

= Blue wildebeest =

The blue wildebeest ( *Connochaetes taurinus* ) , also called the common wildebeest , white @-@ bearded wildebeest or brindled gnu , is a large antelope and one of the two species of wildebeest . It is placed in the genus *Connochaetes* and family Bovidae and has a close taxonomic relationship with the black wildebeest . The blue wildebeest is known to have five subspecies . This broad @-@ shouldered antelope has a muscular , front @-@ heavy appearance , with a distinctive robust muzzle . Young blue wildebeest are born tawny brown , and begin to take on their adult colouration at the age of two months . The adults ' hues range from a deep slate or bluish gray to light gray or even grayish @-@ brown . Both sexes possess a pair of large curved horns .

The blue wildebeest is a herbivore , feeding primarily on the short grasses . It forms herds which move about in loose aggregations , the animals being fast runners and extremely wary . The mating season begins at the end of the rainy season and a single calf is usually born after a gestational period of about eight and a half months . The calf remains with its mother for eight months , after which time it joins a juvenile herd . Blue wildebeest are found in short grass plains bordering bush @-@ covered acacia savannas in southern and eastern Africa , thriving in areas that are neither too wet nor too arid . Each year , some East African populations of blue wildebeest take part in a long @-@ distance migration , seemingly timed to coincide with local patterns of rainfall and grass growth .

The blue wildebeest is native to Angola , Botswana , Kenya , Mozambique , South Africa , Swaziland , Tanzania , Zambia and Zimbabwe . Today it is extinct in Malawi , but has been successfully reintroduced in Namibia . The southern limit of the blue wildebeest range is the Orange River , while the western limit is bounded by Lake Victoria and Mt Kenya . The blue wildebeest is widespread and is being introduced into private game farms , reserves and conservancies . For this reason , the International Union for Conservation of Nature and Natural Resources ( IUCN ) rates the blue wildebeest as being of Least Concern . The population has been estimated to be around one and a half million and the population trend is stable .

= = Taxonomy and naming = =

The blue wildebeest was first described by English naturalist William John Burchell in 1823 and he gave it the scientific name *Connochaetes taurinus* . It shares the genus *Connochaetes* with the black wildebeest ( *C. gnou* ) , and is placed in the family Bovidae , ruminant animals with cloven hooves . The generic name *Connochaetes* derives from the Greek words ?????? , *kónnos* , " beard " , and ?????? , *khaít* , " flowing hair " , " mane " . The specific name *taurinus* originates from the Greek word *tauros* , which means a bull or bullock . The common name " blue wildebeest " refers to the conspicuous , silvery @-@ blue sheen of the coat , while the alternative name " gnu " originates from the name for these animals used by the Khokloi people , a native pastoralist tribe of southwestern Africa .

Though the blue and black wildebeest are currently classified in the same genus , the former was previously placed in a separate genus , *Gorgon* . In a study of the mitotic chromosomes and mtDNA which was undertaken to understand more of the evolutionary relationships between the two species , it was found that the two had a close phylogenetic relationship and had diverged about a million years ago .

= = = Subspecies = = =

*C. taurinus* has five subspecies :

*C. t. albojubatus* ( Thomas , 1912 ; Eastern white @-@ bearded wildebeest ) , is found in the Gregory Rift Valley ( south of the equator ) . Its range extends from northern Tanzania to central Kenya .

*C. t. cooksoni* ( Blaine , 1914 ; Cookson 's wildebeest ) , is restricted to the Luangwa Valley in Zambia . Sometimes these animals may wander into the plateau region of central Malawi .

*C. t. johnstoni* ( Sclater , 1896 ; Nyassaland wildebeest ) , occurs from Mozambique ( north of the Zambezi river ) to east @-@ central Tanzania . This subspecies is now extinct in Malawi .

*C. t. mearnsi* ( Heller , 1913 ; Western white @-@ bearded wildebeest ) , is found in northern Tanzania and southern Kenya . Its range extends from the west of the Gregory Rift Valley to Speke Bay on Lake Victoria .

*C. t. taurinus* ( Burchell , 1823 ; Blue wildebeest , common wildebeest or brindled gnu ) is found in southern Africa . Its range extends from Namibia and South Africa to Mozambique ( north of the Orange River ) and from southwestern Zambia ( south of the Zambezi river ) to southern Angola .

== = Hybrids == =

The blue wildebeest is known to hybridise with the black wildebeest . The differences in social behaviour and habitats have historically prevented interspecific hybridisation , however it may occur when both species are confined within the same area , and the offspring is usually fertile . A study of these hybrid animals at Spioenkop Dam Nature Reserve in South Africa revealed that many had congenital abnormalities relating to their teeth , horns and the Wormian bones of the skull . Another study reported an increase in the size of the hybrid as compared to either of its parents . In some hybrid animals the auditory bullae are highly deformed and in others the radius and ulna are fused .

== Genetics and evolution ==

The diploid number of chromosomes in the blue wildebeest is 58 . Chromosomes were studied in a male and a female wildebeest . In the female , all except a pair of very large submetacentric chromosomes were found to be acrocentric . Metaphases were studied in the male 's chromosomes , and very large submetacentric chromosomes were found there as well , similar to those in the female both in size and morphology. the rest were acrocentric . The X chromosome is a large acrocentric while the Y chromosome a minute one .

This species of wildebeest seems to have evolved around 2 @.@ 5 million years ago . The black wildebeest is believed to have diverged from the blue wildebeest to become a distinct species around a million years ago , in the mid to late Pleistocene . Fossil evidence suggests that the blue wildebeest were quite common in the Cradle of Humankind in the past . Apart from eastern Africa , fossils are commonly found in Elandsfontein , Cornelia and Florisbad .

== Description ==

The blue wildebeest exhibits sexual dimorphism , with males being larger and darker than females . The blue wildebeest is typically between 170 ? 240 cm ( 67 ? 94 in ) in head @-@ and @-@ body length . The average height of the species is 115 ? 145 cm ( 45 ? 57 in ) . While males weigh up to 290 kg ( 640 lb ) , females seldom exceed 260 kg ( 570 lb ) . A characteristic feature is the long , black tail , which is around 60 ? 100 cm ( 24 ? 39 in ) in length . All features and markings of this species are bilaterally symmetrical for both sexes . The average life span is 20 years in the wild , and 21 years in captivity . The oldest known captive individual lived for 24 @.@ 3 years .

== = Colouration == =

This broad @-@ shouldered antelope has a muscular , front @-@ heavy appearance , with a distinctive robust muzzle . Young blue wildebeest are born tawny brown , and begin to take on their adult colouration at the age of two months . The adults ' hues range from a deep slate or bluish gray to light gray or even grayish @-@ brown . The back and flanks are slightly lighter than the ventral surface and underparts . Dark brown vertical stripes mark the area between the neck and the back of the ribcage , thus giving it the name " brindled gnu " . The manes of both sexes appear long , stiff , thick and jet black , the same colour as the tail and face as well . While the manes of the western and eastern white @-@ bearded wildebeest are lank , those of the Nyassaland wildebeest and

common wildebeest stick up . Scent glands , which secrete a clear oil , are present in the forefeet and are larger in males than females .

In terms of skull length , the smallest subspecies of the blue wildebeest is the western white @-@ bearded wildebeest . It is also the darkest subspecies , the eastern white @-@ bearded wildebeest being the lightest race . Both these subspecies possess a creamy white beard , whereas the beard is black in both the Nyassaland wildebeest and the common wildebeest . The longest muzzles are found in the Nyassaland wildebeest , and the shortest in female western white @-@ bearded wildebeest .

#### = = = Horns = = =

Both sexes possess a pair of large horns which are shaped like parentheses . These extend outward to the side , and then curve upward and inward . In the males , the horns can be 83 cm ( 33 in ) long , while the horns of the females are 30 ? 40 cm ( 12 ? 16 in ) long . Despite being an antelope , the blue wildebeest possesses various bovine characteristics . For instance , the horns resemble those of the female African buffalo . Further , the heavy build and disproportionately large forequarters give it a bovine appearance .

#### = = = Diseases and parasites = = =

The blue wildebeest is susceptible to foot @-@ and @-@ mouth disease , anthrax , sarcoptic mange and hoof gangrene . The herpesvirus was first isolated from the blue wildebeest in 1960 by veterinary scientist Walter Plowright . Although the causes of death will vary from year to year , in one drought in Botswana , young calves and aged females were the most likely to die . On another occasion it was estimated that 47 % of deaths were caused by disease , 37 % were due to predation and the remainder were the result of accidents .

The animal can be host to a number of different parasites . In one study , blue wildebeest were found to be hosts to thirteen species of nematode , one trematode , larvae of five oestrid flies , three species of lice , seven ixodid tick species , one mite and the larvae of a tongue worm . Of these , most were more prevalent at some times of the year than others . Generally , the larvae of *Gedoelestica* and *Oestrus* occur in the nasal passages and respiratory cavities of the blue wildebeest , and sometimes migrate to the brain . Compared to some other bovids , blue wildebeest are resistant to infestations by several species of tick .

#### = = Ecology and behaviour = =

The blue wildebeest is mostly active during the morning and the late afternoon , with the hottest hours of the day being spent in rest . These extremely agile and wary animals can run at speeds of up to 80 km / h ( 50 mph ) , waving their tails and tossing their heads . An analysis of the activity of blue wildebeest at the Serengeti National Park showed that the animals devoted over half of their total time to rest , 33 % to grazing , 12 % to moving about ( mostly walking ) and a little to social interactions . However , there were variations among different age and sex groups .

The wildebeest usually rest close to others of their kind and move about in loose aggregations . Males form bachelor herds , and these can be distinguished from juvenile groups by the lower amount of activity and the spacing between the animals . Around 90 % of the male calves join the bachelor herds before the next mating season . Bulls become territorial at the age of four or five years , and become very noisy ( most notably in the western white @-@ bearded wildebeest ) and active . The bulls tolerate being close to each other and a square kilometre of plain can accommodate 270 bulls . Most territories are of a temporary nature and fewer than a half of the male population hold permanent territories . In general , blue wildebeest rest in groups of a few to thousands at night , with a minimum distance of 1 ? 2 m ( 3 @.@ 3 ? 6 @.@ 6 ft ) between individuals ( though mothers and calves may remain in contact ) . They are a major prey item for lions , hyenas , and crocodiles .

Bulls mark the boundaries of their territories with heaps of dung and with secretions from their scent glands . The territories are advertised by their behaviour as well as by the physical marking . Body language used by a territorial male includes standing tall with an erect posture , profuse ground pawing and horning , frequent defecation , rolling and bellowing , the sound " ga @-@ noo " being produced . When competing over territory , males grunt loudly , paw the ground , make thrusting motion with their horns , and perform other displays of aggression .

#### = = = Diet = = =

The blue wildebeest is a herbivore , feeding primarily on the short grasses which commonly grow on light , and alkaline soils that are found in savanna grasslands and on plains . The animal 's broad mouth is adapted for eating large quantities of short grass and it feeds both during the day and night . When grass is scarce , it will also eat the foliage of shrubs and trees . Wildebeest commonly associate with plains zebras as the latter eat the upper , less nutritious grass canopy , exposing the lower , greener material which the wildebeest prefer . Whenever possible , the wildebeest likes to drink twice daily and due to its regular requirement for water , it usually inhabits moist grasslands and areas with available water sources . Despite this , it can also survive in the arid Kalahari desert , where it obtains sufficient water from melons and water @-@ storing roots and tubers .

In a study of the dietary habits of the wildebeest , the animals were found to be feeding on the three dominant grasses of the area , namely : Themeda triandra , Digitaria macroblephara and Penisetum mezianum . The time spent grazing increased by about 100 % during the dry season . Though the choice of diet remained the same in both the dry and the wet season , the animals were more selective during the latter .

#### = = = Reproduction = = =

Male blue wildebeest become sexually mature at about two years of age while females can conceive at sixteen months if adequately nourished . Nevertheless , most females do not start to breed until a year later . The mating season , which lasts for about three weeks , coincides with the end of the rainy season . This means that the animals are in good condition , having been feeding on highly nutritious new grass growth , and the conception rate is often as high as 95 % . The mating season , or rut , typically begins on the night of a full moon , suggesting that the lunar cycle influences breeding . At this time , testosterone production peaks in males , resulting in increased calling and territorial behaviour . The activities of these sexually excited males may also stimulate female to come into estrus .

As they stake out their territories and compete for females , males exhibit rivalry . When they clash , they face up to each other with bent knees and exchange horn thrusts . Elaborate individual displays are made during their rivalry and they may bellow , snort and dig their horns into the ground . Once dominance has been established , each male attempts to lure the female into his domain . During courtship , urination and low @-@ stretch are common activities and the male soon attempts to mount the female . A receptive female holds her tail to one side and stands still while copulation takes place . Matings may be repeated several times and may take place twice or more times within a minute . The male neither eats nor rests when a female is present in his territory and during this time , the female keeps close to the male , often rubbing her head on his torso and sniffing his penis . While in season , a female may visit several territories and mate with several different males .

The gestation period is about eight and a half months and between 80 and 90 % of the calves are born within a three @-@ week time period . Female wildebeest give birth in the middle of a herd rather than alone , and typically in the middle of the day . This allows time for the newborn to become steady on its feet before night falls and the predators become more active . Calves weigh about 19 kg ( 42 lb ) at birth , and can usually stand on their own within a few minutes of birth . To escape predation , calves remain close to their mothers for a significant time , and may continue suckling until the next year 's calf is nearly due . Some calves leave their mother at about eight months and form herds with other juveniles . In large female herds , 80 % of the wildebeest offspring

survive the first month , compared to a 50 % survival rate in smaller herds .

#### = = Distribution and habitat = =

The blue wildebeest is native to Kenya , Tanzania , Botswana , Zambia , Zimbabwe , Mozambique , South Africa , Swaziland and Angola . Today it is extinct in Malawi , but has been successfully reintroduced into Namibia .

Blue wildebeest are mainly found in short grass plains bordering bush @-@ covered acacia savannas in southern and eastern Africa , thriving in areas that are neither too wet nor too arid . They can be found in habitats that vary from overgrazed areas with dense bush to open woodland floodplains . Trees such as *Brachystegia* and *Combretum* are common in these areas . Blue wildebeest can tolerate arid regions as long as a potable water supply is available , normally within about 15 ? 25 km ( 9 @. @ 3 ? 15 @. @ 5 mi ) distance . The southern limit of the blue wildebeest stops at the Orange River , while the western limit is bounded by Lake Victoria and Mt Kenya . The range does not include montane or temperate grasslands . These wildebeest are rarely found at altitudes in excess of 1 @, @ 800 ? 2 @, @ 100 m ( 5 @, @ 900 ? 6 @, @ 900 ft ) . With the exception of a small population of Cookson 's wildebeest that occurs in the Luangwa Valley ( Zambia ) , the wildebeest is absent in the wetter parts of the southern savanna country , and particularly is not present in miombo woodlands .

Each year , some East African populations of blue wildebeest take part in a long @-@ distance migration , seemingly timed to coincide with the annual pattern of rainfall and grass growth . The timing of the migration in both directions can vary considerably from year to year . At the end of the rainy season , they migrate to dry @-@ season areas in response to a lack of drinking water . When the rainy season begins again a few months later , the animals trek back to their wet @-@ season range .

#### = = Threats and conservation = =

The blue wildebeest is preyed on by lions , leopards , African wild dogs and hyenas and predation is the main cause of death . They are also prone to outbreaks of disease which may also lead to a decline in numbers . Major human @-@ related factors affecting populations include large @-@ scale deforestation , the drying up of water sources , the expansion of settlements and poaching . Diseases of domestic cattle such as sleeping sickness can be transmitted to the animals and take their toll . The erection of fences that interrupt traditional migratory routes between wet and dry @-@ season ranges have resulted in mass death events when the animals become cut off from water sources and the areas of better grazing they are seeking during droughts . A study of the factors influencing wildebeest populations in the Maasai Mara ecosystem revealed that the populations had undergone a drastic decline of around 80 % from about 119 @, @ 000 individuals in 1977 to around 22 @, @ 000 twenty years later . The major cause of this was thought to be the expansion of agriculture , which led to the loss of wet season grazing and the traditional calving and breeding ranges .

The total number of blue wildebeest is estimated to be around 1 @, @ 550 @, @ 000 . The population trend overall is stable and the numbers in the Serengeti National Park ( Tanzania ) have increased to about 1 @, @ 300 @, @ 000 . The population density ranges from 0 @. @ 15 / km<sup>2</sup> in Hwange and Etosha National Parks to 35 / km<sup>2</sup> in Ngorongoro Crater and Serengeti National Park where they are most plentiful . Blue wildebeest have also been introduced into a number of private game farms , reserves and conservancy areas . For these reasons , the International Union for Conservation of Nature ( IUCN ) rates the blue wildebeest as being of Least Concern . However , the numbers of the eastern white @-@ bearded wildebeest ( *C. t. albojubatus* ) have seen a steep decline in numbers to a current level of probably 6 @, @ 000 to 8 @, @ 000 animals and this is causing some concern .

#### = = Relationship with humans = =

As one of the major herbivores of southern and eastern Africa , the blue wildebeest plays an important role in the ecosystem and is a main prey item for large predators such as the lion . It is one of the animals that draws tourists to the area to observe big game and as such it is of major economic importance to the region . Traditionally blue wildebeest have been hunted for their hides and meat , the skin making good quality leather though the flesh is coarse , dry and rather hard .

However , blue wildebeest can also affect human beings negatively . They can compete with domestic livestock for grazing and water and can transmit fatal diseases like rinderpest to cattle and cause epidemics among animals . They can also spread ticks , lungworms , tapeworms , flies and paramphistome flukes .

An ancient carved slab of slate depicting an animal very similar to the blue wildebeest has been discovered . Dating back to around 3000 BC , it was found in Hierakonopolis ( Nekhen ) , which used to be the religious and political capital of Upper Egypt at that time . This may be evidence that the animal used to occur in North Africa and was associated with the ancient Egyptians .