

On the alleged presence of the two-horned Sumatran rhinoceros and the one-horned Javan rhinoceros in the Himalayan kingdom of Bhutan

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In the recent important paper on the actions required to save the Sumatran rhinoceros (*Dicerorhinus sumatrensis*) from extinction by Havmøller et al. (2015), I noticed a new map of the current and historical distribution of this species. This paper is signed by a dozen authors, all among the leaders of rhino conservation today. As I am working on a revised reconstruction of the ranges of all rhino species in South Asia (Pakistan, India, Nepal, Bhutan, Bangladesh), I had a close look at their interpretation of the distribution of the two-horned rhinoceros in this region. At its north-western extremity, the species is shown to have occurred in an area stretching from northern Burma (Myanmar) westward through Nagaland and Arunachal Pradesh to the south-eastern corner of Bhutan, avoiding most of Assam's Brahmaputra valley.

When I asked Rasmus Havmøller about the rationale of this range, he replied that the map was based on the previous reconstruction published by Foose and van Strien (1997). However, several modifications were made. While the earlier work shows the Sumatran rhino present in southern Bhutan and adjoining areas in West Bengal, the northern loop through the two Indian mountain states appears to be entirely new. The issue is not discussed in the paper by Havmøller et al. (2015).

As I hope to show in detail elsewhere, there is evidence that the Sumatran rhinoceros was once present in parts of Nagaland and eastern Arunachal Pradesh. However, there are no records of the species further westwards in Assam or north of most of the Brahmaputra River. At the same time, it may be mentioned that there are no records for Bhutan relating to the one-horned Javan rhinoceros (*Rhinoceros sondaicus*). The latter was erroneously implied in my early paper on the subject (Rookmaaker 1980) due to a confusion of the current Kingdom of Bhutan with the region once known as the Bhutan Duars which is now in West Bengal.

To be fair to Havmøller and his co-authors,

the mistake to extend the range of *Dicerorhinus sumatrensis* to Bhutan is not strictly theirs alone. But it is a comparatively recent change, and one for which no supporting evidence has ever been advanced. There is no mention of the species in Bhutan in standard reviews like Walker (1964), Groves and Kurt (1972), Goodwin and Holloway (1972), Rookmaaker (1983), or Baillie and Groombridge (1996). Corbett and Hill (1992) did not mention Bhutan as part of the range in their text, but the country appears to be included in their historic map, which is confusingly drawn.

It is likely that the wrong attribution was first properly introduced by Foose and van Strien (1997) in their rightly authoritative action plan. These authors mentioned the former presence of the Sumatran rhinoceros in the Bhutanese foothills of the Himalayas in their text and also showed this on their map. In the case of the Javan rhinoceros, Bhutan does not appear in their text but its presence there is shown on the map — and unfortunately my 1980 paper might well be the source of that error. Personally, having known both Tom John Foose (1945–2006) and Nicolaas Jan van Strien (1946–2008), I am convinced that the inclusion of Bhutan in the range of *Dicerorhinus sumatrensis* was nothing more than an inadvertent error, somehow overlooked in the editing process. This may be inferred from the fact that Bhutan is absent from the careful study of literature presented by van Strien (1974).

Once introduced in the IUCN Action Plan, subsequent authors have copied the mistake. It occurs in the well-known and well-produced IUCN Red List of Threatened Species in the 2011 version (van Strien et al. 2011, and still online). The references there given for the entire historical range of the Sumatran rhinoceros are Foose and van Strien (1997) and Grubb in Wilson et al. (2005), but the latter work does not list Bhutan among the animal's range states. Again for the subspecies *D. s. lasiotis*, Bhutan is listed with reference to Nowak (1999), but the small Himalayan state is not mentioned in that book in this context.

The publications by the IUCN are of course influential, and the facts presented there are repeated, often without further verification. Hence we find Bhutan listed as one of the countries where *Dicerorhinus sumatrensis* and *Rhinoceros sondaicus* have become extinct in later checklists or general works like Srinivasulu and Srinivasulu (2012), Khan (2014), as well as Havmøller et al. (2015),

The only rhinoceros ever found within the borders of the current country of Bhutan is the Greater one-horned rhinoceros (*Rhinoceros unicornis*), which sometimes strays from Manas National Park in India just across the river (Martin et al. 1987).

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