

## Black rhinoceros



### Species and subspecies

- Common name: black rhino
- Synonym: Hook-lipped rhino
- Scientific name: *Diceros bicornis*: "Di" meaning "two", "cerato" meaning "horn" in Greek and "bi" meaning "two", and "cornis" meaning "horn" in Latin
- Four or five subspecies:
  - Western *Diceros bicornis longipes*
  - Eastern *Diceros bicornis michaeli*
  - SouthWest *Diceros bicornis bicornis*
  - SouthCentral *Diceros bicornis minor*
  - And possibly *Diceros bicornis brucei*

### Physical characteristics

- The black rhino is the smaller of the two African species. Adult males weigh up to 1,350 kg and females up to 900 kg. They stand up to 1.6 m tall at the shoulder
- The colour of their skin is basically grey but varies from yellow-brown to dark-brown according to local soil conditions. They only have hair on the ears, tail tips and eyelashes
- Their sense of hearing is excellent and they have a very good sense of smell as well, but have poor eyesight and cannot easily detect an observer standing more than 30 metres away. They can detect movement, however, at short distances
- Like all rhino species, they have three toes, and thus three stout nails, which leave impressions on the ground to the front and side of a softer wrinkled sole. The front feet are bigger than the back feet
- Black rhino have two horns, which grow continually from the skin at their base throughout their life (like human fingernails). The horn is continually worn away by rubbing. Each rhino develops its own rubbing habits and horn-wear patterns. Rhinos from different areas can have horns of different shapes. Horn shapes also differ between the sexes, with males tending to have chunkier horns and the females often longer and thinner ones. The horn is comprised of thousands of compressed hair-like strands of keratin, making it extremely hard and tough, but it can be broken or split during fighting. The front (anterior) horn is longer than the rear (posterior) horn, averaging 50 cm long
- They have a hooked upper lip which is used for grasping small branches
- Black rhino can move extremely fast. They can run at 55 km/h, change direction surprisingly quickly, and can run right through scrub and bushes.

It is impossible to outrun a black rhino (the speed of Olympic 100m sprinters is 40 km/h)

- The explosive puffing snort of an alarmed black rhino is the sound most clearly associated with this species by people who work with them. An appealing high-pitched whine or squeal is another sound made by this species. A calf uses it to attract its mother's attention, a male may use it to court a female, and all black rhino use it when in pain or distress
- In some areas, and especially in KwaZulu-Natal in South Africa and parts of Kenya, black rhinos have sores called lesions on their chests or flanks. These are caused by a wormlike parasite which infect the skin, transmitted by species of fly unique to rhino
- Black rhinos live up to 30-35 years in the wild and 35-45+ years in captivity

### **Food and foraging**

- Black rhino are browsers (i.e., they eat trees, bushes and shrubs). When they bite off woody plant parts they often leave a clean-angled (pruning-shear type) edge (elephant tend to shred the ends of branches like a toothbrush). This neatly bitten woody material can be clearly seen in their dung
- They eat a wide range of browse species in any given habitat, but while over 100 species may be ingested during a year's foraging, 90% of the diet is commonly made up from fewer than 20 species. Grass is generally only eaten incidentally while foraging for low-growing herbs, but new soft grass leaf growth is voluntarily taken on occasion
- Black rhino are most active during the night-time when most of their foraging and drinking is done. Foraging also occurs in the cooler hours of the morning and afternoon, but wallowing and / or sleeping in a cool, breezy or shady spot is the main activity during the heat of the day

### **Location and habitat**

- Black rhino occur wherever herb and woody browse occurs in sufficient amounts to support a population. This spans a wide range of habitats covering deserts, semi-deserts, wooded savannas, woodlands, forests and even subalpine heathlands
- The densities at which black rhino can exist in the varied habitats vary 100-fold, from one rhino per 100 km<sup>2</sup> in the desert plains of Western Kunene, Namibia to more than one rhino per square kilometre in thicket vegetation
- Currently, only around 3,600 individuals are found in National Parks, Wildlife Reserves and Sanctuaries
- There are four recognized subspecies of black rhino occupying different areas of Africa; a fifth subspecies may still survive in Ethiopia
- The Western black rhino is now only found in northern Cameroon, where just a few scattered animals remain. There may be a few animals in Chad, but these may be seasonal visitors from Cameroon. There are no animals in captivity
- The Eastern black rhino's current stronghold is Kenya with 458 rhinos. Tanzania has an estimated 42 rhinos. Rwanda has only one animal.



- South Africa, at end of 2003, had an estimated 36 animals of predominantly Kenyan origin out-of-range on private land. There are 173 in captivity worldwide as of end May 2004
- Namibia currently conserves 1,238 South-western black rhino as end 2003. South Africa is the only other South-western holding country with 71 rhinos. There are no South-western black rhinos in captivity
- The South-central black rhino is the most numerous of the black rhino subspecies with about 1,770 individuals (end 2003). Its stronghold is South Africa and, to a lesser extent, Zimbabwe, with smaller numbers remaining in Swaziland, and southern Tanzania. A few rhinos have been reintroduced to North Luangwa, Zambia, Botswana and Malawi from South Africa. There are 69 animals in captivity (end of May 2004)

### **Social behaviour, reproduction and population dynamics**

- Adult male black rhino tend to live on their own, except when courting females. Among males, there are dominant and subordinate animals. Subordinate rhino are often subadults or young adults, who must defer to an established territorial bull or risk a fight. Young bulls are often killed or injured in these interactions. Old males which can no longer defend their territories also die in fights, or become confined to a small area until they die
- Adult female black rhino live with their calves until these are old enough to go off to find their own range (usually from 2-4 years). A cow is usually found with her latest calf, or sometimes her last two or three calves, or occasionally on her own if she has not calved for some time
- Male black rhino only become fully sexually mature after seven years old, and only become socially mature some years after this when they establish a set territory, in which they spend most of their time and do most of their feeding. Females settle into their own home range near the time of birth of their first calf. Female home ranges can overlap. The ranges of dominant bulls do not overlap much
- Black rhino advertise their presence in their range to other rhino by spray-urinating and scraping their dung on the ground next to a path; and also by defecation on well developed dung-piles (middens). Male rhino spray-urinate and scrape more than females, and territorial (dominant) males keep more middens in and around their range than other rhino
- Female black rhino will become fertile as they approach their sixth year of age, and most commonly have their first calf when 7-8 years old, but sometimes earlier (5-6 years), sometimes later (8-10+ years). This depends to some extent on body condition and weight
- Black rhino can produce calves at around two-year intervals, but can also take three or more years between calves, depending on the female's age and nutritional status
- Mating in black rhino follows a characteristic pattern with several mountings.



- During this period, the bulls can be extremely aggressive towards other bulls, and this is one of the causes of death of sub-adult male calves which remain with the mother
- Black rhino have a gestation period of about 15.4 months. As the time for parturition approaches, the female will chase her previous calf away, and will find a secluded bushy area in which to give birth
- Black rhino calf weighs 30-40 kg at birth and can walk and suckle within three hours of being born. While the calf is young, the cow tends to keep to thick bush to hide the calf. She may sometimes leave her calf hidden in a bush while she goes to drink at a waterhole or eat in an open area, returning to fetch it later. Black rhino calves stay with their mother for 2-4 years and are then rejected. The older, rejected calves are more vulnerable to predation, aggression by male rhino, and other mishaps. They feel insecure and usually attempt to join another female or occasionally young male, or even a white rhino female who will tolerate their presence. After 3-8 months, the mother may allow her former calves to return to her company. Male calves in particular may not truly leave until 6-7 years' old
- Black rhino have few predators, although lions and hyenas may kill calves and sub-adults. Evidence of predator attacks are sometimes seen in the form of mutilated ears or missing tails. Ox-peckers are often seen with rhino and benefit them by removing ticks and also raising the alarm if there is any danger approaching
- Black rhino react swiftly when disturbed from rest, usually standing up and facing the source of disturbance. Because they have poor eyesight they may not locate the disturbance easily. Being curious animals, they will walk or trot forward to find out what is going on. Black rhino usually run away if they catch a human's scent – a rhino usually only deliberately charges if it sees the human but some aggressive males may actively follow the scent to track and scare the human away
- More male calves are born than female calves, but male mortality rate is higher, leading to adult sex ratios biased towards females. Fighting is the most common cause of adult male deaths. Most females die of old age
- Related rhino tend to maintain long-term bonds and often join up with each other for short periods over their lifetime

### **Under threat**

- During the 19th century, as European influence over land use and trade strengthened, the black rhino, which was the most numerous rhino species with several hundred thousand animals, was hunted relentlessly across most of Africa. By 1970 there were an estimated 65,000 animals left
- Poachers remain the biggest threat to black rhino. However, with strict protection and effective biological management, black rhino numbers are slowly recovering and currently there are approximately 3,600 animals (end of 2003)

For more information on the work of the black rhino EEP, please refer to the CD-ROM, or visit the members' area of the EAZA website ([www.eaza.net](http://www.eaza.net)).

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