

= Black wildebeest =

The black wildebeest or white @-@ tailed gnu (*Connochaetes gnou*) is one of the two closely related wildebeest species . It is a member of the genus *Connochaetes* and family *Bovidae* . It was first described in 1780 by Eberhard August Wilhelm von Zimmermann . The black wildebeest is typically between 170 ? 220 cm (67 ? 87 in) in head @-@ and @-@ body length , and the average weight is 110 ? 180 kg (240 ? 400 lb) . Males stand up to approximately 111 ? 121 cm (44 ? 48 in) at the shoulder , while the height of the females is 106 ? 116 cm (42 ? 46 in) . The black wildebeest is characterised by its white , long , horse @-@ like tail . It also has a dark brown to black coat and long , dark @-@ coloured hair between its forelegs and under its belly .

The black wildebeest is a herbivore , and almost the whole diet consists of grasses . Water is an essential requirement . There are three distinct social groups : the female herds , the bachelor herds and the territorial bulls . They are fast runners , and communicate using a variety of visual and vocal communication . The primary breeding season for the black wildebeest is from February to April . A single calf is usually born after a gestational period of about eight and a half months . The calf remains with its mother until her next calf is born a year later . The black wildebeest inhabits open plains , grasslands and Karoo shrublands .

The natural populations of black wildebeest , endemic to the southern part of Africa , were almost completely exterminated in the 19th century , due to their reputation as pests and the value of their hides and meat . However , the species has been reintroduced widely from captive specimens , both in private areas and nature reserves throughout most of Lesotho , Swaziland , and South Africa . It has also been introduced outside its natural range in Namibia and Kenya .

= = Taxonomy and evolution = =

The scientific name of the black wildebeest is *Connochaetes gnou* . The animal is placed in the genus *Connochaetes* and family *Bovidae* and was first described by the German zoologist , Eberhard August Wilhelm von Zimmermann in 1780 . He based his description on an article written by natural philosopher Jean @-@ Nicolas @-@ Sébastien Allamand in 1776 . The generic name *Connochaetes* derives from the Greek words ?????? , *kónnos* , " beard " , and ?????? , *khaít?* , " flowing hair " , " mane " . The specific name " *gnou* " originates from the Khoikhoi name for these animals , *gnou* . The common name " gnu " is also said to have originated from the Hottentot name *T 'gnu* , which refers to the repeated calls of " ge @-@ nu " by the bull in the mating season . The black wildebeest was first discovered in the northern part of South Africa in the 1800s .

The black wildebeest is currently included in the same genus as the blue wildebeest (*Connochaetes taurinus*) . This has not always been the case and at one time the latter was placed under a separate genus of its own , *Gorgon* . The black wildebeest lineage seems to have diverged from the blue wildebeest in the mid to late Pleistocene , and became a distinct species around a million years ago . This evolution is quite recent on a geologic time scale .

Features necessary for defending a territory such as the horns and broad @-@ based skull of the modern black wildebeest , have been found in their fossil ancestors . The earliest known fossil remains are in sedimentary rock in Cornelia in the Orange Free State and date back about eight hundred thousand years . Fossils have also been reported from the Vaal River deposits , though it is unclear whether or not they are as ancient as those found in Cornelia . Horns of the black wildebeest have been found in sand dunes near Hermanus in South Africa . This is far beyond the recorded range of the species and it has been suggested that these animals may have migrated to that region from the Karoo .

= = = Hybrids = = =

The black wildebeest is known to hybridise with its taxonomically close relative , the blue wildebeest . Male black wildebeest have been reported to mate with female blue wildebeest and vice versa . The differences in social behaviour and habitats have historically prevented interspecific

hybridisation between the species , however hybridisation may occur when they are both confined within the same area . The resulting offspring is usually fertile . A study of these hybrid animals at Spioenkop Dam Nature Reserve in South Africa revealed that many had disadvantageous abnormalities relating to their teeth , horns and the wormian bones in the skull . Another study reported an increase in the size of the hybrid as compared to either of its parents . In some animals the auditory bullae are highly deformed and in others the radius and ulna are fused .

= = Description = =

Black wildebeest are sexually dimorphic , with females being smaller in size and more slender than males . The head @-@ and @-@ body length is typically between 170 and 220 cm (67 and 87 in) . Males reach approximately 111 to 121 cm (44 to 48 in) at the shoulder , while females reach 106 to 116 cm (42 to 46 in) . Males typically weigh 140 to 157 kg (309 to 346 lb) and females 110 to 122 kg (243 to 269 lb) . A distinguishing feature in both sexes is the tail , which is long and similar to that of a horse . Its bright @-@ white colour gives this animal the vernacular name of " white @-@ tailed gnu " , and also distinguishes it from the blue wildebeest , which has a black tail . The length of the tail ranges from 80 to 100 cm (31 to 39 in) .

The black wildebeest has a dark brown or black coat which is slightly paler in summer and coarser and shaggier in the winter . Calves are born with shaggy , fawn @-@ coloured fur . Males are darker than females . They have bushy and dark @-@ tipped manes that , as in the blue wildebeest , stick up from the back of the neck . The hairs which compose this are white or cream @-@ coloured with dark tips . On its muzzle and under its jaw it has black bristly hair . It also has long , dark @-@ coloured hair between its forelegs and under its belly . Other physical features include a thick neck , a plain back , and rather small and beady eyes .

Both sexes have strong horns that curve forward , resembling hooks and are up to 78 cm (31 in) long . The horns have a broad base in mature males , and are flattened to form a protective shield . In females , the horns are both shorter and narrower . They become fully developed in females in the third year , while it is not before the age of four or five that horns are fully grown in males . The black wildebeest normally has 13 thoracic vertebrae , though specimens with 14 have been reported , and this species shows a tendency for the thoracic region to become elongated . There are scent glands that secrete a glutinous substance in front of the eyes , under the hair tufts and on the forefeet . Females have two nipples . Apart from the difference in the appearance of the tail , the two species of wildebeest also differ in size and colour , with the black being smaller and darker than the blue .

The black wildebeest can maintain its body temperature within a small range in spite of large fluctuations in external temperatures . It shows well @-@ developed orientation behaviour towards solar radiation which helps it thrive in hot , and often shadeless , habitats . The erythrocyte count is high at birth and increases till the age of two to three months , while in contrast , the leucocyte count is low at birth and falls throughout the animal 's life . The neutrophil count is high at all ages . The haematocrit and haemoglobin content decreases till twenty to thirty days after birth . There is a peak in the content of all these haemological parameters at the age of two to three months , after which the readings gradually decline , reaching their lowest values in the oldest individuals . The presence of fast @-@ twitch fibres and the ability of the muscles to use large amounts of oxygen help explain the rapid running speed of the black wildebeest and its high resistance to fatigue . Individuals may live for about twenty years .

= = Diseases and parasites = =

The black wildebeest is particularly susceptible to anthrax , and rare and widely scattered outbreaks have been recorded and have proved deadly . Ataxia related to myelopathy and low copper concentrations in the liver have also been seen in the black wildebeest . Heartwater (Ehrlichia ruminantium) is a tick @-@ borne rickettsial disease that affects the black wildebeest and , as the blue wildebeest is fatally affected by rinderpest and foot @-@ and @-@ mouth disease , it is

believed that the black wildebeest is also likely to be susceptible to these . Malignant catarrhal fever is a fatal disease of domestic cattle caused by a gammaherpesvirus . It seems that , like the blue wildebeest , the black wildebeest acts as a reservoir for the virus and that all animals are carriers , being persistently infected but showing no symptoms . The virus is transmitted from mother to calf during the gestation period or soon after birth .

Black wildebeest act as hosts to a number of external and internal parasites . A study of the animal in Karroid Mountainveld (Eastern Cape Province , South Africa) revealed the presence of all the larval stages of the nasal bot flies *Oestrus variolosus* and *Gedoelestia hässleri* . The first instar larvae of *G. hässleri* were found in large numbers on the dura mater of wildebeest calves , specially between June and August , and these later migrated to the nasal passages . Repeated outbreaks of mange (scab) have led to large @-@ scale extinctions . The first study of the protozoa in blue and black wildebeest showed the presence of 23 protozoan species in the rumen , with *Diplodinium bubalidis* and *Ostracodinium damaliscus* common in all the animals .

= = Ecology and behaviour = =

Black wildebeest are mainly active during the early morning and late afternoon preferring to rest during the hottest part of the day . The animals can run at speeds of 80 km / h (50 mph) . When a person approaches a herd to within a few hundred metres , the wildebeest snort and run a short distance before stopping and looking back , repeating this behaviour if further approached . They communicate with each other using pheromones detected by flehmen and several forms of vocal communication . One of these is a metallic snort or an echoing " hick " , that can be heard up to 1500 metres (1 mile) away . They are preyed on by animals like lion , spotted hyena , Cape hunting dog , leopard , cheetah and crocodile . Of these the calves are targeted mainly by the hyenas , while lions attack the adults .

The black wildebeest is a gregarious animal with a complex social structure comprising three distinct groups : firstly , the female herds , consisting of adult females and their young ; secondly , the bachelor herds , consisting only of yearlings and older males ; thirdly , the territorial bulls . The number of females per herd is variable , generally ranging from 14 to 32 , but is highest in the densest populations and also increases with forage density . There is a strong attachment among members of the female herd , many of whom are related to each other . Large herds often get divided into smaller groups . While small calves stay with their mothers , the older ones form groups of their own within the herd . These herds have a social hierarchy , and the females are rather aggressive towards others trying to join the group . Young males are generally repelled by their mothers before the calving season starts . Separation of a young calf from its mother can be a major cause of calf mortality . While some male yearlings stay within the female herd , the others join a bachelor herd . These are usually loose associations and , unlike the female herds , the individuals are not much attached to each other . Another difference between the female and bachelor herds is the lesser aggression on the part of the males . These bachelor herds move widely in the available habitat and act as a refuge for males that have been unsuccessful as territorial bulls , and also as a reserve for future breeding males .

Mature bulls , generally more than four years old , set up their own territories through which female herds often pass . These territories are maintained throughout the year , with animals usually separated by a distance of about 100 ? 400 m (330 ? 1 @ , @ 310 ft) , but this can vary according to the quality of the habitat . In favourable conditions , this distance is as little as 9 m (30 ft) , but can be as large as 1 @ , @ 600 m (5 @ , @ 200 ft) in poor habitat . Each bull has a patch of ground in the centre of his territory in which he regularly drops dung , and in which he performs acts of display . These include urinating , scraping , pawing and rolling on the ground and thumping it with his horns - all of which demonstrate his prowess to other bulls . An encounter between two bulls involves elaborate rituals . Estes coined the term " Challenge Ritual " to describe this behaviour for the blue wildebeest , but this is also applicable to the black wildebeest , owing to the close similarity in the behaviour in both species . The bulls approach each other with their heads lowered , resembling a grazing position (sometimes actually grazing) . This is usually followed by movements like standing

in a reverse @-@ parallel position , in which one male urinates and the opponent smells and performs flehmen , after which they may reverse the procedure . During this ritual or afterwards the two can toss their horns at each other , circle one another , or even look away . Then begins the fight , which may be of low intensity (consisting of interlocking the horns and pushing each other in a standing position) or high intensity (consisting of their dropping to their knees and straining against each other powerfully , trying to remain in contact while their foreheads are nearly touching the ground) . Threat displays like shaking the head may also take place .

= = Diet = =

Black wildebeest are predominantly grazers , preferring short grasses but also feeding on other herbs and shrubs , especially when grass is scarce . Shrubs can comprise as much as 37 % of the diet but grasses normally forms more than 90 % . Water is essential , though they can exist without drinking water everyday . The herds graze either in line or in loose groups , usually walking in single file when moving about . They are often accompanied by cattle egrets , which pick out and consume the insects hidden in their coats or disturbed by their movements .

Before the arrival of Europeans in the area , wildebeest used to roam widely , probably in relation to the arrival of the rains and the availability of good forage . They never made such extensive migrations as the blue wildebeest but at one time , they used to cross the Drakensberg Range , moving eastwards in autumn , searching for good pastures . Then they returned to the highvelds in the spring and moved towards the west , where sweet potato and Karoo vegetation were abundant . They also moved from north to south as the sourgrass found north of the Vaal River matured and became unpalatable , the wildebeest only consuming young shoots of sourgrass . Nowadays , almost all black wildebeest are in reserves or on farms and the extent of their movements is limited .

In a study of the feeding activities of a number of female black wildebeest living in a shadeless habitat , it was found that they fed mostly at night . They were observed at regular intervals over a period of one year and it was observed that with an increase in temperature , the number of wildebeest feeding at night also increased . During cool weather they lay down to rest but in hotter conditions they rested while standing up .

= = Reproduction = =

Male black wildebeest reach sexual maturity at the age of three years but may mature at a younger age in captivity . Females first come into season and breed as yearlings or as two @-@ year @-@ olds . They breed only once in a year .

A dominant male black wildebeest will have a harem of females and will not allow other males to mate with them . The breeding season occurs at the end of the rainy season and lasts a few weeks between February and April . When one of his females comes into oestrus the male concentrates on her and mates with her several times . Sexual behaviour by the male at this time includes stretching low , ears down , sniffing of the female 's vulva , performing ritual urination and touching his chin to the female 's rump . At the same time , the female keeps her tail upwards (sometimes vertically) or swishes it across the face of the male . The pair usually separates after copulation , but the female occasionally follows her mate afterwards , touching his rump with her snout . During the breeding season , the male loses condition as he spends little time grazing . Males are known to mount other males .

The gestational period lasts for about eight and a half months , after which a single calf is born . Females in labour do not move away from the female herd and repeatedly lie down and get up again . Births normally take place in areas with short grass when the cow is in the lying position . She stands up immediately afterwards which causes the umbilical cord to break , vigorously licks the calf and chews on the afterbirth . In spite of regional variations , around 80 % of the females give birth to their calves within a period of two to three weeks after the onset of the rainy season - from mid @-@ November to the end of December . Seasonal breeding has also been reported among

wildebeest in captivity in European zoos . Twin births have not been reported .

The calf has a tawny , shaggy coat and weighs about 11 kilograms (24 lb) . By the end of the fourth week , the four incisors have fully emerged and about the same time , two knob @-@ like structures , the hornbuds , appear on the head . These later develop into horns which reach a length of 200 ? 250 mm (8 ? 10 in) by the fifth month and are well developed by the eighth month . The calf is able to stand and run shortly after birth , a period of great danger for animals in the wild . It is fed by its lactating mother for six to eight months , begins nibbling on grass blades at four weeks and remains with her until her next calf is born a year later .

= = Distribution and habitat = =

The black wildebeest is native to southern Africa . Its historical range included South Africa , Swaziland and Lesotho , but in the latter two countries it was hunted to extinction in the 19th century . It has now been reintroduced to them and also introduced to Namibia where it has become well established .

The black wildebeest inhabits open plains , grasslands and Karoo shrublands in both steep mountainous regions and lower undulating hills . The altitudes in these areas varies from 1 @,@ 350 ? 2 @,@ 150 m (4 @,@ 430 ? 7 @,@ 050 ft) . The herds are often migratory or nomadic , otherwise they may have regular home ranges of 1 km² (11 @,@ 000 @,@ 000 sq ft) . Female herds roam in home ranges around 250 acres (100 ha ; 0 @.@ 39 sq mi) in size . In the past , black wildebeest occurred in the highveld temperate grasslands during the dry winter season and the arid Karoo region during the rains . However , as a result of massive hunting of the animal for its hide , they vanished from their historical range , and are now largely limited to game farms and protected reserves in southern Africa . In most reserves , the black wildebeest shares its habitat with the blesbok and the springbok .

= = Threats and conservation = =

Where it lives alongside the blue wildebeest , the two species can hybridise , and this is regarded as a potential threat to the maintenance of the species . The black wildebeest was once very numerous and was present in southern Africa in vast herds but by the end of the nineteenth century , it had nearly been hunted to extinction and fewer than 600 animals remained . A small number of individuals was still present in game reserves and at zoos and it is from these that the population was rescued .

There are now believed to be more than 18 @,@ 000 individuals , 7 @,@ 000 of which are in Namibia , outside its natural range , and where it is farmed . Around 80 % of the wildebeest occur in private areas , while the other 20 % are confined in protected areas . The population is now trending upward (particularly on private land) and for this reason the International Union for Conservation of Nature (IUCN) , in its Red List of Threatened Species , rates the black wildebeest as being of " Least Concern " . Its introduction into Namibia has been a success and numbers have increased substantially there from 150 in 1982 to 7 @,@ 000 in 1992 .

= = Uses and interaction with humans = =

The black wildebeest is depicted on the coat of arms of the Province of Natal in South Africa . Over the years the South African authorities have issued stamps displaying the animal and the South African Mint has struck a five rand coin with a prancing black wildebeest .

Though they are not present in their natural habitat in such large numbers today , black wildebeest were at one time the main herbivores in the ecosystem and a main prey item for large predators such as the lion . Nowadays they are economically important for human beings as they are a major tourist attraction as well as providing animal products such as leather and meat . The hide makes good quality leather and the flesh is coarse , dry and rather hard . Wildebeest meat is dried to make biltong , an important part of South African cuisine . The meat of females is more tender than that of

males , and is at its best during the autumn season . The wildebeest can provide ten times as much meat as the Thomson 's gazelle . The silky , flowing tail is used to make fly @-@ whisks or " chowries " .

However , black wildebeest can also affect human beings negatively . Wild individuals can be competitors of commercial livestock , and can transmit fatal diseases like rinderpest and cause epidemics among animals , particularly domestic cattle . They can also spread ticks , lungworms , tapeworms , flies and paramphistome flukes .