

= Springbok =

The springbok / *Antidorcas marsupialis* / (*Antidorcas marsupialis*) is a medium sized antelope found mainly in southern and southwestern Africa . The sole member of the genus *Antidorcas* , this bovid was first described by the German zoologist Eberhard August Wilhelm von Zimmermann in 1780 . Three subspecies are identified . A slender , long legged antelope , the springbok reaches 71 to 86 cm (28 to 34 in) at the shoulder and weighs between 27 and 42 kg (60 and 93 lb) . Both sexes have a pair of black , 35 to 50 centimetre (14 to 20 in) long horns that curve backward . The springbok is characterised by a white face , a dark stripe running from the eyes to the mouth , a light brown coat marked by a reddish brown stripe that runs from the upper foreleg to the buttocks across the flanks , and a white rump flap .

Active mainly at dawn and dusk , springbok form harems (mixed sex herds) . In earlier times , springbok of the Kalahari desert and Karoo would migrate in large numbers across the countryside , a practice known as *trekbokken* . A feature unique to the springbok is *pronking* , in which the springbok performs multiple leaps into the air , up to 2 metres (6 ft) above the ground , in a stiff legged posture , with the back bowed and the white flap lifted . Primarily a browser , the springbok feeds on shrubs and succulents ; this antelope can live without drinking water for years , meeting its requirements through eating succulent vegetation . Breeding takes place year round , and peaks in the rainy season , when forage is most abundant . A single calf is born after a five to six month long pregnancy ; weaning occurs at nearly six months of age , and the calf leaves its mother a few months later .

Springbok inhabit the dry areas of south and southwestern Africa . The International Union for Conservation of Nature and Natural Resources (IUCN) classifies the springbok as a Least Concern species . There are no major threats to the long term survival of the species ; the springbok , in fact , is one of the few antelope species considered to have an expanding population . They are popular game animals , and are valued for their meat and skin . The springbok is the national animal of South Africa .

= = Etymology = =

The common name " springbok " (pronounced / *ˈsprɪŋ ˈbɒk* /) comes from the Afrikaans words *spring* (" jump ") and *bok* (" antelope " or " goat ") ; the first recorded use of the name dates to 1775 . The scientific name of the springbok is *Antidorcas marsupialis* ; *anti* is Greek for " opposite " , and *dorcas* for " gazelle " ? identifying that the animal is not a gazelle . The specific epithet *marsupialis* comes from the Latin *marsupium* (" pocket ") ; it refers to a pocket like skin flap which extends along the midline of the back from the tail . In fact , it is this physical feature that distinguishes the springbok from true gazelles .

= = Taxonomy and evolution = =

The springbok is the sole member of the genus *Antidorcas* and is placed in the family Bovidae . It was first described by the German zoologist Eberhard August Wilhelm von Zimmermann in 1780 . Zimmermann assigned the genus *Antelope* (*blackbuck*) to the springbok . In 1845 , Swedish zoologist Carl Jakob Sundevall placed the springbok in *Antidorcas* , a genus of its own .

In 2013 , Eva Verena Bärmann (of the University of Cambridge) and colleagues undertook a revision of the phylogeny of the tribe Antilopini on the basis of nuclear and mitochondrial data . They showed that the springbok and the gerenuk (*Litocranius walleri*) form a clade with saiga (*Saiga tatarica*) as sister taxon . The study pointed out that the saiga and the springbok could be considerably different from the rest of the antilopines ; a 2007 phylogenetic study even suggested that the two form a clade sister to the gerenuk . The cladogram below is based on the 2013 study .

Fossil springbok are known from the Pliocene ; the antelope appears to have evolved about three million years ago from a gazelle like ancestor . Three fossil species of *Antidorcas* have been identified , in addition to the extant form , and appear to have been widespread across Africa . Two

of these , *A. bondi* and *A. australis* , became extinct around 70,000 years ago (early Holocene) . The third species , *A. recki* , probably gave rise to the extant form *A. marsupialis* during the Pleistocene , about 100 thousand years ago . Fossils have been reported from Pliocene , Pleistocene and Holocene sites in northern , southern and eastern Africa . Fossils dating back to 80 and 100 thousand years ago have been excavated at Herolds Bay Cave (Western Cape Province , South Africa) and Florisbad (Free State) respectively .

Three subspecies are recognised :

A. m. angolensis (Blaine , 1922) ? Occurs in Benguela and Namibe (southwestern Angola) .

A. m. hofmeyri (Thomas , 1926) ? Occurs in Berseba and Great Namaqualand (southwestern Africa) . Its range lies north of the Orange River , stretching from Upington and Sandfontein through Botswana to Namibia .

A. m. marsupialis (Zimmermann , 1780) ? Its range lies south of the Orange River , extending from the northeastern Cape of Good Hope to the Free State and Kimberley .

= = Description = =

The springbok is a slender antelope with long legs and neck . Both sexes reach 71 ? 86 centimetres (28 ? 34 in) at the shoulder with a head @-@ and @-@ body length typically between 120 and 150 cm (47 and 59 in) . The weights for both sexes range between 27 and 42 kilograms (60 and 93 lb) . The tail , 14 to 28 centimetres (5 @. 5 to 11 @. 0 in) long , ends in a short black tuft . There are major differences in the size and weight of the subspecies . A study tabulated average body measurements for the three subspecies . *A. m. angolensis* males stand 84 cm (33 in) tall at the shoulder , while females are 81 cm (32 in) tall . The males weigh around 31 kg (68 lb) while the slightly heavier females weigh 32 kg (71 lb) . *A. m. hofmeyri* is the largest subspecies ; males are nearly 86 cm (34 in) tall , and the notably shorter females are 71 cm (28 in) tall . The males , weighing 42 kg (93 lb) , are heavier than females , that weigh 35 kg (77 lb) . On the other hand , *A. m. marsupialis* is the smallest subspecies ; males are 75 cm (30 in) tall and females 72 cm (28 in) tall . Average weight of males is 31 kg (68 lb) while for females it is 27 kg (60 lb) . Another study showed a strong correlation between the availability of winter dietary protein and the body mass .

Dark stripes extend across the white face , from the corner of the eyes to the mouth . A dark patch marks the forehead . In juveniles the stripes and the patch are light brown . The ears , narrow and pointed , measure 15 ? 19 centimetres (5 @. 9 ? 7 @. 5 in) . Typically light brown , the springbok has a dark reddish @-@ brown band running horizontally from the upper foreleg to the edge of the buttocks , separating the dark back from the white underbelly . The tail (except the terminal black tuft) , buttocks , the insides of the legs and the rump are all white . There are two other varieties ? pure black and pure white forms ? artificially selected in some South African ranches . Though born with a deep black sheen , adult black springbok are two shades of chocolate @-@ brown and develop a white marking on the face as they mature . White springbok , as the name suggests , are predominantly white with a light tan stripe on the flanks .

The three subspecies also differ in their colour . *A. m. angolensis* has a brown to tawny coat , with thick dark brown stripes on the face extending two @-@ thirds down to the snout . While the lateral stripe is nearly black , the stripe on the rump is dark brown . The medium brown forehead patch extends to eye level and is separated from the bright white face by a dark brown border . There is a brown spot on the nose . *A. m. hofmeyri* is a light fawn , with thin dark brown face stripes . The stripes on the flanks are dark brown to black , and the posterior stripes are moderately brown . The forehead patch , dark brown or fawn , extends beyond the level of the eyes and mixes with the white of the face without any clear barriers . The nose may have a pale smudge . *A. m. marsupialis* is a rich chestnut brown , with thin light face stripes . The stripe near the rump is well @-@ marked , and that on the flanks is deep brown . The forehead is brown , fawn or white , the patch not extending beyond the eyes and having no sharp boundaries . The nose is white or marked with brown .

The skin along the middle of the dorsal side is folded in , and covered with 15 to 20 cm (6 to 8 in) white hair erected by arrector pili muscles (located between hair follicles) . This white hair is almost

fully concealed by the surrounding brown hairs until the fold opens up , and this is a major feature distinguishing this antelope from gazelles . Springbok differ from gazelles in several other ways ; for instance , springbok have two premolars on both sides of either jaw , rather than the three observed in gazelles . This gives a total of 28 teeth in the springbok , rather than 32 of gazelles . Other points of difference include a longer , broader and rigid bridge to the nose and more muscular cheeks in springbok , and differences in the structure of the horns .

Both sexes have black horns , about 35 ? 50 cm (14 ? 20 in) long , that are straight at the base and then curve backward . In *A. m. marsupialis* , females have thinner horns than males ; the horns of females are only 60 to 70 percent as long as those of males . Horns have a girth of 71 ? 83 mm (2 @. @ 8 ? 3 @. @ 3 in) at the base ; this thins to 56 ? 65 mm (2 @. @ 2 ? 2 @. @ 6 in) towards the tip . In the other two subspecies , horns of both sexes are nearly similar . The spoor , narrow and sharp , is 5 @. @ 5 cm (2 @. @ 2 in) long .

= = Ecology and behaviour = =

Springbok are mainly active around dawn and dusk . Activity is influenced by weather ; springbok can feed at night in hot weather , and at midday in colder months . They rest in the shade of trees or bushes , and often bed down in the open when it is cooler . The social structure of the springbok is similar to that of the Thomson 's gazelle . Mixed sex herds or harems have a roughly 3 : 1 sex ratio ; bachelor individuals are also observed . In the mating season , males generally form herds and wander in search of mates . Females live with their offspring in herds , that very rarely include dominant males . Territorial males round up female herds that enter their territories and keep out the bachelors ; mothers and juveniles may gather in nursery herds separate from harem and bachelor herds . After weaning , female juveniles stay with their mothers until the birth of their next calves , while males join bachelor groups .

A study of vigilance behaviour of herds revealed that individuals on the borders of herds tend to be more cautious ; vigilance decreases with group size . Group size and distance from roads and bushes were found to have major influence on vigilance , more among the grazing springbok than among their browsing counterparts . Adults were found to be more vigilant than juveniles , and males more vigilant than females . Springbok passing through bushes tend to be more vulnerable to predator attacks as they can not be easily alerted , and predators usually conceal themselves in bushes . Another study calculated that the time spent in vigilance by springbok on the edges of herds is roughly double that spent by those in the centre and the open . Springbok were found to be more cautious in the late morning than at dawn or in the afternoon , and more at night than in the daytime . Rates and methods of vigilance were found to vary with the aim of lowering risk from predators .

During the rut , males establish territories , ranging from 10 to 70 hectares (25 to 173 acres) , which they mark by urinating and depositing large piles of dung . Males in neighbouring territories frequently fight for access to females , which they do by twisting and levering at each other with their horns , interspersed with stabbing attacks . Females roam the territories of different males . Outside of the rut , mixed sex herds can range from as few as three to as many as 180 individuals , while all @-@ male bachelor herds are of typically no more than fifty individuals . Harem and nursery herds are much smaller , typically including no more than ten individuals .

In earlier times , when large populations of springbok roamed the Kalahari desert and Karoo , millions of migrating springbok formed herds hundreds of kilometres long that could take several days to pass a town . These mass treks , known as trekbokken in Afrikaans , took place during long periods of drought . Herds could efficiently retrace their path to their territories after long migrations . Trekbokken is still observed occasionally in Botswana , though on a much smaller scale than earlier .

Springbok often go into bouts of repeated high leaps of up to 2 m (6 ft 7 in) into the air ? a practice known as pronking (derived from the Afrikaans pronk , " to show off ") or stotting . In pronking , the springbok performs multiple leaps into the air in a stiff @-@ legged posture , with the back bowed and the white flap lifted . When the male shows off his strength to attract a mate , or to ward off

predators , he starts off in a stiff @-@ legged trot , leaping into the air with an arched back every few paces and lifting the flap along his back . Lifting the flap causes the long white hairs under the tail to stand up in a conspicuous fan shape , which in turn emits a strong scent of sweat . Although the exact cause of this behaviour is unknown , springbok exhibit this activity when they are nervous or otherwise excited . The most accepted theory for pronking is that it is a method to raise alarm against a potential predator or confuse it , or to get a better view of a concealed predator ; it may also be used for display . Springbok are very fast antelopes , clocked at 88 km / h (55 mph) . They generally tend to be ignored by carnivores unless they are breeding . Caracals , cheetah , leopards , spotted hyaenas and wild dogs are major predators of the springbok . African wild cats , black @-@ backed jackals , black eagles , martial eagles and tawny eagles target juveniles . Springbok are generally quiet animals , though they may make occasional low @-@ pitched bellows as a greeting and high @-@ pitched snorts when alarmed .

= = = Parasites = = =

A 2012 study scrutinised the effects of rainfall patterns and parasite infections on the body of the springbok in Etosha National Park . It was observed that males and juveniles were in better health toward the end of the rainy season . Health of females was more affected by parasites than by rainfall ; parasite count in females peaked prior to and immediately after parturition . Studies show that springbok host helminths (*Haemonchus* , *Longistrongylus* and *Trichostrongylus*) , ixodid ticks (*Rhipicephalus* species) , lice (*Damalinia* and *Linognathus* species) . *Eimeria* species mainly affect juveniles .

= = = Diet = = =

Springbok are primarily browsers and may switch to grazing occasionally ; they feed on shrubs and young succulents (such as *Lampranthus* species) before they lignify . They prefer grasses such as *Themeda triandra* . Springbok can meet their water needs from the food they eat , and are able to survive without drinking water through dry season . In extreme cases , they do not drink any water over the course of their lives . Springbok may accomplish this by selecting flowers , seeds , and leaves of shrubs before dawn , when the food items are most succulent . In places such as the Etosha National Park , springbok seek out water bodies where they are available . Springbok gather in the wet season and disperse during the dry season , unlike other African mammals .

= = = Reproduction = = =

Springbok mate year @-@ round , though females are more likely to enter oestrus during the rainy season , when food is more plentiful . Females are able to conceive at as early as six to seven months , whereas males do not attain sexual maturity until two years ; rut lasts 5 to 21 days . When a female approaches a rutting male , the male holds his head and tail at level with the ground , lowers his horns and makes a loud grunting noise to attract her . The male then urinates and sniffs the female 's perineum . If the female is receptive , she urinates as well , and the male makes a flehmen gesture , and taps his leg till the female leaves or permits him to mate .

Gestation lasts five to six months , after which a single calf (or rarely twins) is born . Most births take place in the spring (October to November) , prior to the onset of the rainy season . The infant weighs 3 @. 8 to 5 kg (8 @. 4 to 11 @. 0 lb) ; the female keeps her calf hidden in cover while she is away . Mother and calf rejoin the herd about three to four weeks after parturition ; the young are weaned at five or six months . When the mother gives birth again , the previous offspring , now 6 to 12 months old , deserts her to join herds of adult springbok . Thus a female can calve twice a year , and even thrice if one calf dies . Springbok live for up to ten years in the wild .

= = Distribution and habitat = =

Springbok inhabit the dry areas of south and southwestern Africa . Their range extends from northwestern South Africa through the Kalahari desert into Namibia and Botswana . The Transvaal marks the eastern limit of the range , from where it extends westward to the Atlantic and northward to southern Angola and Botswana . In Botswana , they mostly occur in the Kalahari desert in the southwestern and central parts of the country . They are widespread across Namibia and the vast grasslands of the Free State and the shrublands of Karoo in South Africa ; on the other hand , they are confined to the Namib desert in Angola .

The historic range of the springbok stretched across the dry grasslands , bushlands and shrublands of south @-@ western and southern Africa ; springbok migrated sporadically in southern parts of the range . These migrations are rarely seen nowadays , but seasonal congregations can still be observed in preferred areas of short vegetation , such as the Kalahari desert .

= = Threats and conservation = =

The springbok has been classified as Least Concern by the International Union for Conservation of Nature and Natural Resources (IUCN) . There are no major threats to the long @-@ term survival of the species . In fact , the springbok is one of the few antelope species with a positive population trend .

Springbok occur in several protected areas across their range : Makgadikgadi and Nxai National Park (Botswana) ; Kgalagadi Transfrontier Park between Botswana and South Africa ; Etosha National Park and Namib @-@ Naukluft Park (Namibia) ; Mokala and Karoo National Parks and a number of provincial reserves in South Africa . In 1999 , Rod East of the IUCN SSC Antelope Specialist Group estimated the springbok population in South Africa at more than 670 @,@ 000 , noting that it might be an underestimate . However , estimates for Namibia , Angola , Botswana , Transvaal , Karoo and the Free State (which gave a total population estimate of nearly 2 @,@ 000 @,@ 000 ? 2 @,@ 500 @,@ 000 animals in southern Africa) , were in complete disagreement with East 's estimate . Springbok are under active management in several private lands . Small populations have been introduced into private lands and provincial areas of KwaZulu @-@ Natal .

= = Relationship with humans = =

Springbok are hunted as game throughout Namibia , Botswana and South Africa because of their attractive coats ; they are common hunting targets due to their large numbers and the ease with which they can be supported on farmlands . The export of springbok skins , mainly from Namibia and South Africa , is a booming industry ; these skins serve as taxidermy models . The meat is a prized fare , and is readily available in South African supermarkets . As of 2011 , the springbok , the gemsbok and the greater kudu collectively account for around two @-@ thirds of the game meat production from Namibian farmlands ; nearly 90 tonnes (89 long tons) of the springbok meat is exported as mechanically deboned meat to overseas markets .

A 2007 study indicated that the latissimus dorsi muscle of the springbok comprises 1 @.@ 1 ? 1 @.@ 3 % ash , 1 @.@ 3 ? 3 @.@ 5 % fat , 72 ? 75 % moisture and 18 ? 22 % protein . Stearic acid is the main fatty acid , accounting for 24 ? 27 % of the fatty acids . The cholesterol content varies from 54 @.@ 5 to 59 milligrams (0 @.@ 841 to 0 @.@ 911 gr) per 100 grams (3 @.@ 5 oz) of meat . The pH of the meat increases if the springbok is under stress or cropping is done improperly ; consequently , the quality deteriorates and the colour darkens . The meat might be adversely affected if the animal is killed by shooting . The meat may be consumed raw or used in prepared dishes . Biltong can be prepared by preserving the raw meat with vinegar , spices and table salt , without fermentation , followed by drying . Springbok meat may also be utilised in preparing salami ; a study found that the flavour of this salami is better than mutton salami , and feels oilier than salami of beef , horse meat or mutton .

The springbok has been a national symbol of South Africa since the white minority rule in the 20th century . It was adopted as a nickname or mascot by several South African sports teams , most famously by the national rugby union team . The springbok is the national animal of South Africa .

Even after the decline of apartheid , Nelson Mandela intervened to keep the name of the animal for the reconciliation of rugby fans , the majority of whom were whites .