

## Today's Important Topic for UPSC CSE Aspirants (Mithun)

### Comprehensive Explanation for Questions:

#### Inside Story of the News ( Mithun ) :

- In a move that promises to revolutionize the culinary scene while preserving indigenous traditions of the Northeast, **the Food Safety and Standards Authority of India (FSSAI) has officially recognized Mithun as a distinct food animal.**
- This recognition not only opens doors to a unique gastronomic experience but also paves the way for economic opportunities in the region.

**Kahani Ander Ki :** After the above-mentioned incidents, it becomes necessary for us to get detailed information about Mithun . Since this matter is also related to the Food Safety and Standards Authority of India , then it becomes necessary for us to know about this Food Safety and Standards Authority of India also.

#### About Mithun:

- **Mithun, *Bos frontalis*, is an uncommon and unique bovine species, endemic to parts of the North-Eastern Himalaya.**
- **The Mithun or Gayal (*Bos frontalis*) is considered a descendant of the Indian Gaur or bison.**
- **It is the state animal of Arunachal Pradesh and Nagaland.**
- **Mithun plays an important role in the socio-economic and cultural life of the local tribal population such as the Adi, Adi Gallong, Adi Miyong, Adi Padam, Aka, Apatani, Bangni, Galong, Idu/Chulikata Mishmi, Miji, Mishing/Miri, Nissi , Tagin or Ghasi Miri, Nyishi, Galo, Mishmi, Sherdukpen and other communities of the Arunachal Pradesh State .**
- **Nyishi, believes that they are the descendants of Abo Tani.** That is why Nyishi, Adi, Gallo, Tagin, Apatani, of state and Mishings of Assam called themselves as Tani Group of Tribes.
- Presently, this animal is mainly reared for meat, which is considered to be more tender and superior over the meat of any other species.
- **Mithun (*Bos frontalis*) meat differs from bovine or beef meat in several aspects, including taste, texture, nutritional composition, and cultural significance.**
- **Mithun milk, though produced less in quantity, is of high quality and can be used for preparation of various milk products. Leather obtained from this species has been found to be superior to cattle.**
- It has a lot of business potential and the potential to provide nutritional, livelihood , financial security, & cultural value also.
- **Mithun was domesticated more than 8,000 years ago from a wild gaur, *Bos gaurus* along the Assam-Burma border .**
- **Rajkhwa et al considered gaur, known as Indian Bison, as the wild ancestor of Mithun due to their similarities in phenotype, habitat, habits, and behavior.**
- A few researchers postulated Mithun as the cross between gaur and domestic cattle with banteng blood, or Zebu's in ancient times .

- Founded on the chromosomal assessment, Winter et al asserted gaur as the most probable wild ancestor of Mithun because both possessed 58 diploids (2n) chromosomes, in contrast to 60 diploids (2n) chromosomes in other cattle.
- Studies on molecular phylogeny and genetic diversity suggest Mithun as the direct domestication form of gaur , a result of moderate gene introgression from zebu and yellow cattle and a cross between gaur and cattle .
- **Mithun populations in India are categorized into four strains, namely Arunachal, Manipur, Mizoram, and Nagaland, according to the distinct physical and genetic features .**
- Phenotypically, Mithun has well developed and symmetrical body with distinct muscle , and dark reddish-brown to blackish-brown hair with white stockings .
- **Mithun, also known as ‘Cattle of Mountain,’ is an important bovine species of north-eastern hill region of India .**
- **Mithun (Bos frontalis), the magnificent and unique bovine species, is distributed only in North-Eastern Hilly states of India, Bangladesh, northern Burma and in Yunnan province of China.**
- **ICAR-National Research Centre on Mithun (ICAR-NRCM), Medziphema, Nagaland celebrated its 33<sup>rd</sup> Foundation Day on June 2<sup>nd</sup> through video conferencing.**
- ICAR-NRCM is the only research institute that exclusively works on the Mithun.
- **Mithun, the state animal of Nagaland , has been officially recognized as a food animal by the Food Safety and Standards Authority of India (FSSAI) with effect from September 1,2023 , and its meat is named “ Weeshi “ .**
- To commemorate the occasion, first Mithun Day was celebrated at ICAR- National Research Centre ( NRC )on Mithun, Medziphema on 1st September 2023.
- **As per the 20<sup>th</sup> livestock census, the population of Mithun has increased by 29.93 % over the previous census, and bovine has been included in the Domestic Animal Diversity Information System ( DAD-IS ) database.**
- **On September 1, ICAR launched the M-ANITRA app to register Mithun farmers as “buyers” and “sellers” with the aim to help them do business at competitive prices.**
- Apart from training farmers such as Kewiribam, the centre has also roped in other stakeholders to be involved in different parts of the supply chain.
- **Appearance :**
- **Adult males are larger, heavier, and have more developed body muscles and horns than females.**
- **Both sexes have horns pointed outwards and slightly curved upward with a tapering end, and the horn length ranges from 0.6 to 1.15 meters .**
- Faruque et al reported similarities in body conformation and coat color of Gayal (Mithun) from Bangladesh to those of Bhutan, China, Myanmar, Mizoram, and Nagaland of India, but different from Gayal of Arunachal.
- **Unlike the hump of indigenous cattle, Mithun has a prominent dorsal ridge with a strong and well-developed neck and thick muscular and folded pendulous dewlap .**
- Its legs are proportionate in size and set well apart like beef cattle, and the body length, tail length, and shoulder height range from 2.5 to 3.3 meters, 0.7 to 1.05 meters, and 0.65 to 2.2 meters, respectively for an adult animal .
- It has a long tail that reaches up to the hock joint with a black or white switch .

**Mithun rearing tribes in the Eastern Himalayan countries :**

Tribes rearing Mithun	Districts	States/province	Country
Adi, Adi Gallong, Adi Miyong, Adi Padam, Aka, <b>Apatani</b> , Bangni, Galong, Idu/chulikata Mishmi, Miji, Mishing/Miri, Mishmi, Nissi, Tagin	Anjaw, Dibang valley, Kurung Kumey, Tirap, Lohit, Lower Dibang Valley, Upper Siang, East Siang, West Siang, Upper Subansiri, Lower Subansiri, Papum Pare, East Kameng, West Kameng, Tawang	Arunachal Pradesh	India
<b>Tangkul, Paite</b> , Any Mizo (Lushai) Tribes	Chandel, Ukhrul, Churachandpur, Tamenglong, Senapati	<b>Manipur</b>	<b>India</b>
<b>Chakhesang</b>	<b>Mon, Tuensang, Zunheboto, Dimapur, Kohima, Phek, Longleng, Kiphire, Peren</b>	<b>Nagaland</b>	<b>India</b>
Mizo ( <b>Lushai</b> ) tribes	Kolasib, Aizawl, Champhai, Serchhip, Saiha	<b>Mizoram</b>	<b>India</b>
Zo ethnic group	Sagaing, Kachin, Chin		Burma
Mru, <b>Bawn</b> , Marmas, <b>Tanchonga</b>	Ruma Upazila, Royangchhari Upazila, Thanchi Upazila (Chittagong and sylhet)	<b>Chittagong hill tracts</b>	<b>Bangladesh</b>
<b>Dulong, Drung</b>	Nujiang	<b>Yunan Province</b>	<b>China</b>
Most farmers from East and East-Central districts	Zhemgang, Samdrup Jongkhar, Chukha, Mongar, Lhuentse, Tashigang, Samtse, Tashiyangtse and Wangdi Phodrang (>10 heads)	East and East-central districts	Bhutan

**Distribution (no) and yearly trend of Mithun population :**

Location	1997 1)	2003 1)	2007	2012	2014	2019	2020
India 2)	176,893	246,315	257,478	297,289	-	386,293	-
Bhutan 3)	-	-	1,643	570	-	418	-
Myanmar 4)	-	-	30,000	-	-	-	70,000

Bangladesh	-	-	-	-	-	-	-
China	-	-	-	-	3,000	-	-

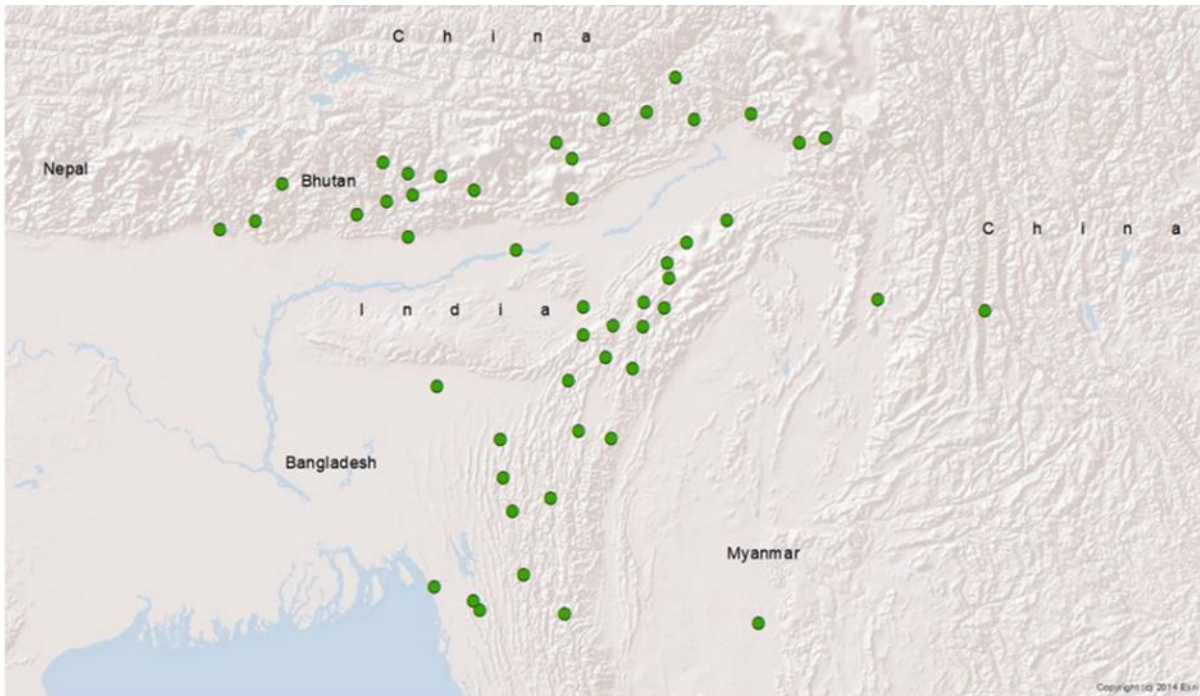
1) Ponraj [62]. 2) Government of India [31]. 3) Livestock Statistics [34,50]. 4) Zeya [33].

#### Significance and uses of Mithun in ethnic festivals and rituals:

Ethnic festival/ritual	Significance of Mithun in the festival	Name of Tribe	Place
<b>Ethnic festival</b>			
<b>Solung</b>	<b>Mithun as a symbol of peace and communal harmony</b>	<b>Adi</b>	<b>Arunachal Pradesh</b>
Mopin	Mithun is sacrificed for good fortune, a successful harvest, and a prosperous new year.	Adi	Arunachal Pradesh
Reh	Mithun is sacrificed for maintaining the bond of brotherhood and social feelings strong.	Idu Mishmis	Arunachal Pradesh
Si-Donyi	Mithun is sacrificed to propitiate the Goddess Earth as well as Sun God (Tour My India, 2020).	Tagin	Arunachal Pradesh
Nyokum Yullo	Mithun is sacrificed to usher in the prosperity and well-being of all living beings.	Nyishi	Arunachal Pradesh
<b>Etor</b>	<b>Mithun is an expression of gratitude to God for domestic animals.</b>	<b>Adi</b>	<b>Arunachal Pradesh</b>
Kaquewa	Mithun ox is sacrificed to honor the mountain god.	Dulong	Yunnan
Oros	Mithun is sacrificed during the Muslim religious festival.	Muslim	Bangladesh
<b>Ethnic ritual</b>			
<b>Dotgang</b>	<b>Mithun is sacrificed to bring peace to the soul of the dead.</b>	<b>Adi</b>	<b>Arunachal Pradesh</b>
Eso Pipak	Mithun to appease God	Adi	Arunachal Pradesh
Unnying Giidi/sobo	Mithun is sacrificed to prove the masculinity of a man and to bring	Adi	Arunachal Pradesh

	name and status in society.		
Eso Dorung	Mithun is sacrificed to avert epidemics.	Adi	Arunachal Pradesh

- **Habitat :**



**Figure 3.** Distribution of Mithun in the southern foothills of Eastern Himalaya. Green dots represent locations of Mithun habitat.

- Mithun (*Bos frontalis*), the magnificent and unique bovine species, is distributed only in North-Eastern Hilly states of India, Bangladesh, northern Burma and in Yunnan province of China.
- **Geographically, the habitat of Mithun extends from low to high altitude areas and prefers a cool climate with temperatures ranging from 20°C to 30°C.**
- Several authors concur that the Mithun's habitat is characterized essentially by the presence of streams, ponds, and lakes, undisturbed forested areas, and hilly terrains below an altitude of 5,000 to 6,000 meters with abundant shrubs, trees, bamboos, and coarse grasses .
- **This magnificent massive bovine is presently reared under free-range condition in the hill forests at an altitude of 1000 to 3000 m above mean sea level.**
- These observations suggest that Mithun flourishes well in thick vegetation along the riverbanks and the salt lick hotspots.
- India as having the largest Mithun population in the world, followed by Myanmar.
- **The Importance of Mithun in Arunachal Pradesh :**
- **A bovine species Mithun (*Bos frontalis*) is intricately related to the mythology of Arunachal Pradesh.**
- This bovine is found in Arunachal Pradesh and other Northeast states like Nagaland, Manipur and Mizoram besides Bhutan (Heli 1994).

- **In Arunachal Pradesh, Mithun is akin to gold because it commands the highest value in the barter system.**
- It is an essential part of festivals and dispute settlements in the society among Tanw people.
- Mithun is sacrificed in religious ceremonies and rituals as offering to the (supernatural) gods and goddesses (the saviour of human beings).
- The divine is supposed to bless the tribe to increase the productivity of the crops and livestock and save the human race from unnatural catastrophes like famine, epidemics and diseases.
- Mithun is believed to be the symbolic representative of peace and communal harmony; the Adi tribe observes Solung festival annually to commemorate the birth and arrival of the sacred animal on this earth.
- Traditionally, the ownership of Mithun is considered to be a sign of prosperity and social status of an individual.
- The Mithun is sacred to the Nyishi, Apatani, Galo, Adi, Mishmi, Sherdukpen and other communities of the state. Like the cow is to many in the rest of India .
- **Emerging Religious Identities of Arunachal Pradesh:**
- Most tribal communities of the Himalayan state rear Mithuns, it is the “most valued and sacred animal” for the Nyishi community.
- **Traditionally, the Mithun figures prominently in the pantheon of powerful deities the Nyishis worship.**
- Every Nyishi family possesses Mithuns in varying numbers, owning Mithuns naturally adds to a person’s social status and stands good for those who are in shortage of foodgrains as it can be used for barter.
- **Mithuns are a must in marriages, as it is the only medium of payment of bride price.**
- **Mithuns are considered sacred because Mithun sacrifice is compulsory in all ceremonial rituals.**
- Mithun is akin to gold for some Arunachali communities, commanding the highest value in the barter system.
- **The Mithun is a symbol of “peace and communal harmony”, and its sacrifice is said to usher in the prosperity and well-being of those for whom the act is intend cattle.**
- India had a total population of 1,76,893 Mithuns.
- Of the total population, the Arunachal State alone had 70.25% (1,24,194 heads).
- The Nagaland State had 18.86% (33,445 heads) followed by Manipur (9.42%; 16,660 heads) and Mizoram States (1.47%; 2,594 heads).
- **Socio-economic importance of Mithun :**
- Mithun is considered as the pride of Northeastern Hilly region of India.
- This animal plays an important role in the social, cultural and economic life of the local tribal population.
- The ownership of the Mithun is considered to be the sign of prosperity and superiority of an individual in the society.
- Farmers mainly rear the animal for meat purpose.
- Besides, this animal is also used as marriage gift and sacrificial animal for different social and cultural ceremonies.
- Though at present farmers do not consume its milk, this animal produces highly nutritious milk.
- **National Research Centre on Mithun :**

- **The National Research Centre on Mithun was established at Medziphema in the Chümoukedima District of Nagaland under the Indian Council of Agricultural Research.**
- The mandate of the institute was redefined in 1997 and 2006.
- Currently, the National Research Centre on Mithun is functioning for developing the scientific and sustainable Mithun rearing system and for catering the needs of Mithun farmers with the following mandates:
  - Identification, evaluation and characterization of Mithun germplasm available in the country.
  - Conservation and improvement of Mithun for meat and milk.
  - Act as a repository of germplasm and information centre on Mithun.
- **Conservation of Mithun:**
- ✚ There are three ways for the conservation of Mithun genetic resources:
  - through cryopreservation of genetic material like living ova, embryos or semen;
  - preservation of genetic information as DNA; and
  - conservation of live population.
- **Conservation status :**
- IUCN Red List : Vulnerable
- CITES: Appendix I.

#### **About the Food Safety and Standards Authority of India :**

- **Food Safety & Standards Authority of India (FSSAI) has been established under the Food Safety & Standards Act, 2006, as a statutory body for laying down science-based standards for articles of food and regulating manufacturing, processing, distribution, sale and import of food so as to ensure safe and wholesome food for human consumption.**
- The Act aims to establish a single reference point for all matters relating to Food Safety and Standards, by moving from multilevel, multi-departmental control to a single line of command.
- Various Acts and Orders that have hitherto handled food related issues in various Ministries and Departments have been integrated in the Act.
- **Highlights of the Food Safety and Standard Act, 2006 :**
- Various central Acts like Prevention of Food Adulteration Act,1954,Fruit Products Order , 1955, Meat Food Products Order,1973,
- Vegetable Oil Products (Control) Order, 1947,Edible Oils Packaging (Regulation)Order 1988, Solvent Extracted Oil, De- Oiled Meal and Edible Flour (Control) Order, 1967, Milk and Milk Products Order, 1992 etc. will be repealed after commencement of FSS Act, 2006.
- **The Act also aims to establish a single reference point for all matters relating to food safety and standards, by moving from multi- level, multi- departmental control to a single line of command.**
- To this effect, the Act establishes an independent statutory Authority – the Food Safety and Standards Authority of India with head office at Delhi.
- Food Safety and Standards Authority of India (FSSAI) and the State Food Safety Authorities shall enforce various provisions of the Act.
- **Establishment of the Authority :**
- **Ministry of Health & Family Welfare, Government of India is the Administrative Ministry for the implementation of FSSAI.**

- The Chairperson and Chief Executive Officer of Food Safety and Standards Authority of India (FSSAI) have already been appointed by Government of India.
- The Chairperson is in the rank of Secretary to Government of India.
- **FSSAI has been mandated by the FSS Act, 2006 for performing the following functions:**
- Framing of Regulations to lay down the Standards and guidelines in relation to articles of food and specifying appropriate system of enforcing various standards thus notified.
- **Laying down mechanisms and guidelines for accreditation of certification bodies engaged in certification of food safety management system for food businesses.**
- Laying down procedure and guidelines for accreditation of laboratories and notification of the accredited laboratories.
- **To provide scientific advice and technical support to Central Government and State Governments in the matters of framing the policy and rules in areas which have a direct or indirect bearing of food safety and nutrition.**
- Collect and collate data regarding food consumption, incidence and prevalence of biological risk, contaminants in food, residues of various, contaminants in foods products, identification of emerging risks and introduction of rapid alert system.
- **Creating an information network across the country so that the public, consumers, Panchayats etc. receive rapid, reliable and objective information about food safety and issues of concern.**
- Provide training programmes for persons who are involved or intend to get involved in food businesses.
- **Contribute to the development of international technical standards for food, sanitary and phyto-sanitary standards.**
- Promote general awareness about food safety and food standards.

**Source :** <https://nagalandpost.com/index.php/1st-mithun-day-observed-at-icar-nrcm/>

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