



Project

# Nilgiri Tahr

Saving the Mountain Monarch



### Range

Nilgiris, Southern Western Ghats



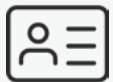
### Threats

Poaching, habitat loss & fragmentation



### Did You Know

Large male with a silvery back are called Saddlebacks



### Also Known as

Varai aadu

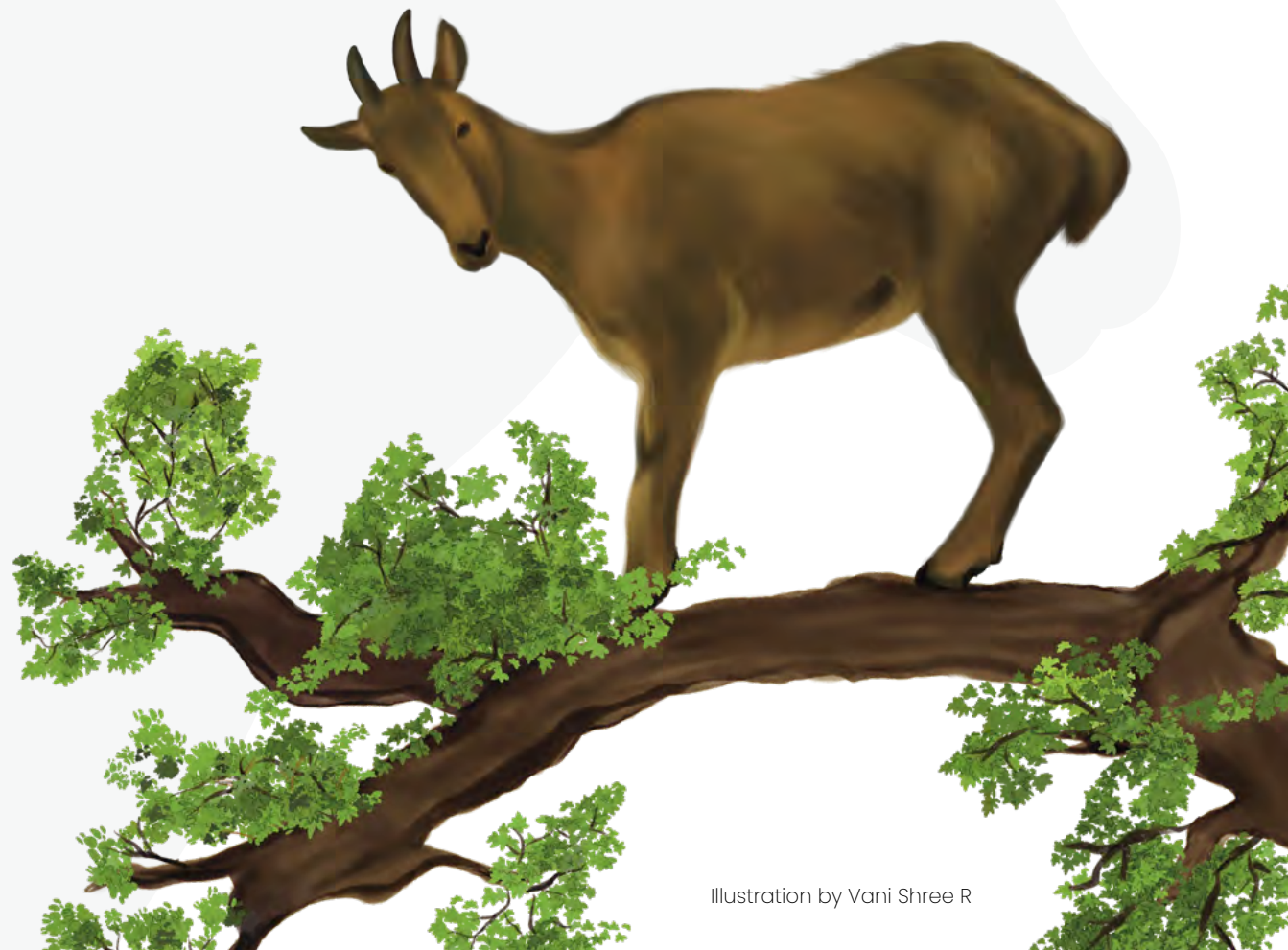
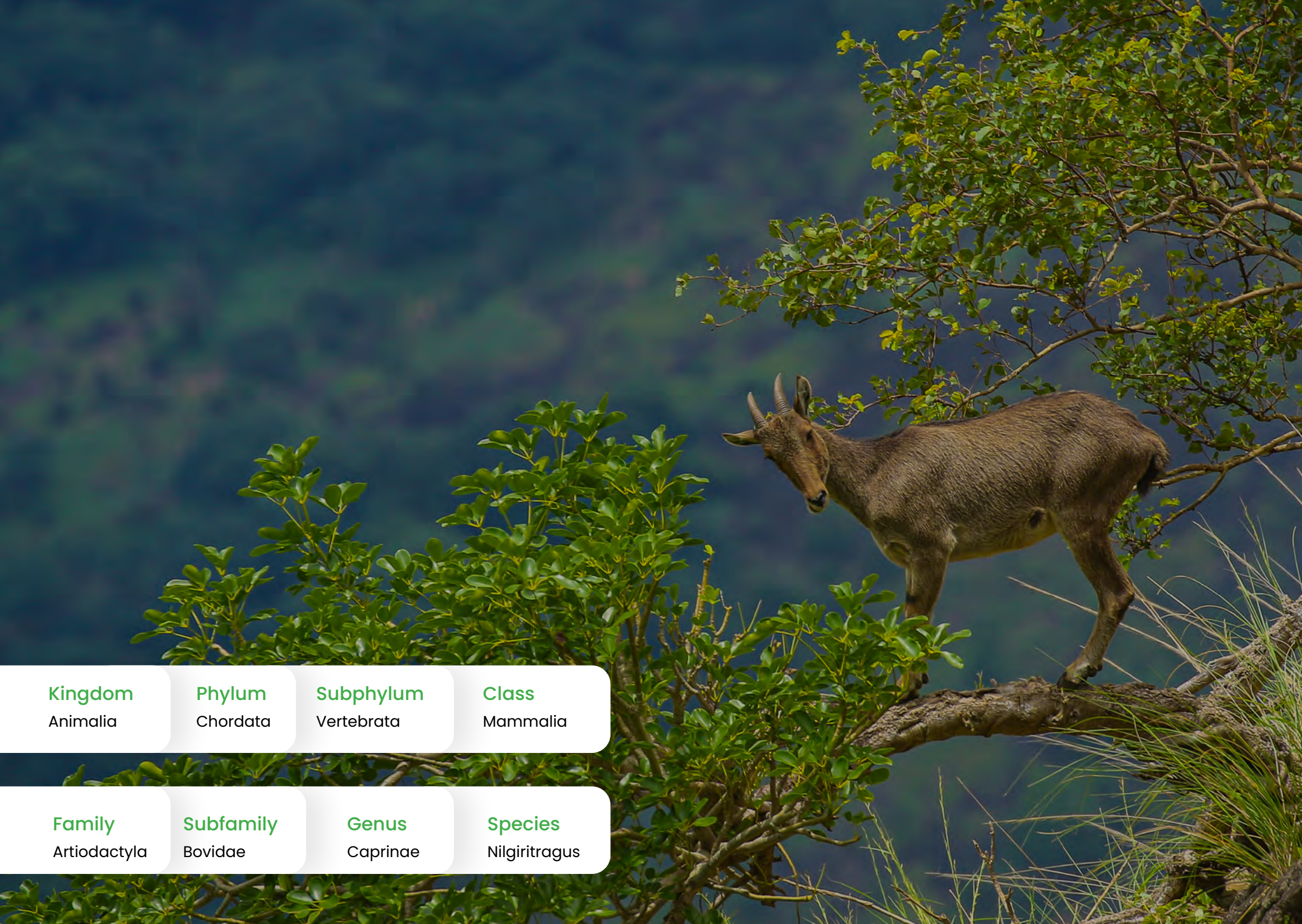


Illustration by Vani Shree R



**Kingdom**

Animalia

**Phylum**

Chordata

**Subphylum**

Vertebrata

**Class**

Mammalia

**Family**

Artiodactyla

**Subfamily**

Bovidae

**Genus**

Caprinae

**Species**

Nilgiritragus

Cr

Crepuscular

He

Herbivore

Gr

Graminivore

Fo

Folivore

Te

Terrestrial

Al

Altricial

Gr

Grazing

Zo

Zoochory

No

Nomadic

Te

Territorial

Vi

Viviparous

Po

Polygyny

So

Social

He

Herding

Do

Dominance hierarchy

No

Not a migrant

N

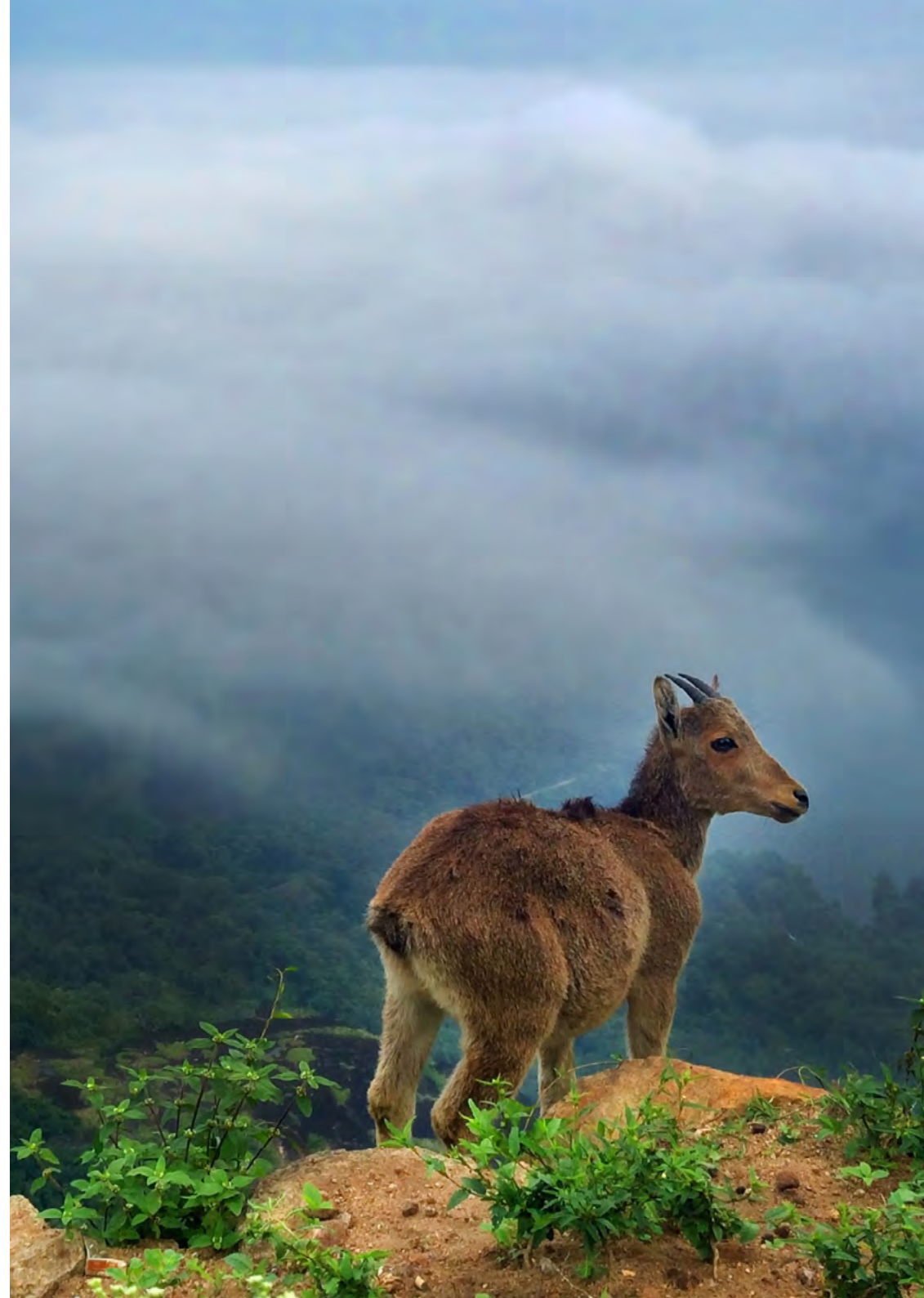
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Skillful cliff climbers. Fearless stunt masters. Extreme adrenaline junkies – if Nilgiri tahrs were human, these would be the adjectives one would use to describe them.

## The Iconic State Animal of Tamil Nadu

At plain sight, Nilgiri Tahr might appear to be a drab version of our domestic goats, but these iconic creatures are Tamil Nadu's state animal that live in the mountainous terrain spread across the Anamalai Tiger Reserve, Mukurthi National Park and Eravikulam National Park of the mighty Western Ghats. Populations are also spread across Kalakkad-Mundanthurai Tiger Reserve, and other parts of Mudumalai Tiger Reserve, Parambikulam Tiger Reserve, restricted ranges of Srivilliputhur-Megamalai Tiger Reserve, isolated pockets of Siruvani forests, Palani hills, Kodaikanal range etc.,



## The Mountain Guardians

The Nilgiri tahr, found in the montane shola-grassland ecosystems are rightly attributed to being the 'mountain guardians'. These animals help mankind in enhancing the water catchment areas and in maintaining the unique shola-grassland ecosystem which are of crucial significance to the very survival of mankind itself. It's in these sensitive ecosystems our perennial rivers originate and without tahrs, these ecosystems may not thrive as they do today.

Biologist George Schaller rightly describes it as the 'mountain monarch'. Known as Varai Aadu in Tamil (varai – cliff, aadu – goat), these gravity-defying goats are capable of scaling sheer cliffs and skillfully tread along the steep and rocky terrain at altitudes of up to 2,600 m asl.

## The real climb-masters

They have no fear of slipping or falling whether climbing up or down the hills and at times occupy places where no human would dare to go. Apart from climbing, these mountain goats are also skilled at jumping – young ones are often seen playing by jumping around the precipitous slopes as if it were a trampoline.

This indicates that the tahrs rely on traction provided by their hooves, the power of their muscular legs, and their adept jumping ability to traverse rugged outcrops.

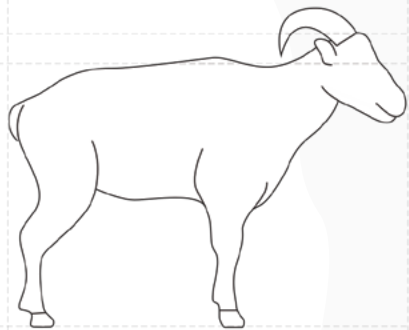
The reason for the rather local distribution of the Tahr is its preference for a habitat that is predominantly of grasslands adequately sheltered by steep rocky cliffs; a unique habitat type that has rightly given the species the local name meaning 'Cliff Goat.' These grasslands receive not less than 1500mm of rainfall annually and enjoy a short dry season and as such are restricted to just 7 high altitude landscapes (1200-2600m ASL) in the southern Western Ghats.



## Physical Description

The exterior of these tahr is sheathed with short, coarse fur and a bristly mane. While the males display a dark brown fur coat with a tinge of black, females and young ones are greyish in colour. As they grow into adulthood, both male and female goats bear backward-curving horns, although those of the female are smaller in size. A fully grown male is known as 'saddleback' due to the greyish hair that develops on the rump in the shape of a saddle.

Nilgiri Tahrs have a standing shoulder height between **25.6"-39.4" (65-100 cm)**, overall body length from **35.4"-55.1" (90-140 cm)**, standing height of roughly **26.4"-40.9" (67-104 cm)**, and a body width of **9.4"-14.6" (24-37 cm)**. The weight of a Nilgiri Tahr is between **110-220 lb (50-100 kg)**. Nilgiri Tahrs have a typical lifespan of **9-17 years**.



35.4"-55.1" | 90-140 cm



26.4"-40.9" 67-104 cm

25.6"-39.4" 65-100 cm



0" 0 cm





## Lifestyle

- Terrestrial
- Altricial
- Grazing
- Zoochory
- Territorial
- Viviparous
- Nomadic

## Social Hierarchy

Nilgiri Tahr is a social animal that lives in herds with adult females and their young ones. Most adult males live either as bachelor herds or in solitary and are observed with herds during the rutting season.

## Habitat

Endemic to the Western Ghats of South India, Nilgiri tahr are found at high elevations on cliffs, grass-covered hills, and open terrains. While occupying the grass-woodland mosaic habitat, their diet consists mostly of grass found in the montane grasslands and open shola patches atop their mountain home.

## Reproduction

Mating takes place during the monsoon season and calving is during January-February. The female gestates for about 180 days and usually gives birth to one kid per pregnancy and can give birth twice rarely two

Reproductive output varies greatly from year to year. Females nurse and care for their offspring until they reach independence

The young ones are weaned off at around 6 months and they reach reproductive maturity at around 3 years of age.

- Mating Behavior ————— Polygyny
- Reproduction Season ————— year-round, peak in July-August
- Pregnancy Duration ————— 6-7 months
- Baby Carrying ————— 1 kid
- Independent Age ————— 4-6 months
- Baby Name ————— kid



The background image shows two ibexes resting on a dark, mossy rock ledge. One is in the foreground, looking left, and another is slightly behind it, looking right. The background is a blurred mountain landscape with green vegetation and grey rock.

## THREATS

- Habitat loss due to agriculture and plantations
- Habitat fragmentation
- Competition from Livestock Grazing
- Poaching for meat

## PROTECTION STATUS

Endangered on the IUCN red list

## APPEARANCE

- Short, Coarse fur
- Adult males are generally larger than females, with thick horns, bristly mane and a darker coat
- Large males have a silvery saddle, referred to as saddlebacks

## FOOD

Primarily Grazers; Feed on grass, herbs

## MATING AND CHILDREN

- Polygynous mating system, Males mate with several females
- Male fight to gain access to females
- Birth peak in winter
- females give birth to one offspring





## Lifespan/Longevity

Nilgiri tahrs have a relatively short life expectancy. Life expectancy in the wild is estimated to be 3-3.5 years, though they may live longer upto 9 years.

## Behavior

Nilgiri tahrs are active intermittently from dawn to dusk and are primarily grazers, living in herds ranging from 6 to 150 animals, with average group sizes of 9 for all-female groups and 27 for mixed herds. Most tahrs feed in the early morning until about 8 a.m. and from 10.30 am to 2.30 pm about half are inactive. A second feeding peak occurs after 4 pm.

Males battle on mountain slopes in competition for mates.

During midday, herds usually rest in shades of cliff faces which also serve as a shelter cover to escape from predators

## Key Behaviors

Diurnal (active during the day) - crepuscular (appearing or active in twilight) - territorial - social - dominance - hierarchies

## Communication and Perception

The primary modes of communication are visual, auditory and olfactory. Pheromones released in their urine communicate information about mate identification and reproductive activity, spacing mechanisms, and alarm.

## Food Habits

Preferred foods include various grasses and forbs herbaceous (not woody), broadleaf plants (that are not grass-like). Species included among these various forage types are *Eriocaulon brownianum*, *Chrysopogon zeylanicus*, *Themeda triandra*, *Arundinella purpurea*, *Ischaemum indicum*, *Strobilanthes kunthiana*, and *Rhodomertus tomentosa*

Primary Diet: herbivore, folivore



## Predation

Native predators of the Nilgiri tahr are the Bengal Tiger (*Panthera tigris*), Leopard (*Panthera pardus*), Golden jackals (*Canis aureus*) and Asiatic Wild Dogs / dholes (*Cuon alpinus*). Another major predator are humans who poach these animals by means of shooting and snaring. Anti-predator adaptations in Nilgiri tahrs include group defense and using horns for defense and occupying areas close to human habitation or along highways with flowing traffic in the ghat sections.

## Cultural Significance

The Nilgiri tahr is described in ancient Classic (Sangam) Tamil literature including the Silappathikaram, Seevagasinthamani, Natrinai, Ainguru Nooru, Pathitruppaththu, Paripaadal and Pattinappaalai – all written over 2,000 years ago.

## Goat on the slopes, the Nilgiri tahr Perunkunrār Kizhār & Kapilar

The Tamil name for Nilgiri tahr is வரையாடு (வரை ஆடு) but the name used during the Sangam days was varudai (வருடை). The word occurs in many poems of the Kurinji mountainous landscape. Almost all the poems specifically contain the word 'mountain' or 'slopes' in them. Natrinai has these two poems on varudai

பல் மலர்க் கான் யாற்று உம்பர், கருங் கலை  
கடும்பு ஆட்டு வருடையொடு தாவன உகளும்

"In the company of a herd of wild goats on the hill  
Beyond the banks of a wild river  
with a variety of blooms floating in it"

(Natrinai 119)

.....அவன் மலைப்

போருடை வருடையும் பாயா,

சூருடை அடுக்கத்த கொயற்கு அருந் தழையே?

The leaves in the garment picked up from a spot  
Inaccessible to the mountain goat,  
Skilled at negotiating heights and chasms.  
A spot in the mountains presided over by fearsome gods

Natrinai 359

All Sangam poems refer varudai as a species of the hills or mountainous slopes - (Akam 378; Ainkurunuru 287; Kurunthogai 187; Kali 43:15; Kali 50:4,21; Malai 503)

மழை ஆடு சிமைய மால் வரைக் கவாஅன்  
வரை ஆடு வருடைத் தோற்றம் போல,  
கூர் உகிர் ஞமலிக் கொடுந் தாள் ஏற்றை

Upon these play big bulls whose legs are bet like  
those of sharp-clawed dogs and rams.  
And these resemble stags that leap about  
on bamboo slopes of cloud-capped hills.

(Pattinappalai 138-140)

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Anthropological studies reveal the rock art based on Nilgiri tahrs were done with red ochre using the flat wash technique from the Marayoor areas in Kerala during the Mesolithic (10000-4000 BP) period.

William Allister Noble, in his research paper in 1968, describes the cultural contradictions of the five indigenous people of the Nilgiris district. He mentions that the Toda people historically have changed the habit of hunting and eating. The Toda community mainly depended on buffalo rearing for their livelihood and they managed and maintained the high altitude grassland ecosystem, which eventually benefited in tahr conservation, consequently interlinking them.

## Ecological Significance

Wild ungulates such as the Nilgiri tahr play an important role in maintaining ecosystem structure, and are also determinants of predator populations.

The Nilgiri tahr is also a generalist by food habit. They feed on around 120+ species of plants including grasses, herbs, shrubs, leguminous plants and also a few tree species. This has facilitated the mountain ecosystem to be fertile through the recycling process.





## Project Nilgiri Tahr by Tamil Nadu Government

Nilgiri Tahr is the state animal of Tamil Nadu, whose cultural and ecological significance have been documented and written in the Tamil Sangam Literatures viz., Silappathigaram (சிலப்பதிகாரம்) and Seevagasinthamani (சீவகசிந்தாமனி) as early as 2000 years ago.

Taking the cultural significance and numerous ecological factors into consideration and to highlight and conserve the State Animal, the Tamil Nadu Government on 28.12.2022, launched an initiative for the conservation of the Nilgiri Tahr.

While presenting the Budget 2022-2023, the Honourable Finance Minister made the following announcement, among others in the Legislative Assembly.

“For the conservation of Tamil Nadu’s State animal, expansion of its habitat and to spread awareness among the public, the Government will implement ‘Project Nilgiri Tahr’”.

### About the project

- To develop a better understanding of the Nilgiri Tahr population through surveys and radio telemetry studies.
- Reintroduce the Tahrs to their historical habitat.
- Address proximate threats.
- Increase public awareness of the species.

### Cost

The project will cost Rs.25.14 crore

### Implementation

The project is to be implemented from 2022 to 2027

### Nilgiri Tahr Day

October 7 will be celebrated as ‘Nilgiri Tahr Day’ in honour of Dr. E.R.C. Davidar who was responsible for pioneering one of the first studies on Nilgiri Tahr in 1975.

### Conservation Status

Of all mountain ungulate species distributed in India, the Nilgiri tahr is the only one that exists in southern India. It is believed to have once been spread across the entire extent of the Western Ghats. Its population has been estimated at 3,122 in the wild, according to a report released by WWF India in 2015. A large part of its population has been wiped out from its historical range. The existing populations are under severe stress due to habitat loss and hunting, says research.

### Challenges in the conservation of the Nilgiri Tahrs

- Potential local extinction due to highly fragmented populations.
- Invasion of exotic species into the habitat.
- Forest fires.
- Over-exploitation of forest resources.
- Lack of ecological data and understanding.

Around 60 percent of the current habitats of Nilgiri tahr, an endangered ungulate residing in the



mountainous grasslands of the southern Western Ghats, are projected to become unsuitable as global surface temperatures rise. Extreme global warming could make an alarming 60 percent of their current suitable habitats unsuitable. As a result, the researchers call for greater monitoring of the habitats and populations that have been identified as most-at-risk.

## Shrinking habitats as climate warms

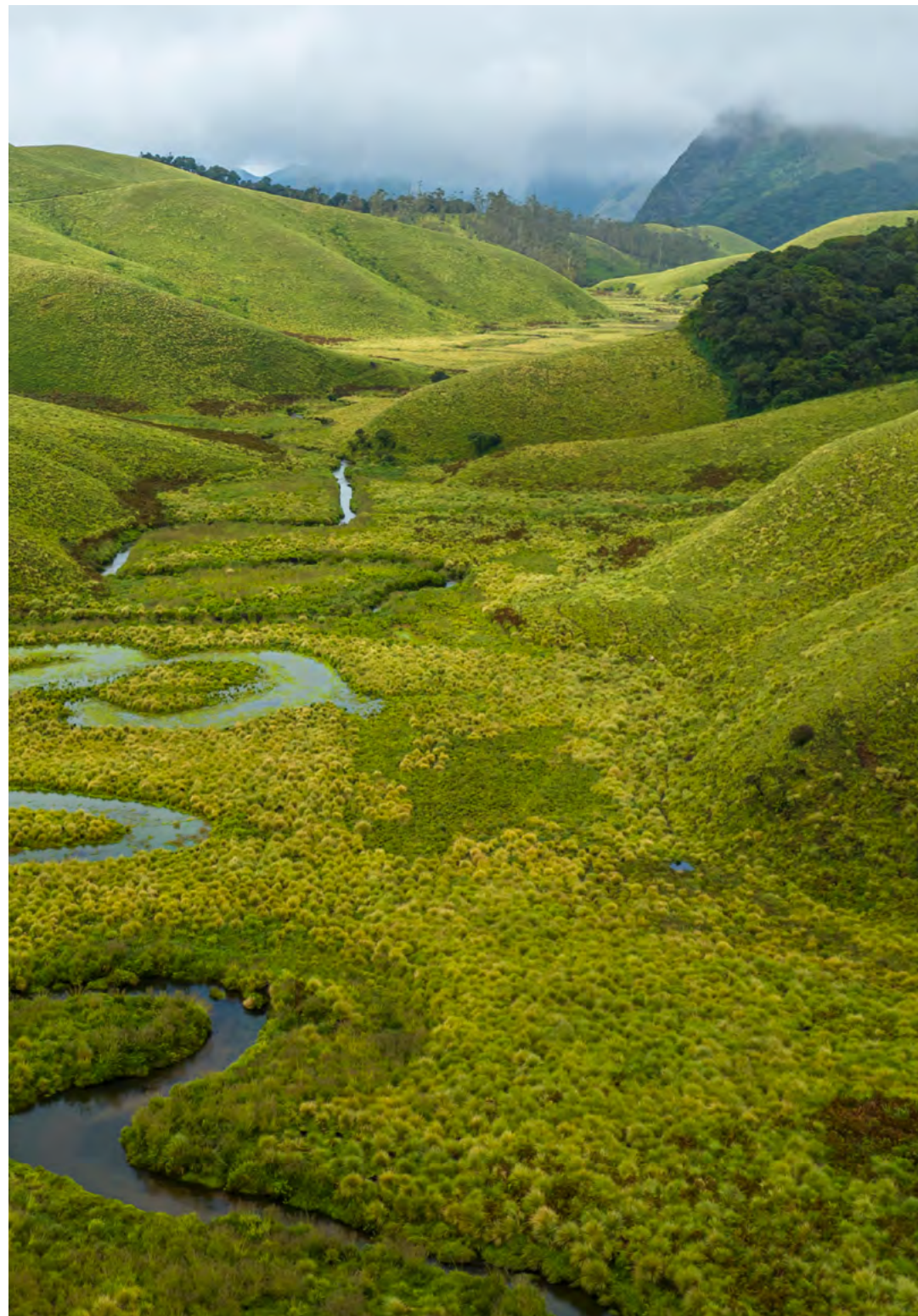
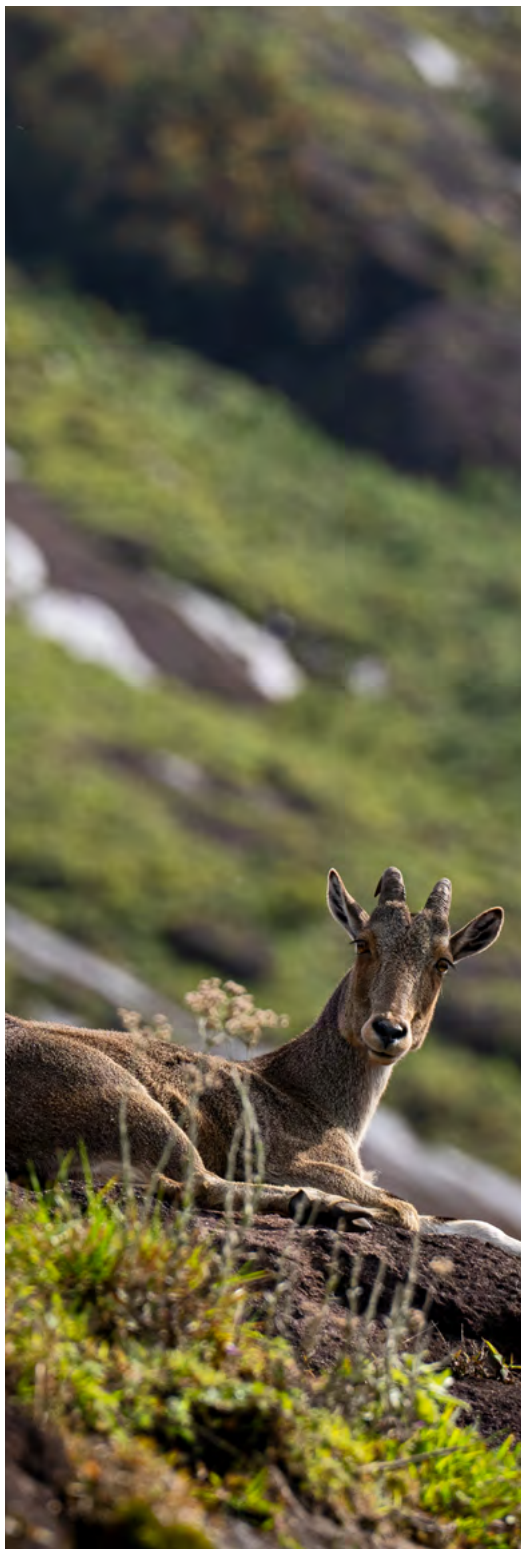
Currently the habitat suitable for the tahr spreads to 21,448 square km. In all the future climate change scenarios much of the habitat would become unsuitable for tahr and fall below 8,500 square km. For the extreme scenario, the models predicted a maximum range loss of 61.2 percent, 61.4 percent and 63 percent of current habitats for 2030, 2050 and 2080 respectively.

Specifically, Kalakkad Mundanthurai Tiger Reserve, Peppara, Neyyar, Shendurney and Srivilliputhur wildlife sanctuaries are predicted to become unsuitable for tahr in the future while protected areas such as Peechi-Vazhani and Chinnar wildlife sanctuary as well as Parambikulam Tiger Reserve and Silent Valley National Park are vulnerable under the extreme climate change scenario.

## Interesting Facts

The horns of Nilgiri Tahrs have growth rings  
The horns of the Nilgiri Tahrs are quite special too. Wondering why? Normally, the claws of animals are used to estimate their age, but for Nilgiri Tahrs, it's their horns!

Yes, this animal has horns curved towards the back, with a nearly flat interior and rounded exterior. Interestingly, they have growth rings that develop every year, revealing their age. These wrinkled growth rings cover two-thirds of the horn's surface, whereas the remaining one-third of the tip is smooth. Males have bigger, longer horns than females. This difference becomes more obvious when males experience rapid horn growth in the 2nd and 3rd years of their life. Although female horns typically grow to 26 cm, male horns can reach a length of 44 cm.





A female tahr resting after a grazing bout

## Male Nilgiri Tahrs change colour with age

You must have heard of chameleons changing their colour. But did you know that Nilgiri Tahrs, the male ones, change colour too, as they grow? Born with a grey coat lacking facial markings or carpal patches, their fur turns tan and fluffy as they grow to 10–14-weeks old. By the time they grow to 20 weeks, this coat sheds and turns grey again. They also develop facial stripes, with the carpal patch turning white. The adult male Nilgiri Tahr develops a coat that is overall dark brown to black.

And it's not just their coat, but their saddle patch too changes colour with age. By the time they turn seven, the black colour on their legs expands upwards on their shoulders, and their saddle patch turns silvery. At about 8 years, the black fur spreads throughout their entire body, including their neck, and their whole saddle patch takes a shade of silvery tint. From brown to grey to black, what a colour transformation! And what is even more interesting is that, the female Nilgiri Tahrs never lose their original colours and remain dusky to yellow brown throughout their lifespan.

## Sheep is their closest cousin

Being classified as a Tahr, the Nilgiri Tahr is more closely linked to sheep than the Himalayan or Arabian Tahr. The Himalayan and Arabian Tahrs are members of the genus *Hemitragus*, in which the Nilgiri Tahr was categorised as well, but only until 2005. After analysing their genetics based on four molecular markers, scientists concluded that Nilgiri Tahrs are more specific to the genus *Ovis*, to which sheep belong. Thus, these Tahrs were re-classified to their own genus, *Nilgiritragus*, which is derived from the Greek word *trágos*, which means 'goat', and the Tamil term 'Neelagiri', which means 'blue hills'.







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