African wild dog

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The **African wild dog** (*Lycaon pictus*) is a canid native to Sub-Saharan Africa. It is the largest of its family in Africa,[2] and the only member of the genus *Lycaon*, which is distinguished from *Canis* by its fewer toes and dentition, which is highly specialised for a hypercarnivorous diet.[3] It is classed as endangered by the IUCN, as it has disappeared from much of its original range. The current population has been estimated at roughly 39 subpopulations containing 6,600 adults, only 1,400 of which are fully grown. The decline of these populations is ongoing, due to habitat fragmentation, human persecution, and disease outbreaks.[1]

The African wild dog is a highly social animal, living in packs with separate dominance hierarchies for males and females.[4] Uniquely among social carnivores, it is the females rather than the males that disperse from the natal pack once sexually mature, and the young are allowed to feed first on carcasses. The species is a specialised diurnal hunter of antelopes, which it catches by chasing them to exhaustion.[5] Like other canids, it regurgitates food for its young, but this action is also extended to adults, to the point of being the bedrock of African wild dog social life.[6] It has few natural predators, though lions are a major source of mortality, and spotted hyenas are frequent kleptoparasites.[7]

Although not as prominent in African folklore or culture as other African carnivores,[8] it has been respected in several hunter-gatherer societies, particularly those of the predynastic Egyptians[9][10] and the San people.[11]

African wild dog

L. p. pictus, Tswalu Kalahari Reserve, South Africa

Conservation status

Endangered (IUCN 3.1)[1]

Scientific classification

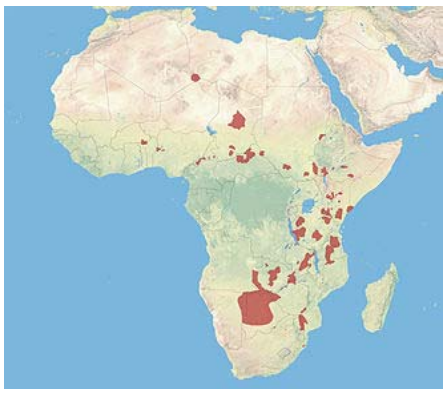
Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Carnivora
Family:	Canidae
Subfamily:	Caninae
Tribe:	Canini
Genus:	*Lycaon*
Species:	***L. pictus***

Binomial name

Lycaon pictus

Temminck, 1820

Contents



L. pictus range

Early accounts and naming

The earliest possible written reference to the species comes Oppian, who wrote of the *thoa*, a hybrid between the wolf and panther which resembles the former in shape and the latter in colour. Solinus's *Collectanea rerum memorabilium* from the 3rd century AD describes a multicoloured wolf-like animal with a mane native to Ethiopia.[12]

Dutch zoologist Coenraad Temminck was the first person to give *Lycaon pictus* a binomial name, though he mistakenly classed it as a hyena.

The species was first described scientifically in 1820 by Coenraad Temminck, after having examined a specimen taken from the coast of Mozambique. He named the animal *Hyaena picta*, erroneously classifying it as a species of hyena. It was later recognised as a canid by Joshua Brookes in 1827, and renamed *Lycaon tricolor*. The root word of *Lycaon* is the Greek λυκαίος (*lykaios*), meaning 'wolf-like'. The specific epithet *pictus* (Latin for 'painted'), which derived from the original *picta*, was later returned to it, in conformity with the International Rules on Taxonomic Nomenclature.[13]

The English language has several names for *Lycaon pictus*, including painted lycaon,[12] African wild dog, Cape hunting dog,[8] and painted dog or painted wolf. The latter name is being promoted by some conservationists as a way of 're-branding' the species, as 'wild dog' has several negative connotations that could be detrimental to its image.[14] Nevertheless, the name 'African wild dog' is still widely used.[15]

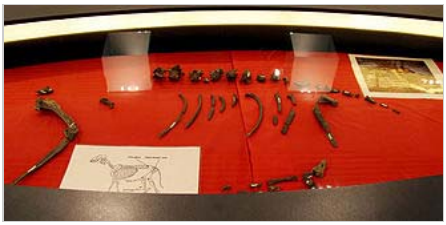
Indigenous names for *Lycaon pictus*[8]

Linguistic group or area	Indigenous name
Afrikaans	*wildehond*
Amharic	ታኩላ (*takula*)
Ateso	*apeete*
Damara	*!Gaub*
isiNdebele	*iganyana iketsi leKapa*
isiXhosa	*ixhwili*
isiZulu	*inkentshane*
Kalenjin	*suyo*
Kibena	*liduma*
Kibungu	*eminze*
Kichagga	*kite kya nigereni*
Kihehe	*ligwami*
Kijita	*omusege*
Kikamba	*nzui*
Kikuyu	*muthige*
Kiliangulu	*eeyeyi*
Kimarangoli	*imbwa*
Kinyaturu	*mbughi*
Kinyiha	*inpumpi*
Kinyiramba	*mululа*
Kisukuma	*mhuge*
Kiswahili	*mbwa mwitu*
Kitaita	*Kikwau*
Kizigua	*mauzi*
Limeru	*mbawa*
Lozi	*liakanyani*
Luo	*sudhe, prude*
Maasai	*osuyiani*
Mandingue	*juruto*
Nama	*!Gaub*
Pulaar	*saafandu*
Samburu	*Suyian*
Sebei	*kulwe, suyondet*
Sepedi	*lehlalerwa, letaya*
Sesotho	*lekanyane, mokoto, tlalerwa*
Setswana	*leteane, letlhalerwa, lekanyana*
Shona	*mhumhi*

siSwati	*budzatja, inkentjane*
Tshivenda	*dalerwa*
Woloof	*saafandu*
Xitsonga	*hlolwa*
Yei	*umenzi*

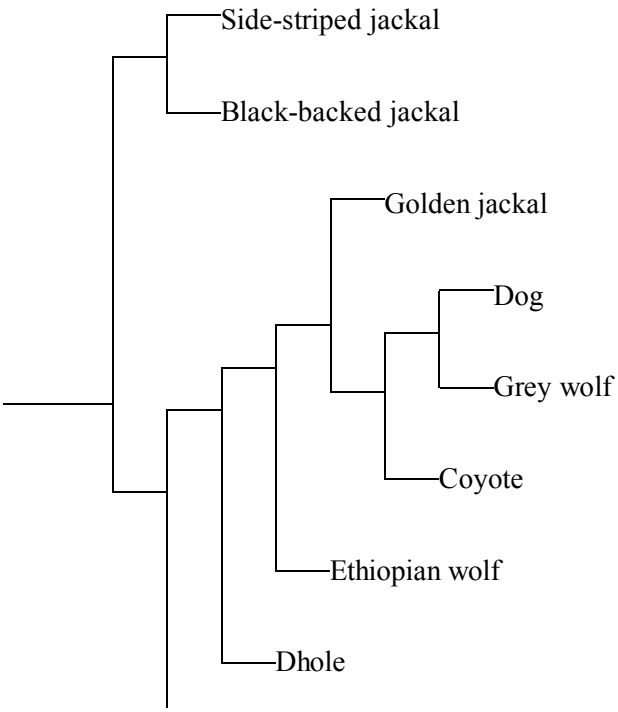
Taxonomy and evolution

The evolution of the African wild dog was once poorly understood, due to the scarcity of fossil finds. One proposed ancestral genus was *Xenocyon*, which lived throughout Eurasia, from Germany to Japan, as well as in Africa from the Early Pleistocene to the early Middle Pleistocene. The species *X. falconeri* shared the African wild dog's absent first metacarpal (dewclaw), though its dentition was still relatively unspecialised.[16] This connection was however rejected, as *X. falconeri's* missing metacarpal was a poor indication of phylogenetic closeness to the African wild dog, and the dentition was too different to imply ancestry. A more likely ancestral candidate is the Plio-Pleistocene *L. sekowei* of South Africa, on the basis of skull shape and tooth morphology, which shows the same adaptations to a hypercarnivorous diet as the modern species. *L. sekowei* had not yet lost the first metacarpal absent in *L. pictus*, and was more robust than the modern species, having 10% larger teeth.[3]



Fossil of *Lycaon sekowei*, a possible ancestor of the modern *L. pictus*.

Paleontologist George G. Simpson placed *L. pictus* in the subfamily Simocyoninae, along with *Cuon alpinus* and *Speothos venaticus*, on the basis of all three species having similarly trenchant carnassials. This grouping was disputed by Juliet Clutton-Brock, who argued that other than dentition, there were too few similarities between the three species to warrant classifying them in a single subfamily.[6] The species' molecular genetics indicate that, although it is far removed from the genus *Canis*, it is nonetheless more closely related to it than to other canid lineages.[17] Phylogenetic studies place *L. pictus* and *Cuon alpinus* into a monophyletic clade alongside some members of the *Canis* genus, including *C. simensis*, *C. aureus*, *C. latrans*, and *C. lupus*, while the more basal *C. adustus* and *C. mesomelas* are excluded from it.[18](Fig. 10)



└──**African wild dog**

Subspecies

As of 2005,[19] five subspecies are recognised by MSW3:

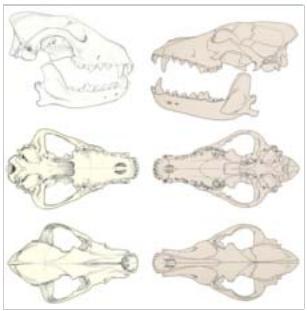
Subspecies	Image	Trinomial authority	Description	Range	Synonyms
Cape wild dog *L. p. pictus* Nominate subspecies		Temminck, 1820	Specimens inhabiting the Cape are characterised by the large amount of orange-yellow fur overlapping the black, the partially yellow backs of the ears, the mostly yellow underparts, and a number of whitish hairs on the throat mane. Those in Mozambique are distinguished by the almost equal development of yellow and black on both the upper and underparts of the body, as well as having less white fur than the Cape form.[20]	Southern Africa	*cacondae* (Matschie, 1915), *fuchsi* (Matschie, 1915), *gobabis* (Matschie, 1915), *krebsi* (Matschie, 1915), *lalandei* (Matschie, 1915), *tricolor* (Brookes, 1827), *typicus* (A. Smith, 1833), *venatica* (Burchell, 1822), *windhorni* (Matschie, 1915), *zuluensis* (Thomas, 1904)
East African wild dog *L. p. lupinus*		Thomas, 1902	Distinguished by its very dark coat, with very little yellow.[20]	East Africa	*dieseneri* (Matschie, 1915), *gansseri* (Matschie, 1915), *hennigi* (Matschie, 1915), *huebneri* (Matschie, 1915), *kondoae* (Matschie, 1915), *lademanni* (Matschie, 1915), *langheldi* (Matschie, 1915), *prageri* (Matschie, 1912), *richteri* (Matschie, 1915), *ruwanae* (Matschie, 1915), *ssongaeae* (Matschie, 1915), *stierlingi* (Matschie, 1915), *styxi* (Matschie, 1915), *wintgensi* (Matschie, 1915)
West African wild dog *L. p. manguensis*		Matschie, 1915		West and Central Africa	*mischlichi* (Matschie, 1915)

Chadian wild dog *L. p. sharicus*		Thomas and Wroughton, 1907		Chad	*ebermaieri* (Matschie, 1915)
Somali wild dog *L. p. somalicus*		Thomas, 1904	Similar to *lupinus*, but is smaller, has shorter and coarser fur, and has a weaker dentition. Its colour closely approaches that of the Cape form, with the yellow parts being buff rather than bright orange as is the case in *lupinus*.[20]	Horn of Africa	*luchsingeri* (Matschie, 1915), *Matschie* (Matschie, 1915), *rüppelli* (Matschie, 1915), *takanus* (Matschie, 1915), *zedlitzi* (Matschie, 1915)

Nevertheless, although the species is genetically diverse, these subspecific designations are not universally accepted. It was once thought that East African and Southern African *L. pictus* populations were genetically distinct, based on a small number of samples. More recent studies with a larger number of samples showed that there has been extensive intermixing between East African and Southern African populations in the past. Some unique nuclear and mitochondrial alleles are found in Southern African and north-eastern African populations, with a transition zone encompassing Botswana, Zimbabwe and south-eastern Tanzania between the two. The West African *L. pictus* population may possess a unique haplotype, thus possibly constituting a truly distinct subspecies.[21]

Physical description

The African wild dog is the bulkiest and most solidly built of African canids.[2] The species stands 60–75 cm (24–30 in) in shoulder height, and weighs 20–25 kg (44–55 lb) in East Africa and up to 30 kg (66 lb) in southern Africa.[5] Females are generally 3–7% smaller than males. Compared to members of the genus *Canis*, the African wild dog is comparatively lean and tall, with outsized ears and lacking dewclaws. The middle two toepads are usually fused. Its dentition also differs from that of *Canis* by the degeneration of the last lower molar, the narrowness of the canines, and proportionately large premolars, which are the largest relative to body size than any other carnivore other than hyenas.[4] The heel of the lower carnassial M1 is crested with a single blade-like cusp, which enhances the shearing capacity of the teeth and thus the speed at which prey can be consumed. This feature, termed "trenchant heel", is shared with two other canids: the Asian dhole and the South American bush dog.[8] The skull is relatively shorter and broader than that of other canids.[2]



L. pictus skull (**left**) compared with that of *C. lupus* (**right**). Note the former's shorter muzzle and fewer molars.

The fur of the African wild dog differs significantly from that of other canids, consisting entirely of stiff bristle-hairs with no underfur.[2] It gradually loses its fur as it ages, with older specimens being almost naked. Colour variation is extreme, and may serve in visual identification, as African wild dogs can recognise each other at distances of 50–100 metres.[4] There is some geographic variation in coat colour, with north-east African specimens tending to be predominantly black with small white and yellow patches, while southern African ones are more brightly coloured, sporting a mix of brown, black and white coats.[8] Much of the species' coat patterning occurs on the trunk and legs. There is little variation in facial markings, with the muzzle being black, gradually shading into brown on the cheeks and forehead. A black line extends up the forehad, turning blackish-brown on the back of the ears. A few specimens sport a brown teardrop shaped mark below the eyes. The back of the head and neck are either brown or yellow. A white patch occasionally

occurs behind the forelegs, with some specimens having completely white forelegs, chests and throats. The tail is usually white at the tip, black in the middle and brown at the base. Some specimens lack the white tip entirely, or may have black fur below the white tip. These coat patterns are asymmetrical, with the left side of the body often having different markings from that of the right.[4]

Behaviour

Social and reproductive behaviour

Springbok kill, Tswalu Kalahari Reserve, South Africa

Play fighting after a kill, Tswalu Kalahari Reserve, South Africa

The African wild dog has very strong social bonds, stronger than those of sympatric lions and spotted hyenas, thus solitary living and hunting is extremely rare in the species.[22] It lives in permanent packs consisting of 2–27 adults and yearling pups. The average pack size in Kruger National Park and the Masai Mara is 4–5 adults, while packs in Moremi and Selous contain an average of 8–9. However, larger packs have been observed, and temporary aggregations of hundreds of individuals may have gathered in response to the seasonal migration of vast springbok herds in Southern Africa.[23] Males and females have separate dominance hierarchies, with the latter usually being led by the oldest female. Males may be led by the oldest male, but these can be supplanted by younger specimens, thus some packs may contain elderly former male pack leaders. The dominant pair typically monopolises breeding.[4] The species differs from most other social species by the fact that males remain in the natal pack, while females disperse (a pattern also found in primates like gorillas, chimpanzees and red colobuses). Furthermore, males in any given pack tend to outnumber females 3:1.[5] Dispersing females will join other packs and evict some of the resident females related to the other pack members, thus preventing inbreeding and allowing the evicted specimens to find new packs of their own and breed.[4] Males rarely disperse, and when they do, they are invariably rejected by other packs already containing males.[5] Although arguably the most social canid, the species lacks the elaborate facial expressions and body language found in the grey wolf, likely because of the African wild dog's less hierarchical social structure. Furthermore, while elaborate facial expressions are important for wolves in re-establishing bonds after long periods of separation from their family groups, they are not as necessary to African wild dogs, which remain together for much longer periods.[6]

African wild dog populations in East Africa appear to have no fixed breeding season, whereas those in Southern Africa usually breed during the April–July period.[22] During estrus, the female is closely accompanied by a single male, who keeps other members of the same sex at bay.[5] The copulatory tie characteristic of mating in most canids has been reported to be absent[24] or very brief (less than one minute)[25] in *L. pictus*, possibly an adaptation to the prevalence of larger predators in its environment.[26] The gestation period lasts 69–73 days, with the interval between each pregnancy being 12–14 months on average. The African wild dog produces more pups than any other canid, with litters containing around 6–16 pups, with an average of 10, thus indicating that a single female can produce enough young to form a new pack every year. Because the amount of food necessary to feed more than two litters would be impossible to acquire by the average pack, breeding is strictly limited to the dominant female, which may kill the pups of subordinates. After giving birth, the mother stays close to the pups in the den, while the rest of the pack hunts. She typically drives away pack members approaching the pups until the latter are old enough to eat solid food at 3–4 weeks of age. The pups leave the den at around the age of three weeks, and are suckled outside. The pups are weaned at the age of five weeks, at which point they are fed regurgitated meat by the

other pack members. By seven weeks, the pups begin to take on an adult appearance, with noticeable lengthening in the legs, muzzle and ears. Once the pups reach the age of 8–10 weeks, the pack abandons the den, and the young follow the adults during hunts. The youngest pack members are permitted to eat first on kills, a privilege which ends once they become yearlings.[5]

Hunting and feeding behaviours

L. p. pictus pack, Kruger National Park, South Africa.

The African wild dog is a specialised pack hunter of common medium-sized antelopes. Like the cheetah, it is the only primarily diurnal African large predator.[5] *L. pictus* hunts by approaching prey silently then chasing it in a pursuit clocking at 66 kmph for 10 to 60 minutes.[23] The average chase typically only goes as far as 2 km, during which time the prey animal, if large, is repeatedly bitten on the legs, belly and anus until it stops running, while smaller prey is simply pulled down and torn apart. *L. pictus* hunting strategies differ according to prey, with wildebeest being rushed at in order to panic the herd and isolate a vulnerable individual, whereas territorial antelope species, which defend themselves by running in wide circles, are captured by cutting off their escape routes. Medium-sized prey is often killed in 2–5 minutes, whereas larger prey like wildebeest may take half an hour to pull down. Male wild dogs usually perform the task of grabbing dangerous prey, such as warthogs, by the nose.[27] Small prey, like rodents, hares and birds are hunted singly, with dangerous prey like cane rats and porcupines being killed with a quick and well placed bite in order to avoid injury. Small prey is eaten entirely, while large animals are stripped of their meat and organs, with the skin, head, skeleton left intact.[22] The African wild dog is a fast eater, with a pack being able to consume a Thompson's gazelle in 15 minutes. In the wild, the species' consumption rate is of 1.2–5.9 kg per African wild dog a day, with one pack of 17–43 specimens in East Africa having been recorded to kill three animals per day on average.[15] Unlike most social predators, it will regurgitate food for adult, as well as young family members.[22] Pups old enough to eat solid food are given first priority at kills, eating even before the dominant pair; subordinate adult dogs help feed and protect the pups.[28] The African wild dogs is a highly successful hunter, with the majority of its chases ending in kills.[29]

Ecology

Habitat

The African wild dog is mostly found in savanna and arid zones, generally avoiding forested areas.[5] This preference is likely linked to the animal's hunting habits, which require open areas which do not obstruct vision or impede pursuit.[2] Nevertheless, it will travel through scrub, woodland and montane areas in pursuit of prey. However, forest-dwelling populations of African wild dogs have been identified, including one in the Harenna Forest, a wet montane forest up to 2400m in altitude in the Bale Mountains of Ethiopia.[30] There is at least one record of a pack being sighted on the summit of Mount Kilimanjaro.[5] In Zimbabwe, the species has been recorded at altitudes of 1,800 metres.[15]

Diet

In East Africa, its most common prey is Thomson's gazelle, while in Central and Southern Africa it targets impala, reedbuck, kob, lechwe, and springbok.[5] Its diet is not restricted to these animals though, as it will also hunt wildebeest, warthog, oribi, duiker, waterbuck, Grant's gazelle, zebra, bushbuck, ostrich, African buffalo (especially calves),[31] and smaller prey like dik-dik, hares, spring hares and cane rats.[22] Certain packs in the Serengeti specialized in hunting zebras in preference to other prey.[32] One pack was recorded to occasionally prey on bat-eared foxes, rolling on the carcasses before eating them. *L. pictus* rarely scavenges, but has on occasion been observed to appropriate carcasses from spotted hyenas, leopards, and lions, as well as animals caught in snares.[15]

Enemies and competitors

L. p. pictus pack consuming a blue wildebeest, Madikwe Game Reserve, South Africa.

Lions dominate African wild dogs, and are a major source of mortality for both adults and pups.[7] Population densities of African wild dogs are low in areas where lions are more abundant.[33] One pack reintroduced into Etosha National Park was destroyed by lions, and a population crash in lions in the Ngorongoro Crater during the 1960s resulted in an increase in African wild dog sightings, only for their numbers to decline once the lions recovered.[7] However, there are a few reported cases of old and wounded lions falling prey to African wild dogs.[34][35]

Spotted hyenas are important kleptoparasites,[7] and will follow packs of African wild dogs in order to appropriate their kills. They will typically inspect areas where African wild dogs have rested and eat any food remains they find. When approaching African wild dogs at a kill, solitary hyenas will approach cautiously and attempt to take off with a piece of meat unnoticed, though they may be mobbed in the attempt. When operating in groups, spotted hyenas are more successful in pirating African wild dog kills, though the latter's greater tendency to assist each other puts them at an advantage against spotted hyenas, who rarely work in unison. Cases of African wild dogs scavenging from spotted hyenas are rare. Although African wild dog packs can easily repel solitary hyenas, on the whole, the relationship between the two species is a one sided benefit for the hyenas,[36] with African wild dog densities being negatively correlated with high hyena populations.[37]

Range

African wild dogs once ranged from the desert and mountainous areas of much of sub-Saharan Africa, being absent in the driest desert regions and lowland forests. The species has been largely exterminated in North and West Africa, and has been greatly reduced in number in Central Africa and northeast Africa. The majority of the species' population now occurs in Southern Africa and southern East Africa.[1]

Status

North Africa

The species is very rare in North Africa, and whatever populations remain may be of high conservation value, as they are likely to be genetically distinct from other *L. pictus* populations.[38]

Country	Status	Distribution
Algeria	Although historically present, *L. pictus* is probably extinct, though may exist as a relict population in the south.[38]	As of 1997, the only recent reports come from the Teffedest Mountains. The species once occurred in the Mouydir Arah Mountains, but has disappeared, likely due to trapping and poisoning by Tuareg tribesmen. The last sighting in the Ahaggar National Park was in 1989.[38]
Mauritania	Probably not present.[38]	There was at least one unconfirmed sighting in 1992, and hunters living in the coastal areas of Western Sahara described a pack-hunting canid resembling *L. pictus*, though the identity of this animal is unconfirmed.[38]

West Africa

The species is faring poorly in most of West Africa, with the only potentially viable population occurring in Senegal's Niokolo-Koba National Park. African wild dogs are occasionally sighted in other parts of Senegal, as well as in Guinea and Mali.[38]

Country	Status	Distribution
Benin	*L. pictus* is most likely extinct, with a survey taken in 1990 indicating that locals thought that the species' continued survival in the country extremely unlikely.[38]	Parc W might hold the country's remaining *L. pictus* populations, though they were considered either declining or extinct in 1988. It may occur in declining numbers in Pendjari National Park.[38]
Burkina Faso	*L. pictus* is likely extinct, and widespread poverty prevents effective wildlife protection, despite the species' protected legal status.[38]	The last sightings of the animal occurred in 1985 in the Nazinga Game Ranch. It might still occur in the Arli National Park and the Comoé Province, but in low numbers.[38]
Gambia	The most recent sighting occurred in 1995, on the northern border with Senegal.[38]	A small population may occur on the border area with Senegal.[38]
Ghana	Although *L. pictus* is legally protected, it is probably extinct, as poaching is rampant and traditional attitudes toward predators are hostile.[38]	Although there have been no recent sightings, the species may still occur in Bui and Digya National Park. Hunters have reported the presence of *L. pictus* in the Kyabobo National Park, though the species is probably rare there.[38]
Guinea	Although protected, the outlook for *L. pictus* in Guinea is poor.[38]	The species may occur in Badiar National park, as the park is adjacent to Senegal's Niokolo-Koba National Park, where *L. pictus* does occur. The most recent reports of the species include a sighting in 1991 along the Sankarani River and the deaths of three cows in 1996 in the Ndama Fôret Clasée.[38]
Ivory Coast	There have been very few sightings, and the majority of the public hasn't heard of the species. Furthermore, its legal status is 'noxious'.[38]	The species may still occur in Comoé National Park (where it was last sighted in the late 1980s) and Marahoué National Park (where the last sightings occurred during the 1970s).[38]
Liberia	Liberian folklore makes no mention of *L. pictus*, thus indicating that the species has probably never been common in the area.[38]	The species may have once inhabited the north, but it is almost certainly rare there now.[38]
Mali	Although once widespread, *L. pictus* is now extremely rare in Mali. Although sighted in the Forêt Classée de la Faya in 1959, the species was notably absent during a ground survey in the 1980s.[38]	The species may still occur in the south and west of the country, in the border regions with Senegal and Guinea.[38]
Niger	The species is almost certainly extinct, having been the subject of an extermination campaign during the 1960s. Although legally protected, *L. pictus* specimens were still shot by game guards as recently as 1979. Even if still present, the species' chances of	*L. pictus* may still be present in low numbers in Parc W, in the extreme north and the Sirba region.[38]

	survival are still low, due to regular droughts and loss of natural prey.[38]	
Nigeria	Although legally protected, there are no resident *L. lycaon* populations in Nigeria, though vagrants from neighbouring countries occasionally appear. Factors inhibiting the species' recovery include a lack of effective protection and the drastic reduction of its prey.[38]	*L. pictus* may still persist in low numbers in Gashaka Gumti National Park, which is fairly close to Cameroon's Faro National Park, where the species still occurs, though there were no sightings in 1982–1986. *L. pictus* is occasionally reported in Chingurmi-Duguma National Park, with the most recent sighting having occurred in 1995. It is likely extinct in Kainji National Park and Borgu Game Reserve, as poaching is intense and the species has not been sighted since the 1980s. It is also extinct in Yankari National Park, with the last sighting having taken place in 1978. One confirmed sighting of a lone individual occurred in 1991 in the Lame Burra Game Reserve.[38]
Senegal	Although only partially protected, *L. pictus* has increased in number since the 1990s in and around Niokolo-Koba National Park, thus making Senegal the best hope for the species in West Africa.[38]	*L. pictus* is present in increasing numbers in and around Niokolo-Koba National Park. The population in the Park was estimated to number 50-100 specimens in 1997. This population is monitored and studied by the IUCN's Canid Specialist Group, in conjunction with Senegal's Licaone Fund. Elsewhere, *L. pictus* is rare or extinct.[38]
Sierra Leone	The species is almost certainly extinct in Sierra Leone.[38]	*L. pictus* may have once been present in the northern savannah-woodland areas, as natives there have names for the species, and some unconfirmed sightings were made in the 1980s. There may be a small population in Outamba-Kilimi National Park, though there has only ever been one unconfirmed sighting.[38]
Togo	Despite receiving partial protection, *L. pictus* is probably extinct, and the country is severely lacking in prey species.[38]	It may occur in Fazao Mafakassa National Park, though in very low numbers. There are rumours of some small *L. pictus* packs taking refuge in caves on the mountain-sides of Mazala, Kpeya, and Kbidi.[38]

Central Africa

The species is doing poorly in Central Africa, being extinct in Gabon, the Democratic Republic of Congo and the Republic of Congo. The only viable populations occur in the Central African Republic, Chad and especially in Cameroon.[38]

Country	Status	Distribution
Cameroon	The status of *L. pictus* in Cameroon is uncertain, though three packs occur in the north of the country, thus making it the only possible refuge for the species in Central Africa, along with those present in CAR and southern Chad. Historically, most conservation efforts were directed to rainforest reserves, where *L. pictus* does not occur, though efforts in the 1990s sought to redress this. Nevertheless, attitudes towards the species remain negative, with 25 specimens having been killed by professional hunters in northern Cameroon in 1991–1992, with a government quota of 65 specimens during the December 1995 – May 1996 hunting season.[38]	The species is still regularly sighted in and around Faro National Park, where four packs were recorded in 1997. It is present in smaller numbers in Bénoué National Park, with several sightings having occurred in 1989 in the area between the two parks. *L. pictus* was sighted several times in and around Bouba Njida National Park in 1993.[38]
Central African Republic	Although afforded total legal protection, CAR's *L. pictus* population has an uncertain future, though it is not far from the larger Cameroonian population.[38]	The species is very rare in Manovo-Gounda St. Floris National Park, with sightings having been reported as recently as 1992. It was once reportedly common in the Bamingui-Bangoran National Park and Biosphere Reserve during the 1980s, though there were only two sightings in 1988–1990.[38]
Chad	There are no recent reports of *L. pictus* in Chad, and their legal status is unknown. If the species does occur, then the southern part of the country may form an important link between Cameroonian and CAR *L. pictus* populations.[38]	The species was already considered rare in the Ouadi Rimé-Ouadi Achim Faunal Reserve during the 1980s, and has not been sighted since. It is considered extinct in Zakouma National Park and the Bahr Salamat Faunal Reserve. There are no recent records of the species in Manda National Park and the Siniaka-Minia Faunal Reserve, though they once occurred in reasonable numbers during the 1980s.[38]
Republic of the Congo	Although afforded total legal protection, *L. pictus* has not been sighted in the Republic of Congo since the 1970s.[38]	The species may have once inhabited Odzala National Park, though it occurred largely in unprotected areas, where it preyed on livestock and was subsequently exterminated by local pastoralists.[38]
Democratic Republic of Congo	Although the DRC once held a healthy *L. pictus* population, it has probably been extinct since the late 1990s.[38]	The most recent sighting occurred in 1986 in Upemba National Park.[38]
Equatorial Guinea	The species is extinct in Equatorial Guinea.[38]	There are no records of the species on the island of Bioko and Río Muni.[38]

Gabon	*L. pictus* is probably extinct.[38]	The species was apparently once present in the Petit Loango National Park, but has not been sighted in years.[38]

East Africa

L. pictus's range in East Africa is patchy, having been eradicated in Uganda and much of Kenya. A small population occupies an area encompassing southern Ethiopia, South Sudan, northern Kenya, and probably northern Uganda. The species may still occur in small numbers in southern Somalia, and is almost certainly extinct in Rwanda, Burundi, and Eritrea. Nevertheless, it remains somewhat numerous in southern Tanzania, particularly in the Selous Game Reserve and Mikumi National Park, both of which are occupied by what could be Africa's largest *L. pictus* population.[38]

Country	Status	Distribution
Burundi	Declared extinct in 1976.[38]	There are no reports in the large protected areas of Kibira and Ruvubu National Park, and the remaining areas are too small to support the species.[38]
Djibouti	No data.[38]	The only protected area, Day Forest National Park, is unlikely to support the species.[38]
Eritrea	Probably extinct.[38]	There are no recent records, though reports from the early 1900s indicate that the species once occurred in some remote areas, including the future Yob Wildlife Reserve.[38]
Ethiopia	*L. pictus* is rare in Ethiopia, despite total legal protection and the government's efforts at strengthening its network of protected areas. The species has been extirpated in three national parks, though it still occurs in the south of the country.[38]	The species was once occasionally recorded in and around Gambela National Park, though the last sighting occurred in 1987. It is frequently sighted in the Omo and Mago National Parks, with the most recent sighting in the former having occurred in 1995. Between 1992–1993, it was estimated that there were one or two packs in Omo and upt to five in Mago. It occasionally occurs in Bale Mountains National Park, though it is hampered by rabies and persecution by shepherds. Sporadic sightings have also occurred in the Awash and Nechisar National Parks. Three specimens were sighted in the Yabelo Wildlife Sanctuary in 1996. Outside protected areas, the species has been reported in Jijiga and Filtu.[38]
Kenya	Although widespread, the species receives only partial legal protection, and primarily occurs in unprotected areas, with no high population densities. *L. pictus* numbers have declined, and it has become locally extinct in many areas, with only 15 packs occurring throughout the entire country as of 1997. Local attitudes towards it are poor, and it is frequently shot in livestock areas.[38]	It is occasionally sighted in the southern part of the Lake Turkana National Parks and the surrounding Turkana County. Vagrant individuals are sometimes sighted at the border with Sudan, as well as in the northeast, around Mandera, Wajir, and Marsabit National Park. It is rarely encountered in the Samburu National Reserve, and has been absent from the Buffalo Springs National Reserve since the mid-1980s. It was observed twice in 1982–1983 in the Kora National Reserve. It is now absent from Mount Kenya, though it was reportedly common in the 1950s. *L. pictus* is probably extinct in Lake Nakuru National Park, and a fence erected around the park to protect rhinos prevents the species from recolonising the area. It was twice sighted outside Nairobi National Park, though it is regularly shot and snared there. The species disappeared from the Maasai Mara in 1991 after a disease outbreak. It may still be present in the Rift Valley Province and East and West Tsavo. It is still present in small numbers in the Lamu District, but is declining in the Dodori National Reserve, and may be absent in the Tana River Primate Reserve.[38]
Rwanda	Although legally protected, *L. pictus* is extinct in Rwanda, likely due to a disease outbreak. Modern Rwanda's overly high human population makes the country unsuitable for future *L. pictus* recolonisation, and a reintroduction project in 1989 was thwarted by the onset of	The species once occurred in high numbers in Akagera National Park, to the point of it being known as *Le Parc aux Lycaons*. A disease outbreak wiped out this population in 1983–1984.[38]

	the Rwandan Civil War.[38]	
Somalia	The ongoing Somali Civil War has made the outlook of *L. pictus* very poor in the country, with deforestation, poaching, drought, and over-grazing preventing the species from recovering, despite it being legally protected.[38]	The species may still be present in the north, though the last sighting occurred in 1982. It was once common in the Buloburde District before the late 1970s. A probably declining population may occur near the Jubba River. One pack was sighted in 1994 in Lag Badana National Park, which may be the best stronghold for the species in Somalia.[38]
Sudan South Sudan	As with all large carnivores, *L. pictus* populations fell drammatically during the Second Sudanese Civil War, though sightings have occurred in South Sudan.[38]	The species once occurred in the Sudd, though updates are lacking, and it is not afforded any legal protection in the area. It may be present in the Bangagai Game Reserve and Southern National Park. A pack was sighted in 1995 in Dinder National Park.[38]
Tanzania	Prospects in Tanzania are good for *L. pictus*, as the government imposed a moratorium on all hunting of the species, and it receives full legal protection. Although rare in the north, the south offers ideal habitat, as large tsetse fly populations prevent widespread human colonisation. The Selous Game Reserve and probably Ruaha National Park represent the best strongholds for the species in all of Africa.[38]	The species is common in the Selous Game Reserve, where about 880 adult specimens were estimated in 1997. It is also present in neighbouring Mikumi National Park, and has been sighted in other nearby areas. *L. pictus* may no longer occur in Serengeti National Park, with only 34 individuals being counted in late 1990. It is occasionally seen in the Kilimanjaro and Arusha National Parks.[38]
Uganda	It is unlikely that Uganda has a resident *L. pictus* population, as the species was heavily persecuted after a 1955 directive to shoot it on sight. Vagrant specimens occasionally enter the country via Tanzania and South Sudan.[38]	A survey taken in 1982–1992 showed that the species was likely extirpated in Uganda, though sightings in some scattered areas may indicate that *L. pictus* is recolonising the country. Single individuals and small packs were sighted in Murchison Falls National Park, and were seen several times in the Northern Karamoja Controlled Hunting Area in 1994.[38]

Southern Africa

Southern Africa contains numerous viable *L. pictus* populations, one of which encompasses northern Botswana, northeastern Namibia and western Zimbabwe. In South Africa, around 400 specimens occur in the country's Kruger National Park. Zambia holds two large populations, one in Kafue National Park, and another in the Luangwa Valley. However, the species is rare in Malawi, and probably extinct in Angola and Mozambique.[38]

Country	Status	Distribution
Angola	Although *L. pictus* is legally protected, the Angolan Civil War prevented the collection of data, and there have been no reports of the species since 1990.[38]	The species was once found throughout Angola's protected areas, though it went into decline during the mid-1970s. It may still occur in the Cuando Cubango Province, where vagrants may arrive from Zambia and Namibia, though the population is probably unviable.[38]
Botswana	The species' prospects in Botswana are hopeful, with the north of the country probably holding the largest *L. pictus* populations in all of Africa. Nevertheless, it receives only partial protection, and farmers are permitted to shoot it in defence of livestock.[38]	The species' most important stronghold in Botswana is Ngamiland, which includes the Okavango Delta, the Moremi Game Reserve, and Chobe National Park. In 1997, at least 42 packs containing 450–500 individuals were estimated in the area. *L. pictus* is scarce elsewhere.[38]
Malawi	Although rare, *L. pictus* is legally protected, and may only be taken by government hunters and private citizens with ministerial permits. By the 1990s, it was regularly sighted in Kasungu National Park.[38]	The species was regularly reported in Kasungu National Park in the 1990s, where there were 18 sightings in 1991 alone. It occurs in low numbers in Nyika National Park and the Mwabvi Wildlife Reserve.[38]
Mozambique	The outlook of *L. pictus* in Mozambique is poor. The species underwent a rapid reduction in numbers after the Mozambican War of Independence in 1975, reaching the verge of extinction by 1986. Nevertheless, it regularly enters the country via Kruger National Park in neighbouring South Africa.[38]	*L. pictus* was once widely distributed in the remote and protected areas of the country, though it was declared extinct in western Manica, endangered in Tete and Zambezi, and extinct in Nampula. The species still occurred in the Rovuma and Lugenda River regions in 1986, and a pack with pups was sighted in Cahora Bassa in 1996.[38]
Namibia	Although heavily persecuted by farmers throughout the country, the species has full legal protection and is doing well in the northeastern part of the country.[38]	The species is restricted to the northeast, being extinct elsewhere. The northeastern population is probably connected to that in northern Botswana.[38]
South Africa	South Africa's *L. pictus* population is listed as 'specially protected' in the South African Red Data Book, and it has a stronghold in Kruger National Park, which held 350–400 specimens in the mid-1990s. There have been several attempts to reintroduce the species elsewhere, though only two of these attempts proved successful, and the resulting populations were not large enough to be viable.[38]	The species occurs in three regions: the Northern Cape, Kruger National Park, and KwaZulu-Natal. The Kruger population numbers at around 375–450 specimens, though they face pressure from lions and spotted hyenas, and are sometimes shot or snared outside Park boundaries. Six specimens were released into the Madikwe Game Reserve during the 1990s, though the reserve is too small to sustain a large population. In KwaZulu-Natal, the species is present in Hluhluwe–iMfolozi Park, where it was reintroduced during the early 1980s. This population has fluctuated since the reintroduction, and local attitudes towards it vary from hostile to favourable.[38]

Swaziland	There appears to be no resident population in the country.[38]	*L. pictus* has only been sighted once, when a pack was observed to kill a blesbok in December 1992, staying in the area for two weeks before disappearing.[38]
Zambia	Although once extensively persecuted, the species has total legal protection in Zambia, and can only be hunted after purchasing a costly licence from the Minister of Tourism. *L. pictus* remains widespread and occurs in most protected areas, which are large and hold suitable habitat and prey. Nevertheless, populations have declined since 1990.[38]	The species was present in declining numbers in Lusenga Plain National Park in 1988, and have not been reported there since. Sightings have occurred in Sumbu National Park, where the species is likely declining due to disease. Small numbers were recorded in North Luangwa National Park in 1994, and are occasionally seen in the adjoining Musalangu and Lumimba Game Management Areas. It is often sighted in South Luangwa National Park, where it was previously declining due to an anthrax outbreak. Occasional sightings also occur in the Lupande Game Management Area, Luambe National Park, Lukusuzi National Park, and the Lower Zambezi National Park.[38]
Zimbabwe	Zimbabwe holds viable *L. pictus* populations, which were estimated to consist of 310–430 individuals in 1985. The population increased during the 1990s, with a survey taken in 1990–1992 having estimated the population to be made up of 400–600 animals. The species is legally protected, and can only be hunted with a permit, which has only been given once between 1986–1992.[38]	The bulk of *L. pictus* populations in Zimbabwe occurs in and around Hwange National Park, including Victoria Falls National Park, Matetsi and Deka Safari Areas, and Kazuma Pan National Park. Collectively, these areas contain an estimated 35 packs made up of 250–300 individuals.[38]

In African cultures

Artistic depictions of African wild dogs are prominent on cosmetic palettes and other objects from Egypt's predynastic period, likely symbolising order over chaos, as well as the transition between the wild (represented by the golden jackal) and the domestic (represented by the dog). Predynastic hunters may have also identified with the African wild dog, as the Hunters Palette shows them wearing the animals' tails on their belts. By the dynastic period, African wild dog illustrations became much less represented, and the animal's symbolic role was largely taken over by the jackal.[9][10]

The African wild dog also plays a prominent role in the mythology of Southern Africa's San people. In one story, the animal is indirectly linked to the origin of death, as the hare is cursed by the moon to be forever hunted by African wild dogs after the former animal rebuffs the moon's promise to allow all living things to be reborn after death. Another story has the god Cagn taking revenge on the other gods by sending a group of men transformed into African wild dogs to attack them, though who won the battle is never revealed. The San of Botswana see the African wild dog as the ultimate hunter, and traditionally believe that shamans and medicine men can transform themselves into the animal. Some San hunters will smear African wild dog bodily fluids on their feet prior to a hunt, under the belief that doing so will gift them with the animal's boldness and agility. Nevertheless, the species does not figure prominently in San rock art, with the only notable example being a frieze in Mount Erongo showing a pack hunting two antelopes.[11]

See also

- Painted Dog Conservation[39]
- Botswana Wild Dog Research Project[40]
- Institute of Zoology Wild dog research[41]
- Harnas Wildlife Foundation (http://www.harnas.org/projects/wild-dog/)
- African Wild Dog Conservancy[42]
- Wildlife Conservation Network[43]

Cosmetic palette from the Naqada III period depicting African wild dogs, Louvre.

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External links

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- Painted Dog Conservation (conservation organization) (http://www.painteddog.org/)
- Photos, videos and information from ARKive (http://www.arkive.org/african-wild-dog/lycaon-pictus/)

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