

## A study on present status of *Bos frontalis* (Mithun) found in Arunachal Pradesh, India

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### ABSTRACT

Mithun is a semi domesticated animal species of cattle which has a high value among the tribal communities of Arunachal Pradesh. This wonderful species is facing threats of extinction due to overexploitation for various purposes. This paper focuses on their cultural, economical and ecological significances and the conservational efforts to protect this species. A questionnaire has been prepared and personal interviews were taken of local people who possess Mithuns. The study finds the various significances of Mithun and conservation efforts by the government and the local communities to protect the species.

**Keywords:** Mithun, indigenous, tribal communities, ethnic tribes, ecological significance

### INTRODUCTION

Mithun (*Bos frontalis*) is a unique species of cattle that is majorly found in the regions of North Eastern states and Himalayas. It has a deep impact in the social, cultural and indigenous believes of the tribal and indigenous communities residing in those areas. This species has several uses, it is majorly used for the meat, as it has a much higher value in the local markets as compared to any other sources of meat available. This species also plays a crucial role in mountain agriculture, providing food security to the local people. In India, Mithun is mostly found in Arunachal Pradesh (state animal), Manipur, Nagaland and Mizoram. The population of Mithun is approx. 2,98,264 out of which 2,49,000 are found solely in Arunachal Pradesh (livestock census of india,2012). In Arunachal Pradesh, the highest population of Mithun is present at lower subansari district with 31,262 & lowest in upper

dibang valley with 1735 [Apum et.al, 2020]. The tribal communities of Arunachal pradesh have their own religious and cultural beliefs regarding Mithuns. Possessing Mithuns is considered to be a sign of prosperity for them. But however, in recent years, Mithuns are facing a threat to extinction due to mass harvesting for its meat. Mithuns are harvested in huge numbers during marriages which is one of the leading causes of decline in their population. It is also harvested for the horns which is a traditional decorative item in tribal households. All these practices, eventually leads to decrease in population of Mithun. But even so, there are no such adequate number of policies that can play a part in the conservation, probably due to its small population and presence limited to certain parts of India. The exploitation and destruction of their habitat (generally the forests) is one of the major factors in reducing and hampering their population.

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## METHODS AND METHODOLOGY

**STUDY AREA:** The study area comprises of one of the districts of Arunachal Pradesh i.e. East Kameng, which is inhabited mostly by Nyishi tribe. The major study site was Seppa (district headquarter) and its nearby villages. East coming has a total geographical area of approx. 4,134 km<sup>2</sup> and located in between 27.15°N to 28.25°N latitude & 92.15°E to 93.05°E longitude. Kameng river is the major river that flows in the particular study site. The total population of the whole area was 78,413 as per census of India 2011. This area was particularly chosen due to the adequate vegetation and suitable weather condition for to the survival of the species.

## DATA COLLECTION

The data has been collected from both the primary and secondary sources:

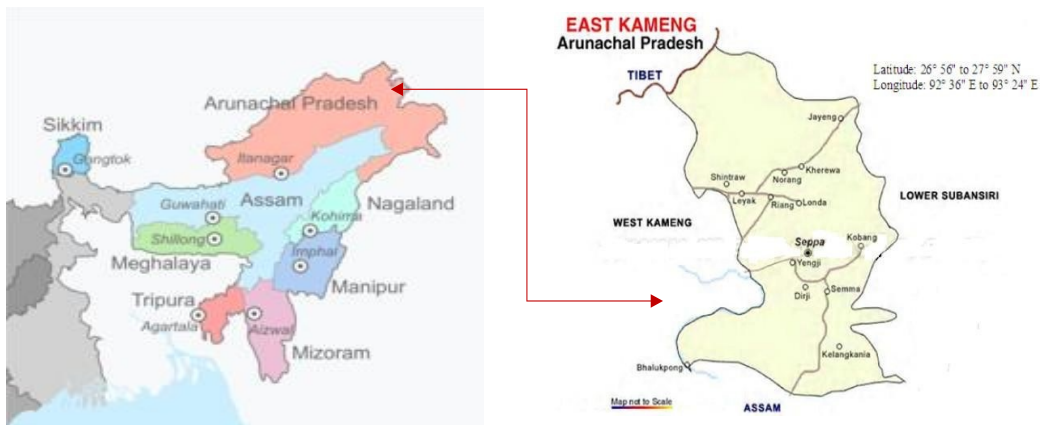
- Primary Source.** The data was mostly Collected Primarily by carrying out a detailed survey by filling up the questionnaire & interviews. About 40 household of 3 villages who either possess Mithun or take care of them during the period of survey (Jan 7-17) were interviewed to derive the information such as (total

population, life expectancy, local name, cultural & economical values, breeding seasons etc) of Mithun. Cameras and Phone were used to collect and store the information of the survey.

- Secondary source:** Some of the information was also collected from library, books, journal, research paper, newspapers and other various means. This includes the ecological and economical value of the species

## SURVEY

The various photographs and information of the particular species has been collected through visiting various places of the study site. The photograph has been collected from the forests and hills of the study site. The photographs show about the nature and preferred vegetation of the species. This particular species prefer to live in solitude and is a herbivorous in nature. They are generally found near the water sources, which majorly is the river and the waterfalls. Detail survey has been done in order to fill up the questions about the species. About 40 families of three villages (both adult males and females) were interviewed to collect the information regarding



Source: mapsofindia.com)

**Fig.1:** Map showing study site

the habitats and behavior of Mithun. Cameras and phones have been used to collect and store the visual information of the survey.

### MITHUN

Mithun, also known as the Gayal, is a large domestic animal distributed in Northeast India, Bangladesh, Myanmar and China. Mithuns are larger, well-built animals typically larger than domestic cattle. They are reddish brown to blackish brown in color due to the presence of hair all over the body except their legs which is mostly covered with white hairs or stockings. It has a long tail. Adult males are larger, bigger in size and have more muscles as compared to female. Adult male can weigh up to 400 to 600 kg, while female weigh up to 300 to 400 kg. They have broad and flat head. Both the sexes possess long, thick,

pointed and curve horn on the head region which is about 0.5 to 1m in length. Male horn is generally larger than the females. They have strong and well-developed legs which helps them to walk on hilly and mountainous region and their hooves provide grip and stability to walk on the sloppy areas on the mountains. Their natural habitat is the North East India and the Himalayan regions of Indian subcontinent. The North Eastern and Himalayan regions provide optimal habitat for Mithuns. These areas are covered with dense forests, mountainous and hilly regions which is suitable for their survival. Mithuns live in humid subtropical and temperate climates. Forest vegetation is the primary source of food for the Mithun. The availability of food source like bamboo, shrubs etc is crucial to provide them with food security.



Fig. 2: Surveys performed in various area



Fig 3: Mithun (*Bos frontalis*)

## **CULTURAL SIGNIFICANCE OF MITHUN**

Mithuns (*Bos frontalis*) has a deep cultural significance in the ethnic tribes of Arunachal Pradesh. Mithun is not only a domesticated animal but also a symbol of wealth, power, status and cultural beliefs. It has a deep impact on various aspects of tribal life like rituals, social status etc. Having a Mithun in a local household of a tribal community shows their social standing within the community. Higher the numbers of Mithuns, the higher the economical status within the community. There is also a saying that a marriage is not considered as completed, until and unless the bride's family possess the animal which is offered by the groom's family. In marriages, Mithun are used as transaction for dowry which is generally given to the bride's family from the groom's family. The meat of Mithun also plays a crucial role in marriage ceremony. Mithun plays a central role in various cultural and religious rituals. It is also referred as the descendent of the sun and sacrificed in various festivals as an offering to the Gods or deities. It is believed that these sacrifices bring prosperity and protection to one's household or community. It has been informed by local people of the area that to domesticate Mithun, they used to feed salt to the young babies of the Mithun at an early stage of their life. This particular cultural ritual has been passed on from generation to generation within the tribe community.

## **ECONOMICAL SIGNIFICANCE OF MITHUN**

Mithun has various economical significance which helps in the survival of ethnic Tribes of Arunachal Pradesh. This domesticated species contributes a lot to their economy in various ways. Although, Mithun is not considered as a farm animal, but even though it has a significant use in field work of some areas. The manure obtained from Mithun is a vital resource for traditional farming practices in the hilly areas. It is used as organic and natural fertilizers, which enhances soil fertility and provides better crop production. Mithun are a valuable asset in the livestock market. They are bought and sold for

significant amount of money (75,000 to 1,25,000) depending upon health, sex, weight and other qualities which provides a crucial source of income for the tribal household. Compared to other cattle's, the quality of meat from the Mithun are considered to be superior as it contains more nutrition and protein than an average cattle.

Mithun are also considered as a huge asset or capital. It is often used in barter trades and in solving social and legal disputes within the communities. Mithuns are also used as collateral or as a mode of security while taking loans from local community lending groups which helps in urgent financial issues.

## **ECOLOGICAL SIGNIFICANCE OF MITHUN**

Mithun (*Bos frontalis*) holds some ecological significances in Arunachal Pradesh. Since it is a semi domesticated animal, it is closely related with the natural habitat.

But even though they are not much information about there ecological significance. This species is generally located closer to a fresh water source and the presence of this species shows the richness of the diversity of the particular place. They generally live in dense forest region, rarely coming or towards crowded human civilization. Their presence in a particular area has a great influence on the population of other herbivores and predators which contributes towards the ecological balance. Due to their semi domesticated in nature, this animal plays a crucial role in conserving their natural habitat.

## **CONSERVATIONAL EFFORTS:**

In recent times, Mithun has been categorized as vulnerable species according to IUCN red list data (<https://www.iucnredlist.org/>). Conservational efforts are important due to their cultural and economical significances. Habitat conservation is one of the most basic setup required for Mithun conservation. Protecting the forest areas in which Mithun generally grazes is required to ensure their food security. Additionally, harvesting of Mithun for meat and other purposes is now under legal guidance in

various areas which prevents mass harvesting of this species. Government of Arunachal Pradesh also provides subsidies and facilities for regular veterinary checkup and vaccination to prevent any kind of diseases. Veterinary services are also established in various remote areas to provide essential medical checkup and care to Mithun.

The communities also needs to play role in Mithun conservation by apply indigenous knowledge and practices in Mithun management. Also creating awareness and educating other local people/communities about sustainable harvesting and usage is very important in conservation of Mithun.

## DISCUSSION

Mithun is an uncommon bovine species of cattle found in the regions of North Eastern states and Himalayas. They have a huge impact on the social, cultural and economical lives of the indigenous and tribal people of the area. But due to overexploitation of such wonderful creature for its meat, horns, leather etc, it is now facing a threat of extinction. The local people should come forward to protect and conserve these beautiful species from extinction.

We should aware local people to look after the Mithun to improve the healthcare and conservation of the species. Organizing various awareness campaign will play an important role in their conservation. They are considered as the umbrella species as they are naturally selected for conservation related decisions of the habitat. Protecting and conserving this species indirectly benefits various others species, thus contributing in the formation and development of an ecological community.

## CONCLUSION

Mithun is an important semi domesticated animals species of hilly and mountaineous regions of India, specially Arunachal Pradesh. It plays a crucial role in cultural, economical and ecological significance of ethnic tribes of Arunachal Pradesh. It is a herbivore animal which grazes on various areas and is mostly found near fresh water sources but due to shrinkage of forests caused by various man made activities, the Mithun population began

to decline and is now limited to certain areas. There are many ways which can enhance Mithun's productivity and tribal's livelihood. The Government of Arunachal Pradesh is also keen on adding new schemes and subsidies which can contribute towards Mithun's health and lifestyle. But even though, there is lack of such schemes and poor implementation of available schemes, leading this wonderful species towards extinction. Unless and until, the government and the local people start emphasizing more on conservation efforts, the population will reduce to such an extent that this uncommon and beautiful species will go extinct.

## REFERENCES

- Dorji, T et.al., (2021). Mithun (*Bos frontalis*); the neglected cattle species and their significances to ethnic communities in the Eastern Himalaya-A review. *Anim Biosci*, 34(11), pp\_1727-1738.
- Apum, N et.al., (2020). Population status and conservation efforts of *Bos frontalis* (Mithun) in Adi tribe inhabited areas of Arunachal Pradesh, India. *Int. peer-reviewed journal*, 66 (1).
- Gupta, N et.al., (1996). Mithun-an important bovine species of Indian origin. *Animal Genetic Resources*, 18, pp\_41-48.
- Apum, N., Nimasow, G., (2015). Socio-economic importance of Mithun (*Bos frontalis*) among the Adi tribe of Arunachal Pradesh, India. *Science and Culture*, 81(7-8), pp\_200-205
- Gupta, N et.al., (2009). Animal Genetic Resources. *Animal Genetic Resources information Bulletin*. FAO and UNEP; 1996
- Shisode, M.G et.al (2009). Mithun: The Pride animal of North Eastern Hilly region of India. *Veterinary world*, 23(3), pp\_821-829.
- Moyong, O., (2012). Commoditisation and sustainable management of Mithun in Arunachal Pradesh, North East India. *IOSR Journal of Agriculture and Veterinary Science*, 1(3), pp\_39-43.
- Mondal, M et.al., (2014). Mithun: an animal of Indian pride. *Livest Res Rural Dev*, 26, Article#6.
- Nath, N.C., Verma, N.D., (2000). Biochemical evolution of Mithun milk for human consumption. *Indian vet Journal*; 77, pp\_418-23