

= Addax =

For the GP2 Series racing team , see Addax Team .

The addax (*Addax nasomaculatus*) , also known as the white antelope and the screwhorn antelope , is an antelope of the genus Addax , that lives in the Sahara desert . It was first described by Henri de Blainville in 1816 . As suggested by its alternative name , this pale antelope has long , twisted horns - typically 55 to 80 cm (22 to 31 in) in females and 70 to 85 cm (28 to 33 in) in males . Males stand from 105 to 115 cm (41 to 45 in) at the shoulder , with females at 95 to 110 cm (37 to 43 in) . They are sexually dimorphic , as the females are smaller than males . The colour of the coat depends on the season - in the winter , it is greyish @-@ brown with white hindquarters and legs , and long , brown hair on the head , neck , and shoulders ; in the summer , the coat turns almost completely white or sandy blonde .

The addax mainly eats grasses and leaves of any available shrubs , leguminous herbs and bushes . These animals are well @-@ adapted to exist in their desert habitat , as they can live without water for long periods of time . Addax form herds of five to 20 members , consisting of both males and females . They are led by the oldest female . Due to its slow movements , the antelope is an easy target for its predators : lions , humans , African hunting dogs , cheetahs and leopards . Breeding season is at its peak during winter and early spring . The natural habitat of the addax are arid regions , semideserts and sandy and stony deserts .

The addax is a critically endangered species of antelope , as classified by the IUCN . Although extremely rare in its native habitat due to unregulated hunting , it is quite common in captivity . The addax was once abundant in North Africa , native to Chad , Mauritania and Niger . It is extinct in Algeria , Egypt , Libya , Sudan and Western Sahara . It has been reintroduced in Morocco and Tunisia .

= = Taxonomy and naming = =

The scientific name of the addax is *Addax nasomaculatus* . This antelope was first described by French zoologist and anatomist Henri Blainville in 1816 . It is placed in the monotypic genus Addax and family Bovidae . Henri Blainville observed syntypes in Bullock 's Pantherion and the Museum of the Royal College of Surgeons . English naturalist Richard Lydekker stated their type locality to be probably Senegambia , though he did not have anything to support the claim . Finally , from a discussion in 1898 , it became more probable that British hunters or collectors obtained the addax from the part of Sahara in Tunisia .

The generic name Addax is thought to be obtained from an Arabic word meaning a wild animal with crooked horns . It is also thought to have originated from a Latin word . The name was first used in 1693 . The species name *nasomaculatus* comes from the Latin words *nasus* (or the prefix *naso*) meaning nose , and *macula* , spot or spotted , and the suffix *-atus* refers to the spots and facial markings of the antelope . Bedouins use another name for the addax , the Arabic *bakr* (or *bagr*) al wahsh , which literally means the cow of the wild . The name can be used to refer to other ungulates , as well . The other common names of addax are " white antelope " and " screwhorn antelope " .

= = Genetics = =

The addax has 29 pairs of chromosomes . All chromosomes are acrocentric except for the first pair of autosomes , which are submetacentric . The X chromosome is the largest of the acrocentric chromosomes , and the Y chromosome is medium @-@ sized . The short and long arms of the pair of submetacentric autosomes correspond respectively to the 27th and 1st chromosomes in cattle and goats . In a study , the banding patterns of chromosomes in addax were found to be similar to those in four other species of the subfamily Hippotraginae .

= = History and fossil record = =

In ancient times , the addax occurred from Northern Africa through Arabia and the Levant . Pictures in a tomb , dating back to the 2500 BCE show at least the partial domestication of the addax by the ancient Egyptians . These pictures show addax and some other antelopes tied with ropes to stakes . The number of addax captured by a person were considered an indicator of his high social and economic position in the society . But today excess poaching has resulted in the extinction of this species in Egypt since the 1960s .

Addax fossils have been found in four sites of Egypt - a 7000 BCE fossil from the Great Sand Sea , a 5000 ? 6000 BCE fossil from Djara , a 4000 ? 7000 BCE fossil from Abu Ballas Stufenmland and a 5000 BCE fossil from Gilf Kebir . Apart from these , fossils have also been excavated from Mittleres Wadi Howar (6300 BCE fossil) , and Pleistocene fossils from Grotte Neandertaliens , Jebel Irhoud and Parc d 'Hydra .

= = Physical description = =

The addax is a spiral @-@ horned antelope . Male addax stand from 105 to 115 cm (41 to 45 in) at the shoulder , with females at 95 to 110 cm (37 to 43 in) . They are sexually dimorphic , as the females are smaller than males . The head and body length in both sexes is 120 to 130 cm (47 to 51 in) , with a 25 to 35 cm (9 @.@ 8 to 13 @.@ 8 in) long tail . The weight of males varies from 100 to 125 kg (220 to 276 lb) , and that of females from 60 to 90 kg (130 to 200 lb) .

The coloring of the addax 's coat varies with the season . In the winter , it is greyish @-@ brown with white hindquarters and legs , and long , brown hair on the head , neck , and shoulders . In the summer , the coat turns almost completely white or sandy blonde . Their head is marked with brown or black patches that form an ' X ' over their noses . They have scraggly beards and prominent red nostrils . Long , black hairs stick out between their curved and spiralling horns , ending in a short mane on the neck .

The horns , which are found on both males and females , have two to three twists and are typically 55 to 80 cm (22 to 31 in) in females and 70 to 85 cm (28 to 33 in) in males , although the maximum recorded length is 109 @.@ 2 cm (43 @.@ 0 in) . The lower and mid portions of the horns are marked with a series of 30 to 35 ring @-@ shaped ridges . The tail is short and slender , ending in a puff of black hair . The hooves are broad with flat soles and strong dewclaws to help them walk on soft sand . All four feet possess scent glands . The life span of the addax is up to 19 years in the wild , which can be extended to 25 years under captivity .

The addax closely resembles the scimitar oryx , but can be distinguished by its horns and facial markings . While the addax is spiral @-@ horned , the scimitar oryx has straight , 127 cm (50 in) long horns . The addax has a brown hair tuft extending from the base of its horns to between its eyes . A white patch , continuing from the brown hair , extends till the middle of the cheek . On the other hand , the scimitar oryx has a white forehead with only a notable brown marking a brown lateral stripe across its eyes . It differs from other antelopes by having large , square teeth like cattle , and lacking the typical facial glands .

= = Parasites = =

The addax are most prone to parasites in moist climatic conditions . Addax have always been infected with nematodes in the Trichostrongyloidea and Strongyloidea families . In an exotic ranch in Texas , an addax was found host to the nematodes *Haemonchus contortus* and *Longistongylus curvispiculum* in its abomasum , out of which the former was more dominant .

= = Behavior and ecology = =

These animals are mainly nocturnal , particularly in summers . In the day , they dig into the sand in shady locations and rest in these depressions , which also protect them from sandstorms . Addax herds contain both males and females , and have from five to 20 members . They will generally stay in one place and only wander widely in search of food . The addax have a strong social structure ,

probably based on age , and herds are led by the oldest female . Herds are more likely to be found along the northern edge of the tropical rain system during the summer and move north as winter falls . They are able to track rainfall and will head for these areas where vegetation is more plentiful . Males are territorial , and guard females , while the females establish their own dominance hierarchies .

Due to its slow movements , the addax is an easy target for predators such as lions , humans , African hunting dogs , cheetahs and leopards . Caracals , hyenas and servals attack calves . The addax are normally not aggressive , though individuals may charge if they are disturbed .

= = = Adaptations = = =

The addax are amply suited to live in the deep desert under extreme conditions . They can survive without free water almost indefinitely , because they get moisture from their food and dew that condenses on plants . Scientists believe the addax has a special lining in its stomach that stores water in pouches to use in times of dehydration . They also produce highly concentrated urine to conserve water . Pale colour of the coat reflects radiant heat , and the length and density of the coat helps in thermoregulation . In the day the addax huddle together in shaded areas , and in cool nights rest in sand hollows . These practices help in dissipation of body heat and saving water by cooling the body through evaporation .

In a study , eight addax antelopes on a diet of grass hay (*Chloris gayana*) were studied to determine the retention time of food from the digestive tract . It was found that food retention time was long , taken as an adaptation to a diet including a high proportion of slow fermenting grasses ; while the long fluid retention time could be interpreted to be due to water @-@ saving mechanisms with low water turnover and a roomy rumen .

= = = Diet = = =

The addax live in desert terrain where they eat grasses and leaves of what shrubs , leguminous herbs and bushes are available . Their staple foods are the *Aristida* , *Artemisia* , *Citrullus* and *Acacia* grasses ; perennials which turn green and sprout at the slightest bit of humidity or rain . The addax eat only certain parts of the plant and tend to crop the *Aristida* grasses neatly to the same height . By contrast , when feeding on *Panicum* grass , the drier outer leaves are left alone while they eat the tender , inner shoots and seeds . These seeds are important part of the addax diet , being their main source of protein .

= = = Reproduction = = =

Females are sexually mature at two to three years of age and males at about two years . Breeding occurs throughout the year , but it peaks during winter and early spring . In the northern Sahara , breeding peaks at the end of winter and beginning of spring ; in the southern Sahara , breeding peaks from September to October and from January to mid @-@ April . Each estrus bout lasts for one or two days .

In a study , the blood serum of female addax was analyzed through immunoassay to know about their luteal phase . Estrous cycle duration was of about 33 days . During pregnancy , ultrasonography showed the uterine horns as coiled . The maximum diameters of the ovarian follicle and the corpus luteum were 15 mm (0 @.@ 59 in) and 27 mm (1 @.@ 1 in) . Each female underwent an anovulatory period lasting 39 to 131 days , during which there was no ovulation . Anovulation was rare in winter , which suggested the effect of seasons on the estrous cycle .

Gestation period lasts 257 ? 270 days (about 9 months) . Females may lie or stand during the delivery , during which one calf is born . A postpartum estrus occurs after two or three days . The calf weighs 5 kg (11 lb) at birth and is weaned at 23 ? 29 weeks old .

= = Habitat and distribution = =

The addax inhabits arid regions , semideserts and sandy and stony deserts . They even occur in extremely arid areas , with less than 100 mm annual rainfall . They also inhabit deserts with tussock grasses (*Stipagrostis* species) and succulent thorn scrub (*Cornulaca*) . Formerly , the addax was widespread in the Sahelo @-@ Saharan region of Africa , west of the Nile Valley and all countries sharing the Sahara Desert ; but today the only known self @-@ sustaining population is present in the Termit Massif Reserve (Niger) . However , there are reports of sightings from the eastern Air Mountains (Niger) and Equey (Chad) . Rare nomads may be seen in north Niger , southern Algeria and Libya ; and the antelope is rumoured to be present along the Mali / Mauritania border , though there are no confirmed sightings . The addax was once abundant in North Africa , native to Chad , Mauritania and Niger . It is extinct in Algeria , Egypt , Libya , Sudan and western Sahara . It has been reintroduced in Morocco and Tunisia .

= = Threats and conservation = =

Decrease in the population of the addax has begun notably since the mid @-@ 1800s . More recently , addax were found from Algeria to Sudan , but due mainly to overhunting , they have become much more restricted and rare .

Addax are easy to hunt due to their slow movements . Roadkill , firearms for easy hunting and nomadic settlements near waterholes (their dry @-@ season feeding places) have also decreased numbers . Moreover , their meat and leather are highly prized . Other threats include chronic droughts in the deserts , habitat destruction due to more human settlements and agriculture . Less than 500 individuals are thought to exist in the wild today , most of the animals being found between the Termit area of Niger , the Bodélé region of western Chad , and the Aoukar in Mauritania .

Today there are over 600 addax in Europe , Yotvata Hai @-@ Bar Nature Reserve (Israel) , Sabratha (Libya) , Giza Zoo (Egypt) , North America , Japan and Australia under captive breeding programmes . There are 1000 more in private collections and ranches in United States and the Middle East . Addax is legally protected in Morocco , Tunisia , and Algeria ; hunting of all gazelles is forbidden in Libya and Egypt . Although enormous reserves , such as the Hoggar Mountains and Tasilli in Algeria , the Ténéré in Niger , the Ouadi Rimé @-@ Ouadi Achim Faunal Reserve in Chad , and the newly established Wadi Howar National Park in Sudan , cover areas where addax previously occurred , some do not keep addax at present because they lack the resources . The addax has been reintroduced in Bou Hedma National Park (Tunisia) and Souss @-@ Massa National Park (Morocco) . Reintroductions in the wild are ongoing in Jebil National Park (Tunisia) and Grand Erg Oriental (Sahara) , and another is planned in Morocco .