

## IIT–JEE tests

A test for admissions to engineering courses is just that – a test to see if you have what it takes to be an engineer. As such, a categorical yes/no outcome for such tests is conceivable. A ranking is more problematic and we believe, has even less meaning than what the newspapers or the coaching classes would have us believe. An alternative way of viewing the IIT–JEE test would be as a standardizing test for students coming from various state and central boards,

with the IITs and NITs and other national institutes as stakeholders. While there can be different approaches to standardization, a standardizing test has important social and pedagogic goals. The basis for such a test is mostly a common, but basic curriculum rather than individual skills or talent. The idea of coming up with a single test to judge talent and aptitude is a misplaced one, if not fictional. Institutes and individual departments may be allowed to devise their own admission

policies after taking into account the performances in the various board exams. How exactly they do it, perhaps, is best left to the individual institutes and departments.

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## Research grants and finance officials

Gowrishankar has rightly brought to focus the relative roles of expert committees and finance officials in taking decisions on grant applications<sup>1</sup>. As I have advocated recently<sup>2</sup>, it is necessary to clearly define the precise roles of the advisory, the administrative and the financial components in the granting process. Financial accountability and therefore the role of finance officials is important<sup>3</sup>.

However, the Finance Division should not be the final arbiter in scientific decision-making. Congratulations to Gowrishankar for bringing the issue into sharp focus through a specific example!

1. Gowrishankar, J., *Curr. Sci.*, 2012, **102**, 1499.
2. Vijayan, M., *Curr. Sci.*, 2011, **100**, 815.

3. Vijayan, M., *Curr. Sci.*, 2011, **101**, 605.

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## Indian bison *Bos gaurus* in the Shivalik hills–Gangetic Plains landscape in India

Indian bison or gaur (*Bos gaurus*, Figure 1) is one of the eight species of wild bovid within the Asian range states. Due to decline in population of the Indian bison in most of the distribution ranges, it has been categorized as ‘vulnerable’ by IUCN and listed in Schedule 1 of the Indian Wildlife (Protection) Act, 1972. Earlier, the Indian bison was found throughout Southern mainland, South-east Asia and Sri Lanka. But, now the estimated population of 13,000 to 30,000 is restricted to fragmented landscapes of Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Nepal, Thailand and Vietnam<sup>1</sup>. In India, the species is found in three disjunctive regions: South-western, Central and North-eastern India (including Nepal)<sup>2</sup>.

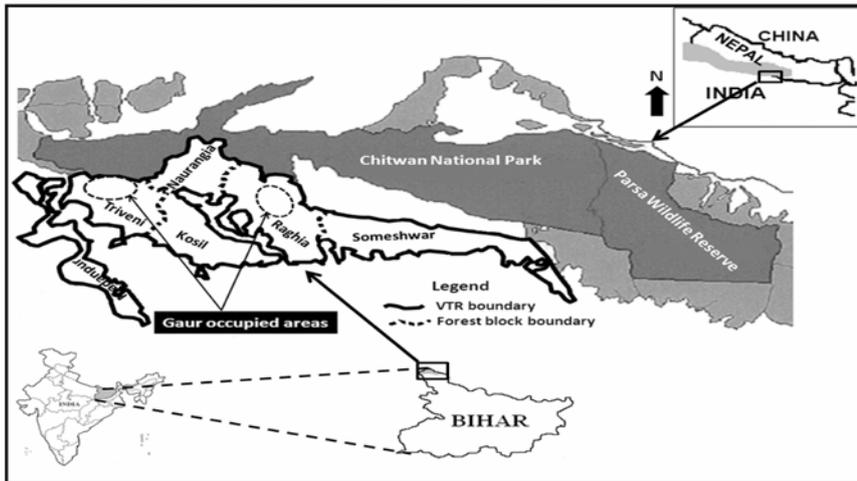
The western part of the North-east Indian population landscape, which extends up to the Chitwan National Park and the Parsa Wildlife Reserve in Nepal and the adjoining Valmiki Tiger Reserve (VTR) in India, is known as Chitwan–Parsa–Valmiki landscape, spread across 3550 sq. km (Figure 2). In 2008, 37 gaurs were seen in 170 sq. km area of the Parsa Wildlife Reserve<sup>3</sup>, and 296 gaurs were seen in the Chitwan National Park in 2007 (ref. 4). Formerly, the gaurs wandered from the Chitwan National Park occasionally<sup>2</sup>, but now they are resident to VTR.

The VTR (notified in 1994) lies in the West Champaran district in the north-western part of Bihar (Figure 2). Within its 880 sq. km, the forest types include

bhabar-dun sal, dry Shivalik sal, wet Gangetic moist mixed deciduous, khair sissou, cane brakes, eastern wet alluvial grassland and barringtonia swamp<sup>5</sup>;



**Figure 1.** Indian bison (gaur) in their natural habitat.



**Figure 2.** Map showing Chitwan–Parsa–Valmiki Landscape and gaur occupied areas in the VTR region.

whereas tiger, leopard and wild dogs are the main predators. Presence of perennial water bodies in the hilly region in northern part makes it a suitable habitat for the gaur. At present, the species is found in two main pockets (Figure 2) namely, Sonha-Pachnad valley in Triveni Forest Block (western part) and Kapan–Acchoh valley in Raghia Forest Block (central part). The species has also been spotted in the adjoining forest blocks. *Shorea robusta*, *Mallotus philippinensis*, *Lagerstroemia parviflora* and *Adina cordifolia*. *Imperata cylindrica*, *Saccharum spontaneum*, *Sclerostachya fusca* and *Themeda* sp. are the abundant grass species in this area.

Observations suggest a population of about 20–25 gaurs in each of these two pockets. A total of nearly 50 gaurs are estimated in the reserve. However, during 1970–1990, a large population was seen by the locals involved in logging operations in this area. Increased commercial forestry activity and planting of non-native tree species such as *Tectona grandis* of commercial importance in the grasslands could be the factors contribut-

ing to reduction in gaur population in the last few decades. The understory vegetation in hilly tracts has been colonized by dwarf Phoenix (*Phoenix humilis*, a type of palm). Secondly, the moist grassy areas along the stream beds have been widely occupied by *Mikania* sp., an exotic vine which overshadows grasses and herbs. Moreover, grazing cattle poses significant threat to the gaur in the reserve, in terms of competition for resources and spread of communicable diseases such as foot and mouth disease, rinder pest and anthrax from domestic livestock. However, there are no records of gaur deaths due to livestock diseases. Extensive poaching of gaur during the mid-90s has been reported by locals. The sun-dried or smoked meat of gaurs has a demand in Nepal. Two incidences of tigers preying on gaurs have been recorded in 2003 and 2011.

In recent years, gaur has reportedly been exterminated from three Indian protected areas, Thattekad Wildlife Sanctuary (Kerala), Bandhavgarh (Madhya Pradesh) and Kanger Valley National Park (now in Chhattisgarh)<sup>6</sup>. The VTR is

the only protected area in the Shivalik hills–Gangetic Plains landscape harbouring the species, hence demands serious conservation efforts. Strict conservation measures in the reserve in the last 7–8 years have curbed poaching activities, allowing an increase in the gaur population. A study was carried out in specific areas of the Triveni block. Altogether 28 sample plots (100 sq. m) were studied in two gaur-occupied areas based on gaur dung density. The results reveal an increase in the population during 2003 and 2011.

Various measures such as (i) clearing unwanted floral species, (ii) growing native and preferred food species and (iii) restricting cattle grazing and human activity in and around the identified gaur habitats, should be adopted to restore the habitat. There is a need for studies related to population dynamics, seasonal movements and feeding ecology to understand gaur ecology in the reserve, which can enable conservation.

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## Relocating *Eremostachys superba* Royle ex Benth. in Himachal Pradesh

Concerns regarding the conservation status of *Eremostachys superba* Royle ex Benth. (family Lamiaceae) in the wild and its possible extermination are serious and justified<sup>1</sup>. Losing a species has grave ecological consequences, whereby the

entire web of life is affected<sup>2</sup>. Of the 27 species representing the genera *Eremostachys*, *E. superba* is the only one to be found in India. It occurs in the sub-Himalayan tracts up to an altitude of 1000 m. The plant has a thick rootstock

and a rosette of lyrate leaves that are produced in winter season. It attains a height of more than a metre and when in full bloom, it is very conspicuous (Figure 1). The inflorescence is a spike with yellow, zygomorphic flowers. The root