration is in search of food; particularly paddy crop of Kharif and Rabi.

4. They prefer pre-ripen paddy to fully ripen paddy. But they also feed on harvested paddy those are kept on threshing floors in the villages.

5. The tuskers are fond of *Handia*, the rice brew for which they never hesitate to break houses. Storage of rice and common salt inside house is also the reason for breaking house.

6. Casualty of human beings or domestic cattle is accidental, and never intentional.

7. Elephants in group behave very docile except few tuskers.

8. Though they belong to 5-6 groups (families), they move in one group (clan) on coalition and follow a unified command. The clan leader decides the direction of crop forage/raid and time of movement.

9. While the herd is raiding in a particular crop field, 2-3 tuskers come out of that clan, search new places of paddy crop as reconnaissance survey. Being confirmed from them the large group move to new village in the next day.

10. Before the large group, in the afternoon, comes out of forest for crop raid, 2-4 tuskers

come out first to crop field, look around and give green signal to the herd, which come out of forest thereafter. Another 2-4 tuskers remain at the end of the herd that comes out late. It appears tuskers give protection to the herd.

11. Elephants when move on/cross a road, they require only 20'-30' width passage. Even they never care for the crowd present at 100' away from them. They never feel disturbed in the presence of crowd although people shot at them while watching, but get scared when chased.

12. They use the same passage of even 20'-30' narrow width every time while migrating. Hence their migration path can be mapped under GIS domain.

13. Their main focus is paddy crop in field. But they need a shelter/cover during day time to hide their body. They prefer specific forest patches on their migratory path which are found to be comparatively dense. Such forest patches are Tinikosia reserved forest near Bhalukasuni, Ajodhya reserved forest near Anandapur/Gopalpur in Balasore District, Phuljhari forest of Dalki RF, Nadapur forest, Asanbani forest, Morada and Suliapada of Mayurbhanj District. They spend maximum time in these forests and do crop raid in the adjoining areas.

14. Forest patch and paddy fields are 2 major requirements for them. They never prefer to stay in areas having only crop fields rather they like to pass through all those paddy fields in a single night. During April 2014 they travelled more than 50 Km. in a single night to reach Nilgiri area from Asanabani forest.

15. If the paddy field is found to be full with water, the elephants prefer the field bunds to move while crossing crop fields.

16. They follow a typical pattern in visiting villages from camping site i.e. in anti-clock wise direction.

17. They feed on grain part of the paddy plant, leaving the straw as it is.

18. They respond to fire and light producing fire crackers if used in driving.

19. High sounding crackers, drum beat, siren have little impact on them.

20. They use village ponds to take bath in the evening at 7 PM after emerging out of forest. Even in winter season they take bath in night.

21. They look different from Odisha elephants, as they have developed white pigments on their ears and breast. They look muddy rather than black.

22. Their reproductive behaviour continues within their clan throughout the period of migration. Mating takes place, calves born and some females are seen pregnant.

23. They never visit Kuldiha Wildlife Sanctuary during Winter migration although they touch the sanctuary boundary many times. The reason may be assigned as follows.

- a) Their main target is paddy crop in the field.
- b) Their objective of migration is never in search of forest, tree fodder or any mate for reproduction with elephant population living in Kuldiha.
- c) They prefer a forest cover from where paddy fields are easily approachable.

24. During summer visit, they go inside Kuldiha Sanctuary and stay there for 15 days

because their prime target is water body. There are many water bodies inside Kuldiha Sanctuary, of course dense forest is there to provide cover to them. Moreover the ripen summer paddy is available in close proximity of the sanctuary in Tenda and Balichua village which are frequently raided by these visitors.

25. Casualty of elephants was noticed during 2013 only, which was mainly due to their health problem or disease they suffered. During 2013 the casualty of 3 female elephants was due to anemia resulted from Post delivery problem and a sporadic hemorrhagic viral disease caused due to infection of 'Elephant Endotheliotropic Herpes Virus' (EEHV). Death due to poisoning was overruled as farmers never sprayed any pesticide after flowering in paddy. Further the forensic test result of Viscera analysis made by State Forensic Science Laboratory, Odisha confirmed the reason of deaths was not due to poisoning.

26. As long as paddy crop is available in adjoining villages the elephants will continue to stay in the area and will never leave the place in spite of several attempts made to drive them out.

27. Driving of elephant will never be successful unless the herd desires to move back on their own. Every attempt of drive will be futile if they want to stay back in the paddy field.

28. Unless the entire herd is driven away, there is every possibility that they will come back.

29. If new born calves are there in the herd a group of females will always protect the young calves, compromising with their food and the herd will be foraging close to them. Driving is not successful during this period.

30. Elephants take rest from 7 AM to 3 PM in the day time and start moving from 3 PM. So they will respond if driving starts after 3 PM only.

31. Migration to Nilagiri will continue in future years to come, that cannot be checked.

32. More damage will be caused if they are tried to be driven out or prevented to do so.

33. Protection to the habitation and human life is to be adopted.

Strategy to be adopted to minimize the loss

- Migratory elephants be kept away from their preferred habitat in Tinikosia RF.
- The people of vulnerable villages be shifted to safer locations.
- Adequate protection be provided to the villages, houses, cattle and human life.
- The elephants be protected from human disturbance and killing.
- Above all the habitat condition of Dalama sanctuary be improved by Jharkhand govt. so that elephants may feel comfortable to stay there for longer period and will not move out frequently to other states. If required a study be conducted to ascertain the cause of long range migration and mitigation measures.

Harsha Bardhan Udgata, Divisional Forest Officer,
Balasore.