

AN APPROACH TO SAVE ENDANGERED PORCUPINE AND ENVIRONMENT-

A Micro Level Study in Deulpur Village, Howrah, WestBengal.

Subhankar Ghosh¹, Soham Naskar², Subhranil Maji², Sourav Das²

¹Guide Teacher in 25th NCSC-2017, ² National Level Participants in 25th NCSC-2017, Deulpur High School, Haora, W.B.

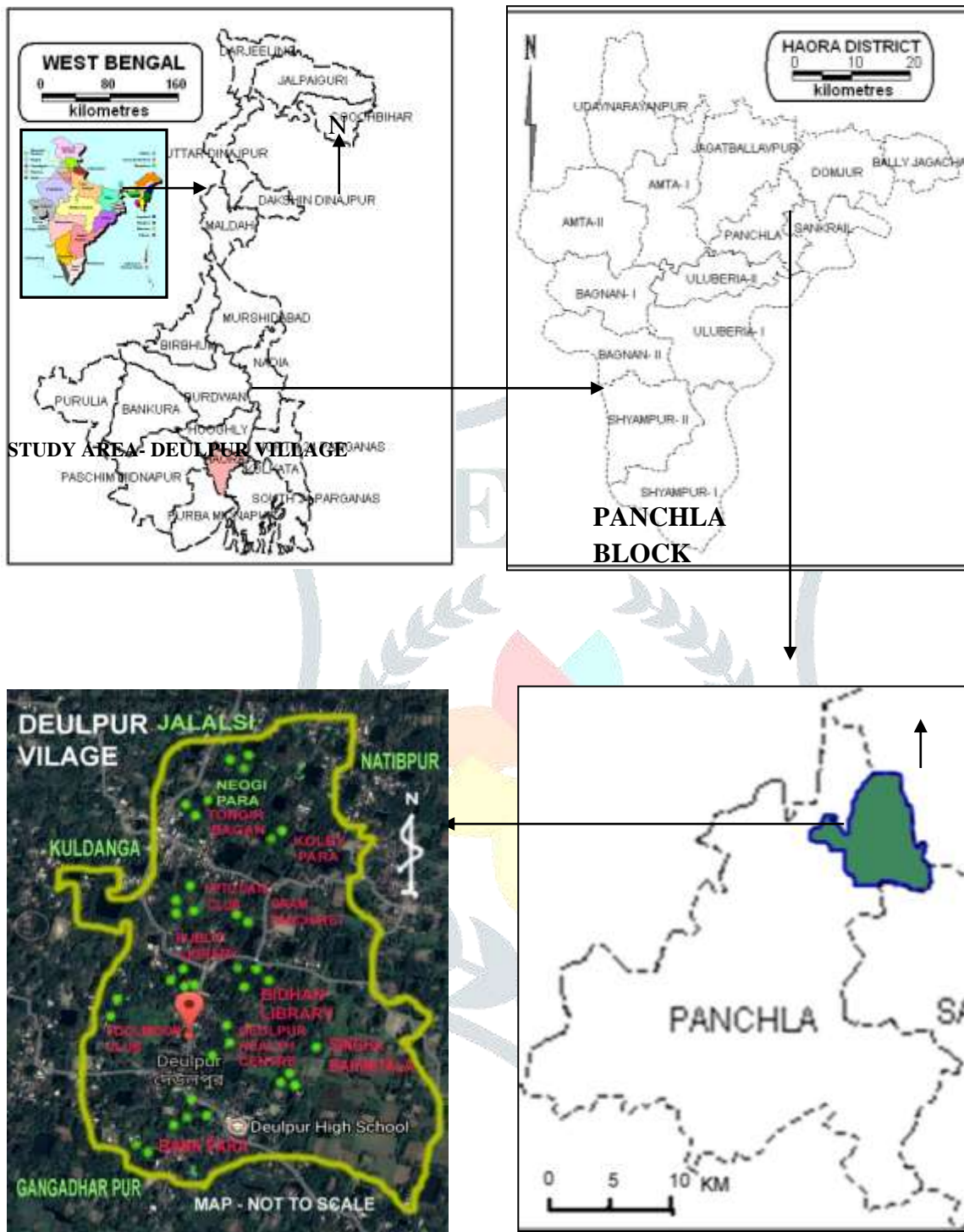
Abstract: *The environment is a complex of ecosystem made up of a variety of species, themselves represented by a number of strains, each with its own genetic identity. This diversity is a condition for the long-term sustainability of the environment and the maintenance of its integrity is, therefore, recognized as being indispensable to sustain human life. There are three level of bio-diversity i, e, Genetic diversity, Species diversity and Ecosystem diversity. The world wide distribution of this diversity is continuously decreased due to various man made causes. Today, the extinction of several species or loss of biodiversity is a much debated issue among the environmentalist at the international level. Species are disappearing rapidly and although we know very well that all the species are the integral part of ecosystem and extinction of some species diminishes the well-being of the remaining species, including human being. By taking the above words into consideration, Deulpur village of Howrah district has been chosen as the study area as in this village some rare animal species has been found. One of them is porcupine which is considered as near threatened rodent species according to Red Data Book published by IUCN. There are few no of porcupines in the village. Due to various illegal man made causes, this speciesvhas gone into critical condition at local level and may become as extinct species in near future. Therefore, through this paper a step has been initiated to save the porcupines of Deulpur village and get them ride from “critically endangered” labelin Deulpur village.*

Key Words: *HabitatRestoration, LossofExtinction, Porcupines, Threatened animal.*

Introduction: Now a day sustainable development is most common word by which we can maintain balance between the production and consumption of resource and can make a prosperous earth for next generation. Environmental balance is a part of this sustainable development and this environment balance can be possible through mainly natural resource management. Bio-diversity is a part of this management. But this bio-diversity is very much threatened at present. We know that children are secured in the lap of his/ her mother and wild animals are in wild environment. But at present, wild animal are not safe in their wild habitat. Many animals have lost their existence and many are on the same way named as threatened, critically endangered etc. because of our narrow greedy mentality. We can get many examples if we look at Red Data book published by IUCN. Like many animals, porcupine is one of them near threatened animal. David Attenborough, the renowned naturalist once said that one minute passes one rhino vanishes from the earth. If we not take the proper management, in near future, it may be very possible to hear that one minute passes one porcupine vanishes from the earth. Therefore, to maintain ecological balance, sustainable and proper management of natural resource, in this paper, an approach to save endangered porcupine and environment has been taken into consideration.

Study Area: The present paper focuses on the conservation of porcupine. For this purpose, Deulpur village is selected as the study area. Deulpur is one of the small village of Panchla block of Haora district of West Bengal. It is located in the north east part of Haora district with a ddistance of 4 km away from NH-6. This village is full of bio diversity. Many rare flora and fauna species has been frequently found in this village. Fishing Cat, Pangolin, varieties of Snake, lizards are some rare animal in this village. Like all these, porcupines, the one more near threatened animal has also been found in this village. According to local survey report, there are 37 holes in which porcupines are lived has been identified. Scratching lines of quills, semi-circular mound of mud infront of the hole and presence of scat of porcupines etc ensures us to identify the holes as the habitat of porcupine. These porcupines are rapidly decreased in number. Due to the greedy mentality of some villagers, few of the porcupines are rest in the village. This situation is very much hard to maintain ecological balance of the village. As the porcupine belongs at the first consumer level of ecosystem, its extinction will creat great adverse effect in the maintenance of food chain of ecosystem. From the past experience, the old persons of village has told that there were many porcupines in the village, but this number has now gone into few. At this horrible situation, it is very important to save this endangered species. Therefore, it is logically true to select the Deulpur village as the study area for conserving the porcupines and ecological balance.

LOCATION MAP



Source: Atlas Book and Google Earth

Objectives: the overall aim of the study is to conserve the porcupines from its extinction and maintain the environmental balance in Deulpur village. But there are some specific objectives which help us to reach at the final aim of the study. These are –

1. To find out the habitat area of porcupines in Deulpur village.
2. To find out the causes behind the continuous decreasing of porcupines in the study area.
3. To examine the perception of villagers for what they think about porcupines.
4. To find out the administrative initiatives for conserving porcupines.
5. To convey the importance of porcupines for maintaining the ecological balance to the villagers.
6. And finally to find out the way for conserving the porcupines in the study area.

Research Questions : After reviewing the past related literature, the following research questions have been developed in unique sense. These are -

1. Does the number of porcupines in Deulpur village in a satisfactory level?
2. In what ways, does the villagers are responsible for the decreasing of porcupines?
3. What do the villagers think about porcupine?
4. What the initiatives are taken by administration to protect the porcupines from their extinction?
5. What are role of porcupines in maintainance of ecological balance?
6. What will be the possible ways to make free porcupine from its danger?

Methodology: Taking into account of the merits of the multiple methods, in the present study various research designs have been adopted. Both experimental and survey method have been opted for this study. Experiments has been done in two stages. In the initial stage, horizontal and vertical length of the porcupine's holes have been measured to know the size and shape of porcupines. The second experiment is done on the scat of porcupines to understand its nature and characteristics and also to know the food habit of porcupines. The present study is not mere description of the events but to go deep into the situation very intimately. Therefore, a combination of both descriptive and survey method has also been adopted. The present study is based on both primary and secondary sources of data. Secondary data and information has been collected from various sources and departments such as Atlas Book, Gram Panchayet office, Alipur Zoological Garden, Block Biodiversity Register Office etc. Primary data has been collected in two stages. Perception of local people related to porcupines has been surveyed and for this Questionnaire has also been prepared and used. In the later stage, survey has been done at the habitat areas of porcupines to collect the data related to the location, food habits, roles of porcupine. The collected data has been sorted and arranged through cleaning and coding and then organized for easy analysis. Qualitative and quantitative methods of data analysis have been used with descriptive as well as inferential statistics and various cartographic methods has also been used to explain the result of the study.

Analysis of Data: From the arranged data, it has been found that in Deulpur village, porcupine is one of the rarest and critically endangered animals. Porcupine likes to live in the dense grassland area, besides the pond. There are thirty seven holes of porcupine has been found in the village. The average horizontal and vertical length of the holes are 41cm and 37cm respectively. The shape of these holes are mainly circular and semi circular in pattern. After the experiment of scat of porcupine it has been discovered that these animals are herbivores and belongs at first consumer level of ecosystem. From the survey, it has been found that the numbers of porcupine in this village has been continuously decreased. For example, in the year 2012, these numbers were 52 but in 2017, it goes down into 32. There are few causes behind this declination. According to 52 percent respondents, local people kill porcupine to take its meat as tasty food. 34.5 percent respondents told that gradual increase of buildings and roads in the habitat areas of porcupines is another cause for the decreasing of porcupines. Though 56 percent respondents have told that death of porcupines have negative impact on environment but 78 percent of respondents are least bothered about the death. 60 percent respondents well know that the killing of porcupine is very illegal but they and as well as local administration play the role of silent visitors against the porcupine's killers. According to 95 percent respondents, no action has been taken by administration to save the porcupine from its loss of existence.

No. of Porcupines in Deulpur village

YEAR	NO. OF PORCUPINES
2012	52
2013	35
2014	37
2015	27
2017	32

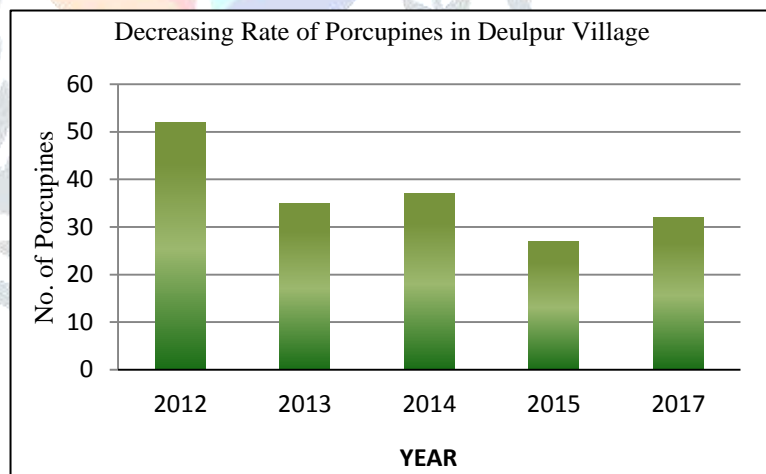


Table No: 01,

Source: Panchla Block Bio-Diversity Register Office, 2017

Fig: 1

Causes behind the decreases of Porcupines

Causes of Decrease	Percentage of Respondents
Destruction of habitat	34.5
Kill the porcupine to take them as tasty food	52
For economic use of quills	5
Others	8.5

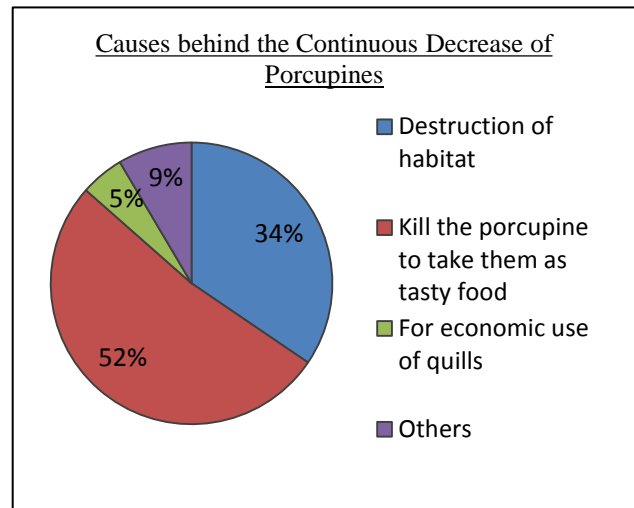


Table No: 02, Source: Primary Data, 2017

Fig: 02, Source: Primary Survey, 2017.

Main Findings: From the above analysis, it has been found that, the no. of porcupines in Deulpur village is continuously decreased. The unconscious and greedy mind people frequently kill the porcupine. Local administration and villagers are totally silence in this sensitive issue. For all of these, porcupines become loss their existence in the Deulpur village. Only the consciousness of villagers can make free the porcupine from their loss of existence.

Relevance of Porcupine: Porcupine is one of the endangered animals in Deulpur village where this species are few in number. Any animal have the importance in its own ecosystem. Porcupines are not the exception. They mix the top soil and sub soil. By this process, soil fertility is increased. The quills of porcupines have another economic value by which many local people earn money by making various home decorating products. Porcupines have also great importance in the maintenance of ecological balance in Deulpur village. If porcupines lose its total existence in the village, ecological balance is seriously damaged and can not be recovered. There is another importance of porcupine. As this animal is endangered and mainly can find in zoo, the Deulpur village can be grown as tourist spot in future and many people may come to this village to see this endangered animal and thus the village became populareco tourist spot in west Bengal map.

Problems and Taken Actions: From the study, it has been found that porcupines in Deulpur village are in the mouth of destruction. Some people kill them to take their meats as tasty food. Though some of those people know very well that this animal is few in number in Deulpur village bur they are little bothered on that matter. Panchla block bio diversity register board is concern on the decreasing of porcupines but the board takes the matter theoretically, not practically. In this matter, local Panchayet and police station also mostly play the role of silent visitors. In this adverse situation, some necessary actions have already been taken by us. Such as–

1. More than one school level seminars have been conducted by the experts and teachers to increase the concious level of villagers towards the protection of porcupines.
2. To achieve the knowledge related to the conservation of porcupines, Alipur Zoological Garden, Kolkata have been visited again.
3. In the habitat area of porcupines, habitat restoration method has been applied to conserve porcupine in its own area.
4. To draw the attention of local people, in many places of village, wall pictures related to endangered porcupine have been drawn.
5. 1500 copies of leaflets related to importance of porcupine have been distributed throughout the village.

Future Planning: Besides of the abovetaken steps, the following action should be taken in near future to protect the porcupine and its ecosystem from the destruction.

1. Present habitat area of porcupine shall be conserved by the villagers.
2. Idle habitat area shall be formed by using the habitat restoration method by local club and Gram Panchayet.
3. Importance of porcupine in maintenance of ecological balance should be discussed in Gram Sava and parent teacher meeting in school so that villagers can be more concern about porcupine.
4. Strict legal action against the killers of porcupines will must be taken by the administration.
5. Ex situ conservation will must be applied by the zoological garden authority for the porcupinerescued by local villagers.
6. Proper infrastructure shall be formed and grant shall beprovided in the village to save the porcupines.
7. Finally, conscios attitude of villagers will be developed must to make free the porcupine from its 'endangered' label.

Relevance of the Study: This paper has great implication as well as significance in present day because here loss of existence of endangered animal is main issue. This paper has great importance to the future researcher. This paper can be considered as an important literature review related to same other study. Researcher can compare the results of study with previous same research work and can discover new horizon for research. Through this paper one can understand the importance of endangered animal like porcupines on environment. This paper also helps those curious people who want to save the animal in its own environment. One can apply the potential solutions of this paper on other endangered animal to make them free from danger. The finally, this paper will be helpful to make the base of the researcher before conducting the new study.

Conclusion: Therefore, this paper not only important to the future researcher, but also have great importance in regards of environmental perspective. We should not busy with ourselves but become more concern about our surrounding environment and its components. We consume all the benefit of environments and our existence is very much depend on its. So, we must protect our environment by decreasing

the rate of environmental degradation and must save the various flora and fauna of our surroundings. We must remember that we, the human being, the plant and animal kingdom are closely interrelated and can't live with separation from each other.

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