

= Waterbuck =

The waterbuck (*Kobus ellipsiprymnus*) is a large antelope found widely in sub-Saharan Africa . It is placed in the genus *Kobus* of the family Bovidae . It was first described by Irish naturalist William Ogilby in 1833 . The thirteen subspecies are grouped under two varieties : the common or ellipsen waterbuck and the defassa waterbuck . The head and body length is typically between 177 ? 235 cm (70 ? 93 in) and the average height is between 120 and 136 cm (47 and 54 in) . A sexually dimorphic antelope , males are taller as well as heavier than females . Males reach approximately 127 cm (50 in) at the shoulder , while females reach 119 cm (47 in) . Males typically weigh 198 ? 262 kg (437 ? 578 lb) and females 161 ? 214 kg (355 ? 472 lb) . The coat colour varies from brown to grey . The long , spiral horns , present only on males , curve backward , then forward and are 55 ? 99 cm (22 ? 39 in) long .

Waterbuck are rather sedentary in nature . A gregarious animal , the waterbuck may form herds consisting of six to 30 individuals . These groups are either nursery herds with females and their offspring or bachelor herds . Males start showing territorial behaviour from the age of five years , but are most dominant from the age of six to nine . The waterbuck can not tolerate dehydration in hot weather , and thus inhabits areas close to sources of water . Predominantly a grazer , the waterbuck is mostly found on grassland . In equatorial regions , breeding takes place throughout the year , but births are at their peak in the rainy season . The gestational period lasts for seven to eight months , followed by the birth of a single calf .

Waterbuck inhabit scrub and savanna areas along rivers , lakes and valleys . Due to their requirement for grasslands as well as water , the waterbuck have a sparse ecotone distribution . The IUCN lists the waterbuck as being of Least Concern . More specifically , the common waterbuck is listed as of Least Concern while the defassa waterbuck is Near Threatened . The population trend for both the common and defassa waterbuck is downwards , especially that of the latter , with large populations being eliminated from certain habitats because of hunting and human disturbance .

= = Taxonomy and etymology = =

The scientific name of the waterbuck is *Kobus ellipsiprymnus* . The waterbuck is one of the six species of the genus *Kobus* and belongs to the family Bovidae . It was first described by Irish naturalist William Ogilby in 1833 . The generic name *Kobus* is a New Latin word , originating from an African name , koba . The specific name *ellipsiprymnus* refers to the white elliptical ring on the rump , from the Greek *ellipes* (ellipse) and *prymnos* (prumnos , hind part) . The animal acquired the vernacular name " waterbuck " due to its heavy dependence on water as compared to other antelopes and its ability to enter into water for defence .

The type specimen of the waterbuck was collected by South African hunter and explorer Andrew Steedman in 1832 . This specimen was named *Antilope ellipsiprymnus* by Ogilby in 1833 . This species was transferred to the genus *Kobus* in 1840 , becoming *K. ellipsiprymnus* . It is usually known as the common waterbuck . In 1835 , German naturalist Eduard Rüppell collected another specimen , which differed from Steedman 's specimen in having a prominent white ring on its rump . Considering it a separate species , Rüppell gave it the Amharic name " defassa " waterbuck and scientific name *Antilope defassa* . Modern taxonomists , however , consider the common waterbuck and defassa waterbuck a single species , *K. ellipsiprymnus* , given the large number of instances of hybridisation between the two . Interbreeding between the two takes place in the Nairobi National Park owing to extensive overlapping of habitats .

= = = Evolution = = =

Not many fossils of the waterbuck have been found . Fossils were scarce in the Cradle of Humankind , occurring only in a few pockets of the Swartkrans . On the basis of Valerius Geist 's theories about the relation of social evolution and dispersal in ungulates during the Pleistocene , the ancestral home of the waterbuck is considered to be the eastern coast of Africa - with the Horn of

Africa to the north and the East African Rift Valley to the west .

= = = Subspecies = = =

37 subspecies of the waterbuck had been initially recognised on the basis of coat colour . They were classified into two groups : the Ellipsen waterbuck group and the Defassa waterbuck group . Owing to the large number of variations in the coat colour in the Defassa waterbuck group , as many as 29 subspecies were included in it ; the Ellipsen waterbuck group consisted of eight subspecies . In 1971 , however , the number of subspecies was reduced to thirteen (four for the Ellipsen waterbuck group and nine for the Defassa waterbuck group) . Though they occur in Zambia as well , their ranges are separated by relief features or by the Muchinga escarpment . The subspecies have been listed below (along with notes about the former subspecies which were recombined into a single subspecies) :

K. e. ellipsiprymnus (Ellipsen waterbuck , common or Ringed waterbuck) group : Found in the Webi Shebeli river valley in southeastern Ethiopia ; the Juba and Webi Shebeli river valleys in Somalia ; essentially east of the Rift Valley in Kenya and Tanzania ; east of the Rift Valley in the middle Zambezi and Luangwa valleys in Zambia ; Malawi ; Mozambique ; east of the Kwando River in the Caprivi Strip of Namibia ; eastern and northern Botswana ; Zimbabwe ; and eastern and northern Transvaal in South Africa . Its distribution slightly overlaps that of the typical defassa along the Rift Valley in Kenya and Tanzania , and that of the Crawshay defassa in the Rift Valley in Zambia .

Includes the following four subspecies :

K. e. ellipsiprymnus Ogilby , 1833 (southern Africa)

K. e. kondensis Matschie , 1911 (including *K. e. lipuwa* , *K. e. kulu*) (southern Tanzania)

K. e. pallidus Matschie , 1911 (Webi Shebeli drainage in Ethiopia , and Juba and Webi Shebeli drainages in Somalia)

K. e. thikae Matschie , 1910 (including *K. e. kuru* and *K. e. canescens*) (southern and eastern Kenya and northeastern Tanzania)

K. e. defassa (Defassa waterbuck) group : Found west of the Gregory Rift , ranging from Ethiopia west to Senegal and south to Zambia .

Includes the following subspecies :

Angolan Defassa Waterbuck (*K. e. penricei*) W. Rothschild , 1895 Can be found in Southern Gabon , southern Congo (Brazzaville) , Angola , southwestern Congo (Kinshasa) , and marginally in Namibia along the Okavango River .

Crawshay Defassa Waterbuck or Rhodesian defassa waterbuck (*K. e. crawshayi*) P. L. Sclater , 1894 (including *K. e. uwendensis* , *K. e. frommian* and *K. e. münzneri*) Can be found in Zambia , from the upper Zambezi River eastward to the Muchinga escarpment (which is a southern extension of the Great Rift Valley) . Also in adjoining parts of Katanga Province in Congo (Kinshasa) .

East African Defassa Waterbuck

K. e. adolfi @-@ *friderici* Matschie , 1906 (including *K. e. fulvifrons* , *K. e. nzoiae* and *K. e. raineyi*) (northeastern Tanzania west of the Rift Wall , and north into Kenya)

K. e. defassa Rüppell , 1835 (including *K. e. matschiei* and *K. e. hawashensis*) (central and southern Ethiopia)

K. e. harnieri Murie , 1867 (including *K. e. avellanifrons* , *K. e. ugandae* , *K. e. diana* , *K. e. ladoensis* , *K. e. cottoni* , *K. e. breviceps* , *K. e. albertensis* and *K. e. griseotinctus*) (northeastern Congo [Kinshasa] , Sudan , western Ethiopia , Uganda , western Kenya , Rwanda , Burundi and northwestern Tanzania)

K. e. tjäderi Lönnberg , 1907 (including *K. e. angusticeps* and *K. e. powelli*) (Laikipia Plateau in Kenya)

Sing @-@ sing Waterbuck

K. e. annectens Schwarz , 1913 (including *K. e. schubotzi*) (C.A.R.)

K. e. tschadensis Schwarz , 1913 (Chad)

K. e. unctuosus Laurillard , 1842 (including *K. e. togoensis*) (Cameroon west to Senegal)

= = Description = =

The waterbuck is the largest amongst the six species of Kobus . It is a sexually dimorphic antelope , with the males nearly 7 percent taller than females and around 8 percent longer . The head @-@ and @-@ body length is typically between 177 ? 235 cm (70 ? 93 in) and the average height is between 120 and 136 cm (47 and 54 in) . Males reach approximately 127 cm (50 in) at the shoulder , while females reach 119 cm (47 in) . The waterbuck is one of the heaviest antelopes. a newborn typically weighs 13 @.@ 6 kg (30 lb) , and growth in weight is faster in males than in females . Males typically weigh 198 ? 262 kg (437 ? 578 lb) and females 161 ? 214 kg (355 ? 472 lb) . The tail is 22 ? 45 cm (8 @.@ 7 ? 17 @.@ 7 in) long .

The waterbuck is of a robust build . The shaggy coat is reddish brown to grey , and becomes progressively darker with age . Males are darker than females . Though apparently thick , the hair is sparse on the coat . The hair on the neck is , however , long and shaggy . When sexually excited , the skin of the waterbuck secretes a greasy substance with the odour of musk , giving it the name " greasy kob " . This secretion also assists in water @-@ proofing the body when the animal dives into water . The facial features include a white muzzle and light eyebrows and lighter insides of the ears . There is a cream @-@ coloured patch (called " bib ") on the throat . Waterbuck are characterised by a long neck and short , strong and black legs . Females have two nipples . Preorbital glands , foot glands and inguinal glands are absent .

The common waterbuck and the defassa waterbuck are remarkably different in their physical appearances . Measurements indicate greater tail length in the latter , whereas the common waterbuck stand taller than the defassa waterbuck . However , the principal differentiation between the two types is the white ring of hair surrounding the tail on the rump , which is a hollow circle in the common waterbuck but covered with white hair in the defassa waterbuck .

The long , spiral horns curve backward , then forward . Found only on males , the horns range from 55 to 99 cm (22 to 39 in) in length . To some extent , the length of the horns is related to the bull 's age . A rudimentary horn in the form of a bone lump may be found on the skulls of females .

= = Ecology and behaviour = =

Waterbuck are rather sedentary in nature , though some migration may occur with the onset of monsoon . A gregarious animal , the waterbuck may form herds consisting of six to 30 individuals . The various groups are the nursery herds , bachelor herds and territorial males . Herd size increases in summer , whereas groups fragment in the winter months , probably under the influence of food availability . As soon as young males start developing horns (at around seven to nine months of age) , they are chased out of the herd by territorial bulls . These males then form bachelor herds and may roam in female home ranges . Females have home ranges stretching over 200 ? 600 hectares (0 @.@ 77 ? 2 @.@ 32 sq mi ; 490 ? 1 @.@ 480 acres) . A few females may form spinster herds . Though females are seldom aggressive , minor tension may arise in herds .

Males start showing territorial behaviour from the age of five years , but are most dominant from the age of six to nine . Territorial males hold territories 4 ? 146 hectares (0 @.@ 015 ? 0 @.@ 564 sq mi ; 9 @.@ 9 ? 360 @.@ 8 acres) in size . Males are inclined to remain settled in their territories , though over time they may leave inferior territories for more spacious ones . Marking of territories includes no elaborate rituals - dung and urine are occasionally dropped . After the age of ten years , males lose their territorial nature and replaced by a younger bull , following which they recede to a small and unprotected area . There is another social group , that of the satellite males , which are mature bulls as yet without their own territories , who exploit resources , particularly mating opportunities , even in the presence of the dominant bull . The territorial male may allow a few satellite males into his territory , and they may contribute to its defence . However , gradually they may deprive the actual owner of his territory and seize the area for themselves . In a study in the Lake Nakuru National Park , only 7 percent of the adult males held territories , and only half of the territorial males tolerated one or more satellite males .

Territorial males may use several kinds of display . In one type of display , the white patch on the throat and between the eyes is clearly revealed , and other displays can demonstrate the thickness of the neck . These activities frighten trespassers . Lowering of the head and the body depict submission before the territorial male , who stands erect . Fights , which may last up to thirty minutes , involve threat displays typical of bovids accompanied by snorting . Fights may even become so violent that one of the opponents meets its death due to severe abdominal or thoracic wounds . A silent animal , the waterbuck makes use of flehmen response for visual communication and alarm snorts for vocal communication . Waterbuck often enter water to escape from predators which include lions , leopards , cheetahs , African wild dogs and Nile crocodiles (leopards and spotted hyenas prey on juveniles) . However , it has been observed that the waterbuck does not particularly like being in water . Waterbuck may run into cover when alarmed , and males often attack predators .

= = Diseases and parasites = =

Waterbuck are susceptible to ulcers , lungworm infection and kidney stones . Other diseases from which these animals suffer are foot @-@ and @-@ mouth disease , sindbis fever , yellow fever , bluetongue , bovine virus diarrhoea , brucellosis and anthrax . The waterbuck is more resistant to rinderpest than are other antelopes . They are unaffected by tsetse flies but ticks may introduce parasitic protozoa such as *Theileria parva* , *Anaplasma marginale* and *Babesia bigemina* . 27 species of ixodid tick have been found on waterbuck - a healthy waterbuck may carry a total of over 4000 ticks in their larval or nymphal stages , the most common among them being *Amblyomma cohaerens* and *Rhipicephalus tricuspis* . Internal parasites found in waterbuck include tapeworms , liverflukes , stomachflukes and several helminths .

= = Diet = =

The waterbuck exhibits great dependence on water . It can not tolerate dehydration in hot weather , and thus inhabits areas close to sources of water . However , it has been observed that unlike the other members of its genus (such as the kob and puku) , the waterbuck ranges farther into the woodlands while maintaining its proximity to water . With grasses constituting a substantial 70 to 95 percent of the diet , the waterbuck is predominantly a grazer frequenting grasslands . Reeds and rushes like *Typha* and *Phragmites* may also be preferred . A study found regular consumption of three grass species round the year : *Panicum anabaptistum* , *Echinochloa stagnina* and *Andropogon gayanus* . *Hyparrhenia involucreata* , *Acroceras amplexans* and *Oryza barthii* along with annual species were the main preference in the early rainy season , while long life grasses and forage from trees constituted three @-@ fourths of the diet in the dry season .

Though the defassa waterbuck were found to have a much greater requirement for protein than the African buffalo and the Beisa oryx , the waterbuck was found to spend much lesser time on browsing (eating leaves , small shoots and fruits) in comparison to the other grazers . In the dry season about 32 percent of the 24 @-@ hour day was spent in browsing , whereas no time was spent on it during the wet season . The choice of grasses varies with location rather than availability ; for instance , in western Uganda , while *Sporobolus pyramidalis* was favoured in some places , *Themeda triandra* was the main choice elsewhere . The common waterbuck and the defassa waterbuck in the same area may differ in their choices ; it has been observed that while the former preferred *Heteropogon contortus* and *Cynodon dactylon* , the latter showed less preference for these grasses .

= = Reproduction = =

Waterbuck are slower than other antelopes in terms of the rate of maturity . While males become sexually mature at the age of six years , females reach maturity within two to three years . Females may conceive by the age of two @-@ and @-@ a @-@ half years , and remain reproductive for

another ten years . In equatorial regions , breeding takes place throughout the year , and births are at their peak in the rainy season . However , breeding is seasonal in the Sudan (south of Sahara) , with the mating season lasting four months . The season extends for even longer periods in some areas of southern Africa . Oestrus lasts for a day or less .

Mating begins after the male confirms that the female is in oestrus , which he does by sniffing her vulva and urine . A resistive female would try to bite or even fight off an advancing male . The male exhibits flehmen , and often licks the neck of the female and rubs his face and the base of his horns against her back . There are several attempts at mounting before the actual copulation . The female shifts her tail to one side , while the male clasps her sides with his forelegs and rests on her back during copulation , which may occur as many as ten times .

The gestational period lasts for seven to eight months , followed by the birth of a single calf . Twins are rare . Pregnant females isolate themselves and into thickets as parturition approaches . Newborn calves can stand on their feet within half @-@ an @-@ hour of birth . The mother eats the afterbirth . She communicates with the calf by bleating or snorting . Calves are kept hidden for two to three weeks or even two months . At about three to four weeks , the calf begins following its mother , who signals it to do so by raising her tail . Though bereft of horns , mothers will fiercely defend their offspring from predators . Calves are weaned at eight months , following which time they join groups of calves of their own age . Young females remain with their mothers in nursery herds , or may also join bachelor herds . The waterbuck lives to 18 years in the wild and 30 years in captivity .

= = Distribution and habitat = =

The waterbuck is native to southern and eastern Africa (including countries such as Angola , Botswana , The Democratic Republic of Congo , Ethiopia , Kenya , Namibia , South Africa , Tanzania and Uganda) besides a few countries of western and northern Africa such as Chad , Côte d 'Ivoire , Ghana , Mali , Niger , Nigeria and Senegal . Though formerly widespread in sub @-@ Saharan Africa , its numbers have now decreased in most areas .

The common waterbuck is found east of the Eastern African Rift . Its southern range extends to the Hluhluwe @-@ Umfolozi Game Reserve (KwaZulu Natal) and to central Namibia . By contrast , the defassa waterbuck inhabits western and central Africa . The defassa waterbuck occurs west of the Albertine Rift and ranges from Eritrea to Guinea Bissau in the southern Sahel , its most northerly point of distribution being in southern Mali . Its range also stretches east of the Congo basin through Zambia into Angola , while another branch extends to the Zaire River west of the Congo basin . While the common waterbuck is now extinct in Ethiopia , the defassa waterbuck has become extinct in Gambia .

Waterbuck inhabit scrub and savanna areas alongside rivers , lakes and valleys . Due to their requirement for grasslands as well as water , the waterbuck have a sparse distribution across ecotones (areas of interface between two different ecosystems) . A study in the Ruwenzori Range showed that the mean density of waterbuck was 5 @. @ 5 per square mile , and estimates in the Maasai Mara were as low as 1 @. @ 3 per square mile . It has been observed that territorial size depends on the quality of the habitat , the age and health of the animal and the population density . The greater the age of the animal or the denser the populations , the smaller are the territories . In Queen Elizabeth National Park , females had home ranges 21 ? 61 hectares (0 @. @ 081 ? 0 @. @ 236 sq mi ; 52 ? 151 acres) in area whereas home ranges for bachelor males averaged between 24 ? 38 hectares (0 @. @ 093 ? 0 @. @ 147 sq mi ; 59 ? 94 acres) . The oldest female (around 18 years old) had the smallest home range .

= = Threats and conservation = =

The International Union for the Conservation of Nature and Natural Resources (IUCN) lists the waterbuck as of Least Concern . More specifically , the common waterbuck is listed as of Least Concern while the defassa waterbuck is Near Threatened . The population trend for both the common and defassa waterbuck is decreasing , especially that of the latter , with large populations

being eliminated from their habitats due to Poaching and human settlement . Their own sedentary nature too is responsible for this to some extent . Numbers have fallen in Queen Elizabeth National Park , Murchison Falls National Park , Akagera National Park , Lake Nakuru National Park , and Comoé National Park . Population decrease in the Lake Nakuru National Park has been attributed to heavy metal poisoning in the animals . While cadmium and lead levels were dangerously high in the kidney and the liver , copper , calcium and phosphorus deficiency was noted .

Over 60 percent of the defassa waterbuck populations thrive in protected areas , most notably in Niokolo @-@ Koba , Comoe , Mole , Bui , Pendjari , Manovo @-@ Gounda St. Floris , Moukalaba @-@ Doudou , Garamba , Virunga , Omo , Mago , Murchison Falls , Serengeti , and Katavi , Kafue and Queen Elizabeth National Parks , the national parks and hunting zones of North Province (Cameroon) , Ugalla River Forest Reserve , Nazinga Game Ranch , Rukwa Valley , Awash Valley , Murule and Arly @-@ Singou . The common waterbuck occurs in Tsavo , Tarangire , Mikumi , Kruger and Lake Nakuru National Parks , Laikipia , Kajiado , Luangwa Valley , Selous and Hluhluwe @-@ Umfolozi game reserves and private lands in South Africa .

= = Research = =

Scientists with the ICIPE have developed tsetse @-@ fly @-@ repellent collars for cattle based on the smell of the waterbuck .