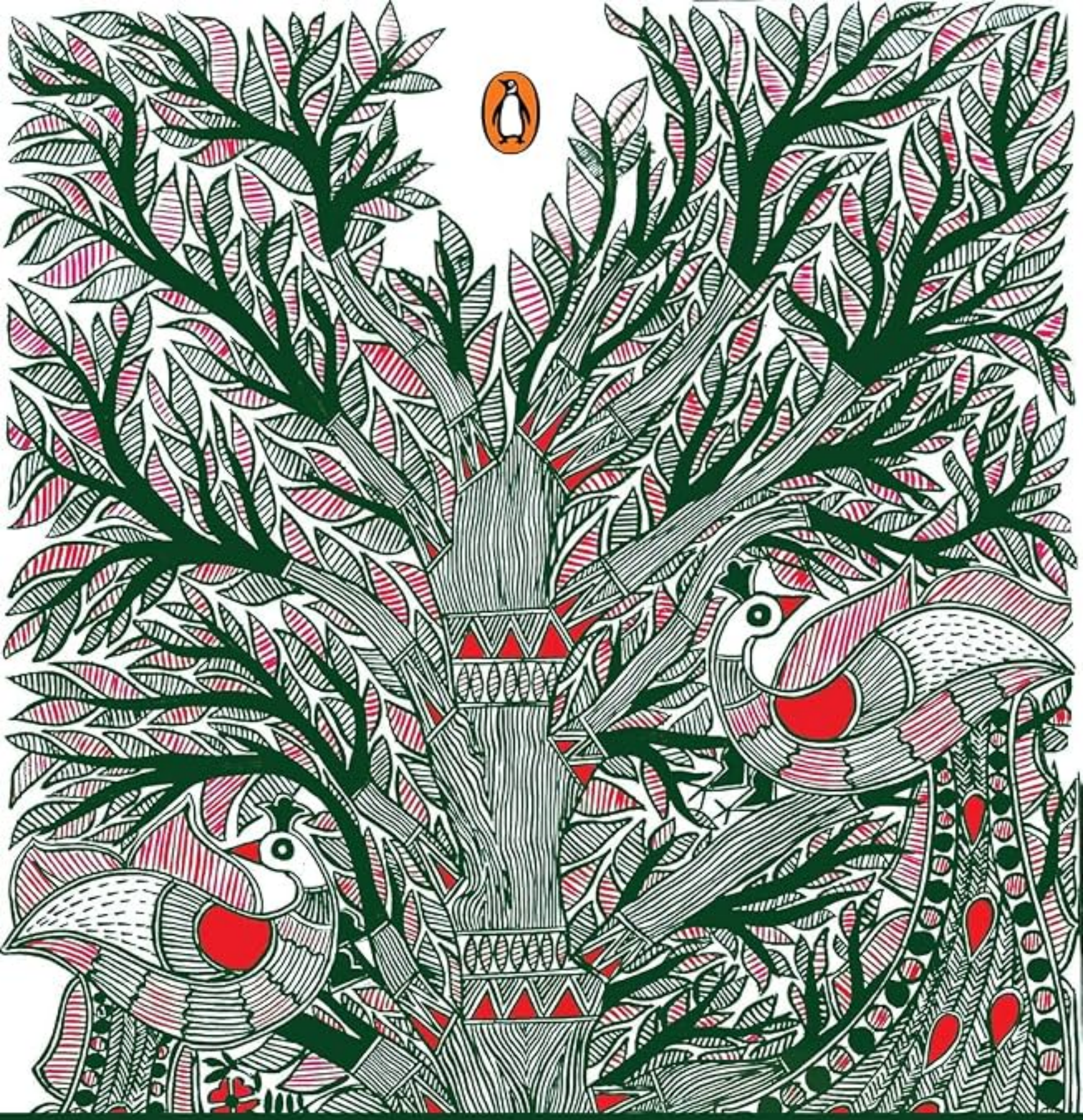


India's Forests

Revisiting Nature and History

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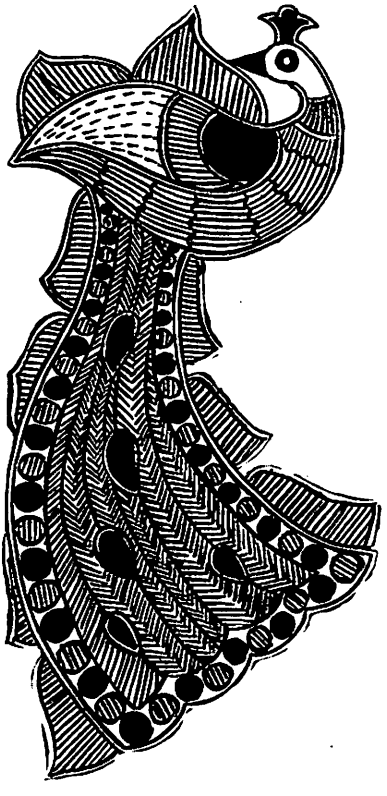
ARUPJYOTI SAIKIA

MAHESH RANGARAJAN

The Lion and the Unicorn

Fighting for Survival

DIVYABHANUSINH



Background

Consequent 1857–58, the British Crown took over the reins of governance of India from the East India Company. The latter's coat of arms was replaced by the royal signet, which became henceforth the symbol of empire. Its dexter supporter was the British lion, while its sinister supporter was the mythical unicorn famous in European heraldry.

The lion is real enough, though the unicorn is a mythical equid that has a horn growing out of its forehead. Such an animal did not populate *terra firma.* It may have evolved out of inaccurate descriptions of the true unicorn, the greater one-horned rhinoceros, which is endemic to the Indian subcontinent. This, the ancient Greek travellers to India would have seen and found fascinating. Their accounts got inaccurately portrayed as a horse in Europe over centuries. This, in turn, could have found a place in European symbolism.

In the present essay, we are concerned with Asia's last lions—*Panthera leo persica* until recently, now rechristened *Panthera leo leo*—and the greater one-horned rhinoceros, *Rhinoceros unicornis,* the true and only one of the two land animals to be a unicorn. Each occupied distinct terrain, habitat and ecosystem. But no wider story of the forests of India can possibly be complete without attention to its fauna. Of the more than 400 mammals, these are two large

vertebrates that have captured the imagination of humans for centuries and also undergone a sharp reversal of fortune, especially over the last two centuries. Their survival takes up a longer part of this 200-year period than one might realize, a point whose significance this paper will come to dwell on a bit later.

Asia's lions belong to the cat family, which has forty-one species,[1] whereas this rhinoceros is among the five extant species with two being from the Asian continent: the Javan rhinoceros (*Rhinoceros sondicus*), a smaller unicorn than the greater one horned rhinoceros, and the Sumatran rhinoceros (*Dicerorhinus sumatrensis*), which is hairy and is endowed with two horns. These animals have become extinct in India. The reader may well ask: what do the two animals, one a big cat and a carnivore, while the other, a hoofed animal and a herbivore, inhabiting parts of the north west and north eastern parts of the country, have in common apart from possibly inspiring European heraldry? It is surprising that though the two are unlike each other, they have a lot in common in their experience of anthropogenic pressure over the ages and particularly in the last two centuries, which we shall examine at some length here.

Asia's Lions: Decline and Resurrection

The realm of the lion in Asia extended from Palestine, the Arabian Peninsula, Mesopotamia, Kuzastan and the far areas of Iran to the Indian subcontinent (in the latter from Baluchistan to Palamau in Bihar). A recent study has shown that about 2110 lions were seen, shot or encountered in British India between c1790 and 1864. Their last stronghold in their former range was the present-day Haryana/ Delhi region (apart from the Saurashtra peninsula), where about 340 lions were recorded during the same period. However, by 1942, the animal had disappeared from its entire range in Asia except for the relict population in the Saurashtra peninsula in India. The last lion in Iran was shot in that year, north-west of the city of Dezful.[2] The

fate of the animal, therefore, became restricted to India alone. By the end of the nineteenth century, they were confined within the territories of Junagadh, Baroda, Bhavnagar and other smaller states, i.e., in and around the Gir forest. There was no viable population of the lion left elsewhere in Asia by this time.

That very few lions survived alarmed Junagadh state during the reign of Nawab Mahabatkharji II (1851–1882), who ordered their strict protection in 1879, and the state notified strict rules for shikar in general in the succeeding year. In 1896, Nawab Rasulkhanji's administration (1892–1911) again promulgated strict rules for shikar and required a special permit for shooting lions. Such permits were to be given for special reasons and circumstances only, limited to important personages and that too not frequently. It is noteworthy that the shikar of Indian peafowl, sacred to Hindus, was totally banned under these (Babi Pathan) Muslim rulers, a successor state of the Mughals dating to the 1740s. Additionally, the nawab removed a large portion of the Gir forest from the revenue department and transferred it to the forest department to better manage it and stop illegal activities.[3] That apart, a sanctuary was created for lions in 1906, but it appears that the proposal remained on paper only.

It was during Nawab Rasulkhanji's reign that Lord Curzon, viceroy and governor-general of India (1899–1905), desired to shoot a lion during his proposed state visit to Junagadh in November 1900.[4] However, the viceroy heard that very few lions survived and was also notified of a strong newspaper report against his intended shikar stating that vandals and the viceroys should not shoot them as so few lions survived. He, therefore, cancelled it.[5] While being disappointed with the decision, Nawab Rasulkhanji promptly challenged the report of a few lions surviving and hoped that the viceroy would visit Junagadh again before demitting office for a shikar.[6] In the event, this did not come to pass.

The belief that the lion was in imminent danger of a catastrophe had taken root for some time, particularly in Junagadh state. Major

General William Rice, who had done lion shikar before the Revolt (or the first Indian war for Independence) of 1857–58, estimated that there were only 300 lions left in the Gir. The *Kathiawar Gazetteer* of 1884, however, reported that only 10 or 12 lions survived,[7] though we do not know the basis of this assertion and it was an obvious exaggeration. Col J.W. Watson's 1884 statistical account of Junagadh records the lion to be the premier mammal of the state but rings no alarm bells of their depleting numbers.[8] Nor did Lt Col L.L. Fenton, who was in the Gir during the great famine of 1899–1900, raise a concern for them except for saying that now these animals were to be found in the Gir only.[9] Two estimations were done in 1920, one by British officer P.R. Cadell and another by J.M. Ratnagar of the Bombay Forest Service. They came up with the figures of 'about 50' and 'at least 100' respectively.[10] We have already noted that Nawab Rasulkhanji himself had refuted the claim of lions being very few in number to Lord Curzon, though at the same time, he refused to part with any of them to Gwalior state because hardly any were left, as we shall see later.

While all this was going on, the last nawab of Junagadh, Mahabatkhanji III, had ascended the throne in 1911. Being a minor at that time, the administration of the state was taken over by the British government till he attained majority in 1920. He ruled till 1947 when he made a politically naïve and disastrous decision for himself and his subjects, to accede Junagadh state to Pakistan. Fortunately, he was not fond of shikar and possibly shot not more than a lion or two throughout his reign. In fact, he was a keen protector of lions and he even threatened the Government of the Bombay Presidency by stating that he would burn the Gir forest if the British government would not stop the predations of other princes who were poaching 'his' lions. He claimed ownership of all lions, including those found outside the confines of his state.[11] The nawabs of Junagadh considered lions as royal game in the ancient traditions of kings in India and elsewhere. They were to be hunted

only by the ruler, and others could only hunt them upon their sufferance. In this case, the assertion of princely right and limited amount of shooting aided the recovery and survival of the species in India.

It was during Mahabatkhanji III's reign that J. Monteath, the diwan of Junagadh, got yet another survey of the lion population done in 1937. The result was 287 lions, but he wisely made the figure of 'not less than 150' lions public![12]

The nawab's decision to accede to Pakistan, the consequent chaos in the state, the installation of *Arzi Hukumat*, the subsequent absorption of the state into Saurashtra as part of the Indian Union caused uncertainty and brought difficult times to Junagadh's animal subjects, particularly its lions. The closely protected Gir forest became open to all and widespread destruction of wildlife was reported. The fledgling Saurashtra state was alarmed. It invited the Bombay Natural History Society under the leadership of M.A. Wynter-Blyth, the principal of Rajkumar College, Rajkot (1948–1963), and an expert on lions, along with R.S. Dharmakumarsinhji of Bhavnagar to conduct a systematic pug mark-based population count of lions in the state. Their detailed, painstaking efforts resulted in an estimated population range of between 217 and 227 lions in 1949.[13] This was a decline from J. Monteath's figure of 287 of a decade earlier. The count was significant as it was the first ever attempt to systematically estimate the numbers of a mega carnivore population in independent India.

Saurashtra conducted one more survey in 1953 before the state itself became extinct and came up with a figure of 290. This was followed by its successor, Gujarat, which came up with a figure of 285 in 1963. The estimations of 1968, 1974, 1979 and 1985 showed a decline as a result of various causes including poisoned baits or kills. A slow recovery started from 1990 with a figure of 284 lions. From then on, the population has continued increasing to 523 till 2015.[14]

A recent estimation (June 2020) by minimal total count method during the challenging time of COVID-19 was conducted by Gujarat's forest department, which resulted in a figure of 674 lions.[15] This increase in numbers has shown that lions have started reoccupying their former range in Saurashtra. Lions are found in an area of 30,000 sq. km (16,000 sq. km as permanent distribution range and 14,000 sq. km as visitation records) of the Saurashtra peninsula according to this estimation. Of the total lion population of 674 in the same year, only 416 of them are reported in protected areas, while the remaining 258 reported outside the protected areas in multi-use landscapes, which includes some areas declared as reserved/protected/unclassed forests, as shown below:

Sr. No.	Protected Area	Area in sq. km	Total Area in sq. km	No. of Lions	Total No. of Lions
Inside the Protected Areas					
1.	Gir National Park	258.71			
2.	Gir Wildlife Sanctuary	1151.59		334	
3.	Paniya Wildlife Sanctuary	39.64		10	
4.	Mitiyala Wildlife Sanctuary	18.22		16	
5.	Girnar Wildlife Sanctuary	178.80		20	
Sub-Total			1646.96		416
Outside the Protected Areas					
6.	South-western Coast (Sutrapada–Kodinar– Veraval–Una)			20	
7.	South-Eastern Coast (Rajula-Jaffrabad– Nageshree)			67	
8.	Savar Kundla, Lilia and adjoining areas of Amreli District			98	
9.	Bhavnagar Mainland			56	
10.	Bhavnagar Coast (recently established satellite population)			17	
	Sub-Total		Say 28,000		258
	Grand Total		Say 30,000		674[15]

There is some confusion regarding the total area frequented by lions in the past. The government of Gujarat gave us a figure of 22,000 sq. km earlier. Whereas Dr H.S. Singh, the now retired chief conservator of forests for the state said that the range of the lion was an area of 10,500 sq. km by 2010, which had subsequently increased to 12 to 13,000 sq. km by 2015.[15] However, a 2020 survey prudently splits the total area (30,000 sq. km) of the Asiatic lion landscape into two parts: 16,000 sq. km as permanent distribution range and 14,000 sq. km as visitation records. Yet, the pertinent point is that the lions have recolonized a huge area within the Saurashtra peninsula.

It is remarkable that while the lions have done a commendable reoccupation of their former ranges in Saurashtra, the one area from which they steered clear of till recently is the 192.31 sq. km. area of Barda Wildlife Sanctuary. This is the sanctuary the government of Gujarat had hoped would become a 'second home' of sorts for them and is now recolonized by lions. On 19 January 2023, one radio-collared male lion naturally dispersed in the sanctuary through the coastal corridor according to the June 2020 survey referred earlier. Moreover, to augment the naturally dispersed population, efforts are also being made by taking some lions in Barda from Gir.[16] This marks the historical recolonization of Barda by lions after 1879 when the last six lions in Barda were hunted down.

In May 2025, the government of Gujarat conducted the latest lion population estimation exercise using a combination of traditional visual counting method, camera traps etc. with a total of 3324 personnel. As of now, only a short preliminary report has been published. The findings are tantalizing as the table below reveals:

Area-wise percentage change in lion population in the landscape (2020–2025)

Lion Population		2020	2025	Difference	Change in Percentage
Type	Area	334	384	50	15
Source/Core Population	Gir National Park & Gir Wildlife Sanctuary and adjoining areas	10	10	0	0
Satellite I	Mitiyala Wildlife Sanctuary and adjoining areas	16	32	16	100
Satellite II	Girnar Wildlife Sanctuary and adjoining areas	56	54	-2	-4
Satellite III	South-Western Coast	20	25	5	25
Satellite IV	South-Eastern Coast	67	94	27	40
Satellite V	Savarkundla–Liliya and adjoining areas	98	125		28
Satellite VI	Bhavnagar Mainland	56	103	27	84
Satellite VII	Bhavnagar Coast	17	15	47	-12
Satellite VIII	Barda Wildlife Sanctuary	-	17	-2	NA
Satellite IX	Jetpur and adjoining areas	-	6	NA	NA
	Babra–Jasdan and adjoining areas	-	4	NA	NA
Corridor Areas	Population in corridors	-	22	NA	NA
Overall		674	891	217	32.20

The total lion population has increased by 32.20 per cent and the total landscape covered by them has increased from 30,000 sq. km to 35,000 sq. km. This is more than half of the Saurashtra peninsula's total of 61,000 sq. km in the same five-year period between 2020 and 2025.[17] This success has an attendant downside to it including human–lion interactions/conflicts, accidental deaths of lions, etc.

However, this line of enquiry deserves a detailed survey by itself which is beyond the scope of this essay.

Greater One-Horned Rhinoceros: Decline and Resurrection

The rhino was writ large on the seals found in various sites of the Harappan culture. It adorns more than forty of these and is pipped to the post by the elephant only, which is found on fifty-five seals.[18] Since the script of this ancient civilization has yet to be deciphered, we do not know the animal's significance. But it does establish the animal's western most range from c2500 BCE or earlier onwards.

In early India, Greek travellers reported unicorns from c300 BCE onwards. Kumargupta I hunted rhinos and struck gold coins commemorating his prowess in the fourth century CE.[19] In medieval India, Abu Rahim Albiruni, who spent several years in the Punjab c1030 CE, noted its presence in north India in large numbers. Muhammad Ibn-Batuta recorded its presence in the Punjab c1332 CE.[20] Babur hunted rhinos near the Swat river on entering India in 1511 CE and again at Bigram near Peshawar in 1526. *Baburnama*, his autobiography, records that there were many in the region, and Jahangir hunted one near Aligarh in UP in 1624. It appears that by this time the rhino numbers were depleting drastically. In 1769, Col Jean-Baptist Gentile visited Nawab Sujaud-Daula's Court at Faizabad and drew maps of the areas of Awadh. In these, he depicted rhinos all over.[21]

But, by the time the British got down to their shikar and habits of recording everything they saw in writing, the rhino was confined to the Terai regions of United Provinces (approximating to present-day Uttar Pradesh), Nepal, Bhutan and the Bengal Presidency, which would now include West Bengal, Bangladesh, Assam and other states of North-East India. Though they had encountered the rhino soon after their arrival in Bengal, among the earliest somewhat detailed accounts of the animal is found in Capt. Thomas

Williamson's *Oriental Field Sports* published in 1807, fifty years after the Battle of Plassey, which established the East India Company as a temporal power on the subcontinent. While Williamson recounts shikar events, he also notes that the animal is no longer found east of the Ganges;[22] presumably he means some regions of present-day Bangladesh and beyond. This may not be accurate, but it was certainly indicative of the animal's plight. 'Maori'—James Inglis—an indigo planter in north Bihar on the border of Nepal, writing of his experiences there before the 1857–58 revolt, recorded that the Rana rulers of Nepal did not allow anyone to hunt rhinos and they alone shot them.[23] Capt. J.H. Baldwin, writing about the same time, recorded that the animal was found on the Sharda river in Nepal, Pilibhit and Gorakhpur districts, 'but it is now extinct there or nearly so'. Col Alexander A. Kinloch followed soon thereafter. Writing in 1866, he recorded that the rhino had become extinct around Jalpaiguri due to being hunted and large tracts of forest having been cleared for tea plantations. In the Bhutan doars and in Assam, where there were heavy 'reed' (elephant grass, *Penninsetum purpureum Schumach*) 'occasionally several congregate in one covert'.[24] F.G. Aflalo produced a book in 1904 for 'sportsmen' describing various sports available to the British in the empire. In this lexicon, he noted that around 1860, the animals were numerous and several could be hunted in a single day but 'owing to indiscriminate slaughter of both sexes and all sizes, their numbers have been terribly reduced.'[25]

The threats to the rhino's existence were manifold, such as destruction of habitat, poaching by local people for its body parts to be used as charms or for their presumed medical properties, and indeed hunting by both Indian and British 'sportsmen'. The latter are fairly well recorded, and a couple of examples will suffice. Lord Curzon went to the Nepal Terai in a previously unplanned visit and bagged two rhinos in a day's shoot.[26] The Rana rulers of Nepal regularly mounted grand shikar camps for themselves and for their important guests. In 1911, a special shikar was organized for King

George V. Over a period of ten days: 645 elephants were used, and a bag of 18 rhinos, 30 tigers and 4 bears was secured.[27]

While several British officers and 'boxwallahs' hunted, Indians were not far behind. Writing in 1910, the forester Sainthill Eardly-Willmot noted that the rhinos had become very rare in Bengal Terai: '[The] Maharaja of Cooch Behar who was a keen sportsman and [consequently as a result of his shikar] the head of game had become insufficient for his sporting pursuits [in his state territories].'[28] The implication being that the maharaja, having finished off the game in his state, was now predating in British Indian territory. This is not surprising. Maharaja Nripendra Narain Bhup Bahadur ruled over his state with an area of 1318 sq. miles. He records in his own memoirs that on one occasion, he shot five rhinos in a day's shoot. In his shikar career between 1871 and 1907, i.e. a period of thirty-six years, he had shot 207 rhinos along with 365 tigers, 311 leopards, 48 gaur and 438 wild buffaloes![29] Here was a maharaja who was diametrically opposite of his brother princes, the three nawabs of Junagadh at the other end of the British Indian empire, who went out of their way to protect their lions.

But he was not alone in the field. E.P. Stebbing, writing in 1920, noted that the railways and increasing number of sportsmen were the cause of the rhino's decline.[30] Better communications facilitated by the railways had their own ramifications. It will be evident that the rhino was in serious decline for a while by then and the British government was alive to the threat. Permits for rhino shikar became scarce, a fact not lost on sportsmen. R.D.T. Alexander and A. Martin-Leake recorded in 1932 that it was very difficult to obtain a permit to shoot a rhino which was 'as it should be for any rare or near extinct animal'.[31] In reality, the government had virtually banned rhino hunting around 1905, though some shikar continued.

That the rhino was headed towards extinction was evident. As early as 1902, the British administration had realized that something needed to be done. J.C. Arbuthnot, the officiating commissioner of

the Assam Valley district, took up the matter with B. Fuller, the chief commissioner of Assam, and informed him that the animal had been wiped out except in remote localities of Bhutan hills, Kamrup and Goalpara and between the Brahmaputra and Mikir hills (presently Karbi Anglong District) in Nowgong and Golaghat where a few individuals existed. Fuller reacted by stating that without legislation, it would be difficult to tackle poachers, but he was open to creating an asylum for rhinos by creating a reserved forest.[32]

Consequently, Major P.R.T. Gordon surveyed possible areas for protection in 1904, and E.C. Carr, the conservator of forests, recommended that Kaziranga be declared a reserved forest. The declaration was finally made in 1908, and it was upgraded to a game sanctuary in 1916. It became a no-go area for most visitors, which thus became a haven for poachers by the 1930s. As a result, A.J.W. Milroy, the chief conservator of forests, opened the area to the public and this position remained largely unchanged till independence.

According to popular tradition, Lord Curzon was responsible for saving the rhino. However, Ranjit Barthakur and Bittu Sahgal have shown that the first steps for the conservation of the animal were a result of a few dedicated and concerned British officers.[33] How the viceroy's name got involved, is not clear. S. Deb Roy, a forest officer of Assam and a remarkable conservationist, informed me that the Vicerine Lady Curzon, visited Kaziranga around 1900. She failed to see a single rhino and had to be satisfied by seeing its spoor. She ultimately persuaded her husband to issue a notification to protect the animal. However, there is no written record of such a visit,[34] nor did Lord Curzon visit Kaziranga. Be that as it may, the tradition continues.

It is not out of place to mention here that the viceroy was very much alive to the rhino's plight. In his celebrated reply to the Burma Game Association of 1902 to their humble memorial seeking permission for sportsmen to shoot the brow antlered deer, the thamin (*Rucervus eldii thamin*), he wrote:

> Until the Mutiny [1857–58] lions were shot in central India. They are now confined to an ever-narrowing patch of forest in Kathiawar. I was on the verge of contributing to their reduction a year ago myself, but fortunately, I found out my mistake in time and was able to adopt a restraint which I hope the others will follow... The rhinoceros is all but exterminated save in Assam.[35]

He makes no mention of any visit to Kaziranga or elsewhere in Assam for rhino shikar. Of course, he wrote this in late 1901 or early in 1902, and he could certainly have gone there prior to his departure from India in 1905. As noted earlier, however, it was in his viceroyalty that the very first steps to protect the rhino were taken. Much later, the Bengal Presidency formalized protection by passing the Bengal Rhinoceros Protection Act in 1932, which provided for punishments for the illegal trade of rhino horn, and this act was followed by a similar act post-Independence in 1954.

The question, therefore, is: what were the rhino numbers during the British period? What did India inherit in 1947, and what was the situation in Nepal? According to one authority, only twelve rhinos were believed to exist in the entire Kaziranga area around 1900. One estimate puts a figure of about 200 for the entire population of the animal about the same time. Soon after Independence, the concern for the rhino was voiced by no less than B.R. Medhi, chief minister of Assam. In a letter he wrote to Prime Minister Jawaharlal Nehru in 1954, he confessed that the animal was on the verge of extinction in his state. P.D. Stracey, a well-known forest officer and a director of the Forest Research Institute, Dehradun, gave another early estimate in the post-Independence period in 1960: 150 in the Kaziranga area of 430 sq. km from a total of 300 in all Assam, 50 in Bengal and another 300 in Nepal, thus concluding that there were more than 600 animals left. He hastened to add though, that 'No accurate census of this animal so possible [sic] however and all estimates of its numbers are to be treated with caution.' E.P. Gee, the well-known

wildlife enthusiast and tea planter, estimated their number to be 625 in 1964, with 65 in Bengal, 375 in Assam and 185 in Nepal. It will be noticed that though the totals of the two estimations are not far apart, the number for Nepal is very different from Stracey's figure. Five years later, Balakrishna Seshadri, an engineer turned wildlife conservationist, came up with a figure of 745. It is not clear how these figures were arrived at by these authorities. The accuracy of these figures may be moot since we do not know their basis, but the general trend is obvious.[36] In a more recent estimation, Kees Rookmaaker of the Rhino Research Centre gives us a figure of a total of 200 in 1900.[37] From all these, one may conclude that the efforts of the Indian and Nepalese governments were bearing fruit and the rhino was on the road to recovery, as we shall see presently.

In Nepal, the animal has had a roller coaster ride, which we may briefly note, though we have already mentioned their estimated figures by Indian authorities. The ruling clan of Ranas considered rhinos as a trophy only for themselves, and their important guests hunted these, as noted earlier. But because of this reason, the animal received protection from the depredations of others. Hemanta Misra of Nepal, the winner of the J. Paul Getty Award for Wildlife Conservation for his efforts at halting the extinction of the rhino in the country, gives a very different picture from Kees Rookmaaker's estimation. He asserts that there were 1000 rhinos in Chitwan alone around 1900. But their estimated number had declined for all of Nepal to 800 by 1950 and between 90 and 108 by 1968 as a result of various social and political upheavals. King Birendra Bir Bikram Shah, during his reign from 1972 onwards, instituted strict protection measures for the rhinos. As a result, their numbers shot back to 450 in Chitwan alone. With regicide in 2001 and subsequent political unrest in the country, the rhinos suffered again. While their population had grown to 550, it came down to 370 by 2005 for all of Nepal.[38]

Over the years since 1947, with protection provided by the governments of India and Nepal, the rhinos have survived and

grown. Without going into periodic estimations over the years, we may note the population figures of 2022 for India and of 2021 for Nepal:[39]

Protected Area	Area in sq. km	Total area in sq. km for country	Total no. of rhinos	Total no. of rhinos for country
India				
Kaziranga N.P.	889.51		2613	
Jaldapara N.P.	216.50		292	
Orang N.P.	78.81		125	
Pobitora W.S.	38.85		107	
Gurumara N.P.	80		35	
Dudhwa N.P.	680.32		40	
Manas N.P.	500		38	
		2483.99		3270
Nepal				
Chitwan N.P.	932		694	
Bardia N.P.	968		38	
Suklaphanta W.R.	305		17	
Paroa W.R.	499		3	
		2704		752
Grand Total		5561.04		4022

Note: N.P.=National Park, W.S.=Wildlife Sanctuary, W.R.=Wildlife Reserve.

The unicorn has come a long way from the bottleneck it went through at the dawn of the twentieth century with a total population of about 4000 today. It is sad to record that the animal is probably locally extinct in Bhutan. But the animal's success elsewhere has its own challenges.

A Second Home for Asia's Lions

Lions have been doing rather well for themselves in the Saurashtra peninsula. Yet, a second home is essential in a landscape that is

geographically as far as possible from its present stronghold. The reasons for this are obvious. The entire lion population is in one area. That their range is about 35,000 sq. kms is no insurance as epidemics of diseases or other natural calamities would make them vulnerable in one location. In 1962, a blood-sucking fly, *Stomoxis calcitrans*, killed ninety lions in the Ngorongoro Crater, Tanzania, leaving only ten survivors. This affected the reproductive capacity of the surviving males. The Serengeti plains of Tanzania lost 1000 lions—one-third of its total population—to canine distemper virus (CDV) within eight months in 1993.[40] CDV is present in the canine population in India, and it impacted the Gir forest's lions in 2018 with alarming results. The forest is prone to cyclones, floods and famines as well. Fortunately, natural calamities have not taken an irreparable toll on the lion population till date, but that is not a guarantee that it will not occur in the future. Serengeti itself, which is 14,500 sq. km, is a large area by any standard,[41] and yet its lions were devastated by disease.

The Gwalior state in central India was home to lions, but around the beginning of the 20th century, they had become locally extinct. Maharaja Madho Rao Scindia (1888–1925) requested Junagadh State through the British government if a few of them could be spared from the Gir. Nawab Rasulkhanji, however, was not willing to part with any. He promptly replied that

> '. . . owing to some hunting, [some having] fallen victims in the dire calamity of 1900 [*Chappanio Kal* the famine], some having been killed outright by the Gaikwad's subjects and servants of the Kodinar Division [of Baroda State] and some having been otherwise destroyed . . . that it is almost impossible [to spare lions for Gwalior].[42]

Thus, the nawab laid the foundation for the ownership of all lions in 1901. His son and successor, Nawab Mahabatkahnji III, went

a step further in 1929. In a letter to the agent to the governor of Bombay Presidency in Kathiawar, E. Macanochie, he wrote: 'As a matter of fact the real point at issue is the ownership and political right of inviting distinguished visitors to Kathiawad for lion shikar . . . I would therefore ask that the [imperial] government may fully consider the matter and use their influence that my rights are respected and especially the scandal of tying buffaloes within sight of my [Junagad State's] borders is stopped.'[43]

It is noteworthy that the first attempt at translocating lions failed in 1901, even before it started—Gwalior State got African lions instead to replace their lost lions. But they were wiped out in a few years thereafter, and that's another story by itself. Nawab Rasulkhanji refused to part with any and laid the foundation for the claim of their ownership exclusively for Junagadh.

The next attempt took place as a result of the generosity of Saurashtra state in 1956, just before the state itself was to disappear in the reorganization of states on a linguistic basis. This second home was the Chakia forest of Uttar Pradesh near Varanasi, called the Chandraprabha Wildlife Sanctuary. A male lion and two lionesses from Gir were caught and released there. Their number grew to 11 by 1965, but the small sanctuary could not hold them; they wandered out and were soon wiped out.[44]

The next attempt was made in 1976 when a committee consisting of R.S. Dharmakumarsinhji and M.K. Ranjitsinh was formed to survey Jaisalmer area in Rajasthan. A report was made, but that's where it ended. The very next year saw a proposal being mooted for a second home in Iran. After all, Asia's lions were scientifically known as *Panthera leo persica*, Persian lions until recently. Arzan National Park was created in Iran for the purpose. The idea was to get Asiatic cheetahs (*Acinonyx jubatus venaticus)* in exchange which had become extinct in India.[45] If the programme had fructified, both countries would have been able to reintroduce and bring home their lost cats. There were political upheavals in India with the Emergency

of 1975 to 1977 and beyond, and Mohammad Reza Shah II Pahlavi himself went the way of the lion in Iran soon thereafter in 1979. Eskandar Firouz, the environment minister of the Shah's regime who was keen on the project, lost his job and was imprisoned for several years by the Ayatollah's government. The idea died for good.[46]

Once again, in 1993, another attempt commenced. The Wildlife Institute of India was commissioned to do a survey for a possible second home site. They selected Kuno Palpur Sanctuary in Madhya Pradesh with an area of 344.68 sq. km. The MP government resettled 1650 families of twenty-three villages making the area suitable for lions. Additionally, an area of 923 sq. km was transferred to the new Kuno division, bringing it under a single management.[47]

While the new site was being prepared, opposition to the project appeared for the first time. Several NGOs, including Saurashtra Paryavaran Samrakshan Parishad, took the lead. They resorted to dharna at Talala, Gir, to oppose translocation. The situation soon escalated with local support, which lead to Shankarsinh Vaghela, chief minister of Gujarat, to declare at a press conference on 19 April 1997 that 'not a single lion cub, not to mention a lion, shall be permitted to be translocated anywhere [outside Gujarat]. The government of Gujarat was capable of protecting lions totally [in Gujarat itself]'. In 2002 Dolat Desai, the then state forest minister of Gujarat, stated among other things that 'the people of Gujarat are against the idea [of lions being taken out of Gujarat] and therefore we shall never agree to such a plan.'[48]

Thus, the successor governments of Gujarat carried and expanded their claims to the ownership of all lions first made by the Nawab Mahabatkhanji III of Junagadh by following in his footsteps to their logical but, unfortunate conclusion. The nawab's legacy lives on.

From the foregoing, it will be seen that while the Saurashtra state did allow lions to be translocated to UP, the present government of Gujarat is unable to do so. There has always been local pride in

lions in Saurashtra; this is obvious from the fact that so many of them are roaming around all over the peninsula and are growing in numbers. However, apart from this pride in Gujarat's *asmita*—uniqueness—in so far as it is the only political entity outside Africa to have lions, the matter has been politicized over a period of time. As the lions go further and further afield from Gir, the love for lions may decrease. Another viewpoint is that if lions go out of Gujarat, their diminished 'asmita' will impact adversely the urge to protect them among the people of the state. The late K.S. Lavkumar, the renowned conservationist, voiced his concerns on this count as early as 1956 when the earlier attempt at translocation was made.[49] He continued to voice his concern several times to me and others until his recent demise.

The matter of translocation reached the Supreme Court as a result of a public interest litigation. The court, after considering all the facts put before it, ordered that the lions should be translocated to Kuno Palpur.[50]

A high power committee was instituted as a result of this order in 2013. But, because of one cause or another, no translocation has taken place till date, and it appears likely to face more hurdles in the future as cheetahs have been introduced in the area instead in 2022. Neither the government of Gujarat nor the government of India are interested in the project of reintroduction of lions there or elsewhere in India outside Gujarat and that is the end in spite of all the logical reasons for such a move in the interest of the long-term survival of Asia's lions.

A Second Home for the Greater One-Horned Rhinoceros

Kaziranga has a phenomenal number of rhinos—2600 plus at the last count. It is to the credit of the Assam government that the animal has come back from the brink of extinction. Yet there is a need to have as many different sites as far away as possible from Kaziranga to avoid

a major disaster visiting its stronghold. The national park is bound on one side by the temperamental Brahmaputra river which breaks its banks regularly. During the monsoons, the animals are forced to migrate towards Karbi Anglong hills by crossing National highway No. 37. The remaining three sides are bound by the highway and paddy fields of villages which have cattle, goats, dogs, poultry, geese, etc. The rhinos often leave the confines of the park and cattle enter it. A single virulent disease epidemic or a natural disaster can decimate the rhinos as, indeed, other fauna in its very stronghold.

As early as 1979, the Indian Board for Wildlife set up a committee to evaluate possibilities of finding a second home for the rhino. After a careful study, the Dudhwa National Park in Uttar Pradesh was selected. In 1984, five rhinos: one sub-adult, two elderly females, one adult male and one older male, were brought to Dudhwa from Pobitora sanctuary in Assam by air and road. The Nepalese government generously gave four females from Chitwan. This was the seed population from which it had grown to 23 by 2015, according to one source and to 35 in 2016 by another,[51] in spite of the ever-present threat of poachers and occasional predation by tigers. For example, the rhino named Sahdev was killed by a tiger on 3 March 2017.[52] By 2022, though, the population has grown to 40.[53]

The 1984 translocation took place with the cooperation of the Assam government. But, soon thereafter, regional nationalism took charge and the Assamese people who take pride in their *gainda* took ownership of the animal, much in the manner of Gujarat's asmita. Consequently, the state government no longer felt able to part with anymore animals for translocation outside Assam. This stand is difficult to understand since rhinos are found in UP and West Bengal in India, apart from Nepal. Thus, Dudhwa is fated to remain isolated unless Nepal again gives rhinos as it did earlier.

That being the case, Manas National Park in Assam came on the horizon. This park was hit by political unrest and the insurgency

by a section of the Bodos, a Scheduled Tribe. Once, rhinos were found in appreciable numbers there, but they had become locally extinct. Between 2008 and 2012, twelve rhinos were brought in from Pobitora Sanctuary. In 2012, Kaziranga sent eight more animals, i.e. a total of eighteen animals were brought in. Their population increased to thirty-two in spite of a couple of them having fallen to poachers' depredations. The number had increased to 38 by 2020.[54]

Similar Pasts, Similar Present and Some Comparisons

The two animals, one a carnivore and the other an herbivore, with all the attendant differences except for the fact that both are megafauna, share a very similar fate at the hands of human beings. Both passed through recent bottlenecks though the alarmingly low figures reported in both cases around 1900 and again in 1954 for the rhino were surely exaggerated. Recent mitochondrial DNA analysis points to an earlier bottleneck in both cases. In the case of the lion, it went through it some 20,000 years ago, and some signs of inbreeding are already visible, according to Stephen J. O'Brien, in the form of a reduced mane, pronounced belly fold, reduction in healthy sperm count and so on.[55]

In the case of the rhino, the population in Nepal appears to have gone through a bottleneck between 2000 and 10,000 years ago, whereas the Assam population appears to have gone through it between 800 and 4200 years ago. Since these animals do not show signs of degeneration due to inbreeding, the bottleneck of c1900 does not appear to have been as severe as it was made out to be.[56] Possibly there was greater connectivity of these populations along the Brahmaputra then.

Both species were being destroyed by human action. The lion was being shot as vermin and Kathiawar princes paid bounty, destroying sixteen of them in three years around 1870.[57] The rhino, on the other hand, was pursued for its body parts. Additionally, both

were pursued for sport by Indian princes. Thus, the bottlenecks in both cases were a result of natural causes and human interaction at different times.

Both animals were protected as royal game by the Junagadh state and the Ranas of Nepal for the lion and the rhino, respectively. More importantly, in India, the lion received protection from Junagadh state and the rhino under British rule out of fear that the animals may become extinct, i.e. in the interest of the survival of the two species themselves. This protection continued through the succeeding decades and does so even today. It is noteworthy that these animals were the first to be protected for their own sake in the British Indian empire. It is not out of place to mention that in Madras Presidency, the elephant had received protection as early as 1873 under a specific enactment in that year and six years later, British India extended protection to them from indiscriminate decimation of herds.[58] However, this was done to ensure a supply of these animals for human activity, such as for using them for logging or as draft animals, and not for protecting the species itself for its own sake.

There is one major aberration, though, in the experiences of these animals. In 1947–48, the lion faced an onslaught on itself and its prey as a result of Nawab Mahabatkhanji III's inapt decision to accede Junagadh state to Pakistan. The rhino, however, was lucky enough to escape such a calamity in the wake of political changes of the time.

In the case of both animals, the state authorities felt the need for a second home for their long-term survival. In the case of the lion, the 1956 effort failed. Subsequently, the Gujarat government has taken a view diametrically opposite of its predecessor, the Saurashtra government. For all practical purposes, it now claims ownership of its lions and a second home in Kuno or elsewhere is a distant dream, if that. In the case of the rhino, the earlier attempt at a second home succeeded, though later on, the Assam government, too, was not keen to part with them for translocation outside its territory.

In both cases, the opposition to the translocation of the animals is really a result of recent regional pride notably absent earlier, which became evident after one translocation having taken place. In the case of the rhino though, the animal exists in West Bengal, UP and Nepal, so the stand of Assam is difficult to understand.

It is not out of place to mention here in passing that a recent study has found genetic variations in the rhino populations in Gorumara and Jaldapara in West Bengal and Pobitora, Kaziranga and Orang in Assam. The study suggests, however, that these areas be treated as a single management unit in view of the fragmented and small populations of the rhinos in these locations.[59] Such is not the case of the lions found in one geographically contiguous area recently expanded by them.

The populations of both animals have one large habitat in India, their stronghold, in Gir forest and Kaziranga. The rhino has, luckily, another major one in Chitwan, Nepal. The danger in the case of both animals is that with the disappearances of corridors used by them for local migrations, the fragmented populations would inbreed, causing genetic deformities, unless the state in each case takes the matter in its hands and manages the populations scientifically. Furthermore, these habitats are vulnerable to natural calamities such as floods, fire, earthquakes and human depredations, which can have deleterious effects on the single largest populations of the two animals. Additionally, epidemics of diseases are also a real danger they could face.

Lions face ever-present threats to their lives by electrocution and falling in open wells, though poaching appears to be controlled for the present. In 2016–2017, twelve lions met unnatural deaths. In the same year, there were eighteen attacks by lions on humans, of which three resulted in the death of the latter. There were large numbers of livestock deaths caused by lions and leopards which were compensated for by the government in the same year.[60] Ashwin Kumar Choubey, minister of state for environment, stated

in the Parliament earlier this year that 555 lions had died in five years. Details of unnatural deaths are not available.[61] (Actually, this omnibus figure would include deaths of lions in zoos all over the country and also natural mortalities among cubs, resulting in an inflated final number). Nine people died as a result of lion attacks between 2019–20 and 2022–23.[62]

These challenges are the result of successful conservation resulting in increasing populations of these two megafaunas because of state action. Only the state can mitigate them with local support of people living in these landscapes.

The rhinoceros faces onslaught from human beings because of the perceived medicinal properties of its body parts, particularly its horn. In 2015, Kaziranga alone lost seventeen rhinos to poachers' depredations and a similar number succumbed the following year. A newspaper report claims that only two rhinos were poached in 2017 up to October. 260 poachers were arrested since 2014 and forty-eight were arrested in 2017 and twelve were killed in eight separate encounters. In 2017, five rhinos were poached in Kaziranga and three in Orang. In 2018, only one rhino was poached in Assam. In 2019, two were poached in Kaziranga and one more in Assam.[63] In 2020, two rhinos were poached in Kaziranga and one in 2021 while 2022 saw no poaching in Assam. In 2023, there were some suspected cases, and one has been reported from Kaziranga in 2024 so far. It is heartening to record the comeback of both animals from the brink of extinction. It is primarily a result of state intervention and support of local populations. But success brings in its wake new challenges, which can only be addressed by the state. Unfortunately, the state is usually reactive in its response rather than being proactive. In the meantime, the lion and the rhino will have to keep fighting for their survival.

The importance of the success of lion and rhino conservation cannot be overemphasized in spite of the threats they face in India today. A few comparisons will illustrate the point. The lion in Africa

is fighting a rearguard action, and its population throughout the continent is shrinking. The Barbary lion, which inhabited the African continent above the Sahara Desert and was genetically closest to the Asiatic lion, has been extinct for some time.

The tiger, a top predator, the apex of the food chain in its landscape and iconic like the lion, has had a rough ride too. According to a press release of the Global Tiger Forum of 23 July 2023, the animal is extinct in Cambodia, Laos and Vietnam.[64] Whereas in China, it is less than sixty in number and only twenty-eight remain in Myanmar. The animal has survived or prospered in Nepal (355), Bhutan (131), Bangladesh (114), Thailand (161), Malaysia (150), Indonesia (393), and Russia (500). In India, the count is 3682, an upward trend of sorts from some 1800 in 1972–73, when the first population estimations were done. The global tiger population now stands at only 5574. The USSR started protecting tigers from the 1930s onwards when it was believed that only twenty to thirty animals survived.[65] The USSR has disappeared but Russia continues to give the animal its protection, thus securing the tiger population in the wild. Without going into details, let us note that the animal has survived only because of state interventions and it has declined or vanished where it did not have state support or the support was ineffective.

The situation of the rhinoceros in Asia is even more dire. Two sub-species of the Javan rhinoceros *Rhinoceros sondicus inermis* and *Rhinoceros sondicus annamiticus* have been completely wiped out from their entire range. The nominate race, *Rhinoceros sondicus sondicus*, hangs on by a thread with a population fifty-five and fifty-eight in Ujung Kulon National Park in Java, Indonesia.[66] The case of the two sub-species of the Sumatran rhinoceros is equally depressing. *Decerorhinus sumatrensis harrissoni* became extinct with the recent Malaysian declaration to that effect. *Decerorhinus sumatrensis sumatrensis* has also been wiped out from almost its entire range. Only up to thirty of them survive in Bukit Barisan Selatan, whereas in Way Kambas and Kalimantan the population figures were held

back for security reasons. The total population of *Decerorhinus sumantrensis sumantrensis* is believed to be about 100 in fragmented habitats in Sumatra.[67]

Both the Javan and Sumatran rhinoceros were present in India, too, in the western-most extremities of their range in Bengal and beyond in the east. However, they died out more than a hundred years ago. They received no state protection.

It is fortuitous that in India, the imperial policies, Junagadh State policy and the Indian Republic's policies are more or less a continuum which has enabled the lion and the 'unicorn' to survive and prosper in spite of increasing human and livestock populations in the country. Here the case of the tiger in other Asian countries is relevant in so far as it survived where it has received state protection. Whereas in the case of the rhino in the rest of Asia, the absence of post-colonial state protection for its other two species has spelt their doom except for a few relict populations.

In case of both the lion and the rhino, the animals went through severe bottlenecks. Yet their numbers did not go so low that they could not bounce back. In today's scenario in India, the genetically pure wild buffalo *Bubalus arnee arnee,* and the Great Indian Bustard *Ardotis nigriceps,* have likely reached the point of no return unless the latter is rescued by the recent breeding programme in Rajasthan's Thar desert. For them, state protection has not been forthcoming or delayed. Unfortunately, unlike the lion and the rhino, they are not iconic enough and they do not occupy the public imagination in the same way.

There is a very important takeaway from all this: megafauna need mega habitats. Less than 4 per cent of India's landmass is under the protected area network, which in turn faces the brunt of 'development'. Under India's constitution, all natural resources belong to the state, and therefore, it is the sole legal custodian and protector of its fauna and flora. Popular support and non-government organizations can only estop, encourage and support the state. Several positive results

have been claimed by NGOs and rightly so. But these efforts so far are miniscule on the large Indian canvas. Their efforts have not been replicated in large enough numbers to make an appreciable dent on a countrywide scale. State action saved the crocodilians' decimation in the past as, indeed, it brought the cheetahs back, too. The state is paramount, and only its action, supplemented by local pride, can ensure the survival of the lion and the unicorn in times to come.

Note

This paper is an updated and expanded version of the paper which appeared in the *Journal of Bombay Natural History Society* Vol. 115 (2018), pp. 1–18. The title of this paper was inspired by an old English ditty. The lion is a symbol of England and it was a part of the coat or arms of English kings. In 1603, King James VI of Scotland succeeded Queen Elizabeth I as King James I of England. An equid with a horn growing out of its forehead was in the coat of arms of Scotland. Hence, the lion and the unicorn were combined and they became the supporters in the new coat of arms thereafter. Thus, the mythical unicorn ruled over us as the symbol of the Indian empire from 1858 to 1947. The old ditty inspired by the coat of arms of Britain goes thus:

The Lion and the Unicorn

The lion and the unicorn were fighting for the crown,
The lion beat the unicorn all around the town;
Some gave them white bread and some gave brown,
Some gave them plum cake and drummed them out of town.

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