The **tiger** (*Panthera tigris*) is the largest <u>living cat species</u> and a member of the <u>genus Panthera</u>. It is most recognisable for its dark vertical stripes on orange fur with a white underside. An <u>apex predator</u>, it primarily preys on <u>ungulates</u> such as <u>deer</u> and <u>wild boar</u>. It is territorial and generally a <u>solitary but social</u> predator, requiring large contiguous areas of <u>habitat</u>, which support its requirements for <u>prey</u> and rearing of its offspring. Tiger cubs stay with their mother for about two years, then become independent and leave their mother's <u>home range</u> to establish their own.

The tiger was first <u>scientifically described</u> in 1758 and once ranged widely from the <u>Eastern Anatolia Region</u> in the west to the <u>Amur River</u> basin in the east, and in the south from the foothills of the <u>Himalayas</u> to <u>Bali</u> in the <u>Sunda Islands</u>. Since the early 20th century, tiger populations have lost at least 93% of their historic range and have been <u>extirpated</u> from <u>Western</u> and <u>Central Asia</u>, the islands of <u>Java</u> and <u>Bali</u>, and in large areas of <u>Southeast</u> and <u>South Asia</u> and <u>China</u>. Today, the tiger's range is fragmented, stretching from <u>Siberian temperate forests</u> to subtropical and <u>tropical forests</u> on the <u>Indian subcontinent</u>, <u>Indochina</u> and <u>Sumatra</u>.

The tiger is listed as <u>Endangered</u> on the <u>IUCN Red List</u>. As of 2015, the global wild tiger population was estimated to number between 3,062 and 3,948 mature individuals, with most of the populations living in small isolated pockets. <u>India</u> currently hosts the largest tiger population. Major reasons for population decline are <u>habitat destruction</u>, <u>habitat fragmentation</u> and <u>poaching</u>. Tigers are also victims of <u>human-wildlife conflict</u>, particularly in range countries with a high human population density.

The tiger is among the most recognisable and popular of the world's <u>charismatic megafauna</u>. It featured prominently in the ancient <u>mythology</u> and <u>folklore</u> of cultures throughout its historic range, and continues to be depicted in modern films and literature, appearing on many <u>flags</u>, <u>coats of arms</u> and as <u>mascots</u> for sporting teams. The tiger is the <u>national animal</u> of India, <u>Bangladesh</u>, <u>Malaysia</u> and <u>South Korea</u>.

Etymology

The <u>Middle English tigre</u> and <u>Old English</u> *tigras* derive from Old French *tigre*, from <u>Latin</u> *tigris*. This was a borrowing of <u>Classical Greek</u> τίγρις 'tigris', a foreign borrowing of unknown origin meaning 'tiger' and the river <u>Tigris</u>.[5] The origin may have been the <u>Persian</u> word *tigra* meaning 'pointed or sharp', and the <u>Avestan</u> word *tigrhi* 'arrow', perhaps referring to the speed of the tiger's leap, although these words are not known to have any meanings associated with tigers.[6]

The generic name *Panthera* is derived from the <u>Latin</u> word *panthera*, and the <u>Ancient Greek</u> word πάνθηρ 'panther'.[7]

Taxonomy

In 1758, <u>Carl Linnaeus</u> described the tiger in his work <u>Systema Naturae</u> and gave it the <u>scientific name</u> *Felis tigris*.[2] In 1929, the British taxonomist <u>Reginald Innes Pocock</u> subordinated the species under the genus <u>Panthera</u> using the scientific name <u>Panthera tigris</u>.[8][9]

Subspecies

Phylogenetic relationship of tiger populations based on Driscoll et al. (2009).[10]

Following Linnaeus's first descriptions of the species, several tiger <u>specimens</u> were described and proposed as <u>subspecies</u>.[11] The <u>validity</u> of several tiger subspecies was questioned in 1999. Most putative subspecies described in the 19th and 20th centuries were distinguished on basis of fur length and colouration, striping patterns and body size, hence characteristics that vary widely within populations. <u>Morphologically</u>, tigers from different regions vary little, and <u>gene flow</u> between populations in those regions is considered to have been possible during the <u>Pleistocene</u>. Therefore, it was proposed to recognize only two tiger subspecies as valid, namely <u>P. t. tigris</u> in mainland Asia, and <u>P. t. sondaica</u> in the <u>Greater Sunda Islands</u>.[12]

Results of <u>craniological</u> analysis of 111 tiger skulls from Southeast Asian range countries indicate that Sumatran tiger skulls differ from Indochinese and Javan tiger skulls, whereas Bali tiger skulls are similar in size to Javan tiger skulls. The authors proposed to classify the Sumatran and Javan tigers as distinct species, *P. sumatrae* and *P. sondaica*, with the Bali tiger as subspecies *P. sondaica balica*.[13]

In 2015, morphological, ecological, and molecular traits of all putative tiger subspecies were analysed in a combined approach. Results support distinction of the two evolutionary groups continental and Sunda tigers. The authors proposed recognition of only two subspecies, namely *P. t. tigris* comprising the Bengal, Malayan, Indochinese, South Chinese, Siberian and Caspian tiger populations, and *P. t. sondaica* comprising the Javan, Bali and Sumatran tiger populations. The authors also noted that this reclassification will affect tiger conservation management. The nominate subspecies *P. t. tigris* constitutes two clades:[14]

- a northern clade composed of the Siberian and Caspian tiger populations
- a southern clade composed of all other mainland populations.

One conservation specialist welcomed this proposal as it would make captive breeding programmes and future rewilding of zoo-born tigers easier. One <u>geneticist</u> was sceptical of this study and maintained that the currently recognised nine subspecies can be distinguished genetically.[15]

In 2017, the Cat Classification Task Force of the IUCN Cat Specialist Group revised felid taxonomy and recognized the tiger populations in continental Asia as *P. t. tigris*, and those in the Sunda Islands as *P. t. sondaica*.[16] This two-subspecies view has been largely rejected by researchers. Results of a 2018 whole-genome sequencing of 32 specimens support six monophyletic tiger clades corresponding with the living subspecies and indicate that the most recent common ancestor lived about 110,000 years ago. [17] The following tables are based on the classification of the species *Panthera tigris* provided in *Mammal Species of the World*.[11] It also reflects the classification used by the Cat Classification Task Force in 2017:

Evolution

Restoration of a *Panthera zdanskyi* skull, an extinct tiger relative whose fossil remains were found in northwest China

The tiger's closest living relatives were previously thought to be the *Panthera* species <u>lion</u>, <u>leopard</u> and <u>jaguar</u>. Results of <u>genetic analysis</u> indicate that about 2.88 million years ago, the tiger and the <u>snow</u> <u>leopard lineages</u> diverged from the other *Panthera* species, and that both may be more closely related to each other than to the lion, leopard and jaguar.[32][33] The geographic origin of the *Panthera* is most likely northern Central Asia. The tiger—snow leopard lineage dispersed in Southeast Asia during the Miocene.[34]

<u>Panthera zdanskyi</u> is considered to be a <u>sister taxon</u> of the modern tiger. It lived at the beginning of the <u>Pleistocene</u> about two million years ago, its <u>fossil</u> remains were <u>excavated</u> in Gansu of northwestern China. It was smaller and more "<u>primitive</u>", but functionally and ecologically similar to the modern tiger. It is disputed as to whether it had the striping pattern. Northwestern China is thought to be the origin of the tiger lineage. Tigers grew in size, possibly in response to <u>adaptive radiations</u> of prey species like <u>deer</u> and <u>bovids</u>, which may have occurred in Southeast Asia during the <u>Early Pleistocene</u>.

<u>Panthera tigris trinilensis</u> lived about <u>1.2</u> million years ago and is known from fossils excavated near <u>Trinil</u> in <u>Java.[36]</u> The <u>Wanhsien</u>, <u>Ngandong</u>, Trinil, and Japanese tigers became extinct in <u>prehistoric</u> times.[37] Tigers reached India and northern Asia in the late Pleistocene, reaching eastern <u>Beringia</u>, Japan, and <u>Sakhalin</u>. Some fossil skulls are morphologically distinct from lion skulls, which could indicate tiger presence in Alaska during the <u>last glacial period</u>, about 100,000 years ago.[38]

In the <u>Ille Cave</u> on the <u>island of Palawan</u>, two articulated <u>phalanx bones</u> were found amidst an assemblage of other animal bones and stone tools. They were smaller than mainland tiger fossils, possibly due to <u>insular dwarfism</u>.[39] It has been speculated that the tiger parts were either imported from elsewhere, or that the tiger colonised Palawan from Borneo before the Holocene.[40][41] Fossil remains of tigers were also excavated in Sri Lanka, China, Japan and <u>Sarawak</u> dating to the <u>Late Pliocene</u>, <u>Pleistocene</u> and Early <u>Holocene</u>.[38][42] The <u>Bornean tiger</u> was apparently present in Borneo between the <u>Late Pleistocene</u> and the Holocene, but whether it went extinct in prehistoric or recent times has not been resolved.[42][43]

Results of a <u>phylogeographic</u> study indicate that all living tigers had a common ancestor 108,000 to 72,000 years ago.[25] The potential tiger range during the late Pleistocene and Holocene was predicted applying <u>ecological niche modelling</u> based on more than 500 tiger locality records combined with <u>bioclimatic</u> data. The resulting model shows a contiguous tiger range at the <u>Last Glacial Maximum</u>, indicating <u>gene flow</u> between tiger populations in mainland Asia. The Caspian tiger population was likely connected to the Bengal tiger population through corridors below elevations of 4,000 m (13,000 ft) in the <u>Hindu Kush</u>. The tiger populations on the Sunda Islands and mainland Asia were possibly separated during <u>interglacial periods.[44]</u>

The tiger's full <u>genome</u> sequence was published in 2013. It was found to have similar repeat composition to other cat genomes and an appreciably conserved <u>synteny</u>.[45]