

Transfer of African populations of African Lion *Panthera leo* from Appendix II to Appendix I

Proponent: Chad, Côte d'Ivoire, Gabon, Guinea, Mali, Mauritania, Niger, Nigeria and Togo

Summary: The African Lion *Panthera leo* is the second-largest cat species, found in sub-Saharan Africa and India; it was formerly also present in North Africa and the Middle East. In Africa it is known to be extant in 25 (possibly 26) range States and has been recently reintroduced to a 27th (Rwanda). It is possibly extinct in five others. Current area of occupancy is estimated at around 1.7 million km², this representing a small portion of its presumed historic range¹.

Panthera leo are absent from tropical moist forest and hyper-arid desert but otherwise have wide habitat tolerance; their optimum habitat is open woodland and thick bush, scrub and grass complexes. They are social, living in prides with an average size of four to six adults¹. Population density is closely linked to seasonal prey availability and varies widely, from 1.5 adults per 100 km² in semi-desert (in South Africa) to 55 adults per 100 km² in prey-rich savannah (the Serengeti in East Africa)¹. Generation time is estimated at seven years. Average litter size is 2.5, with an interbirth interval of around 20 months if some of the previous litter survive to maturity, four to five months if not². The species is present in a large number of protected areas, both fenced and unfenced, operating under a range of management regimes.

The major factors adversely affecting *P. leo* populations are killing (often pre-emptive) in defence of human life and livestock, habitat loss, and declines in the prey base. Where not appropriately managed, trophy hunting may have an adverse effect on *P. leo* populations¹.

In 2013 a population of around 32,000 *P. leo* in Africa was suggested, based on a compilation of available data sources³. The status of *P. leo* was comprehensively reviewed for the IUCN Red List in 2015. The authors of the 2015 IUCN Red List Assessment (RLA) considered the 2013 figure to be an overestimate, as it did not take into account recent changes (mainly declines) that were believed to have taken place in some populations, and thought the number likely to be closer to 20,000 than over 30,000. IUCN categorised the species as Vulnerable in 2016.

The RLA carried out a time trend analysis of census data for the period 1993 to 2014 (three *P. leo* generations) for 47 relatively well monitored *P. leo* subpopulations that together comprise a substantial portion of the total species population¹. Because of significant differences in observed regional trends, the sample populations were grouped into three regions for analysis: eastern Africa; southern Africa; and western and central Africa. The assessment used a decline from 1118 to 0 for Katavi in Tanzania, although acknowledged that the data were imprecise, and that *P. leo* were still present there. It excluded as an outlier one large population (estimated at ca. 1300 in 2014) in Mozambique (Niassa) that was recorded as having increased in size by over 250% since 1993; the circumstances surrounding this increase were considered unusual, and unlikely to be sustained in the future¹.

Overall, a reduction of 43% in the *P. leo* population over the period 1993 to 2014 was inferred in the RLA, resulting in a classification of the species as Vulnerable. In four southern African countries (Botswana, Namibia, South Africa and Zimbabwe) the population was assessed as having grown overall by 8% in the period; elsewhere in Africa the population was assessed as having declined by just over 60%. However, there were a number of stable or increasing *P. leo* populations in Africa outside southern Africa, and one large population in southern Africa (Okavango in Botswana) that was declining. On the basis of the RLA, the population in the four southern African countries was estimated to comprise around half the total African population of *P. leo* in 2014, compared with around one-quarter in 1993.

Re-analysis of the survey data without the figures for Katavi reduces the inferred overall decline in *P. leo* in Africa between 1993 and 2014 to around 33%; inclusion of the Niassa population would reduce it still further.

The authors of the RLA considered their estimate of the decline might be conservative because they believed that less well monitored populations for which data were not available would be more likely to be declining than well monitored populations. A 2015 paper noted that no reliable data were available on *P. leo* populations or population trends in Angola, Central African Republic, Ethiopia, Somalia and South Sudan and that systematic surveys were absent from large areas of potential *P. leo* habitat in other countries, such as Zambia and Tanzania⁴.

Panthera leo has been included in CITES Appendix II since 1975 under the general listing of the family Felidae. The Indian population has been included (as *Panthera leo persica*) in Appendix I since that time. *P. leo* products are in trade. The CITES Trade Database indicates that South Africa is by far the largest exporter; a significant portion of the trade is in trophies from captive-breeding operations. Very little trade from any other range State has been reported. Illegal trade has been reported but is believed currently to be at a relatively low level.

Analysis: The African population of *Panthera leo* does not have a restricted range, nor does it have a small population. The population overall has been declining. Estimates of the rate of decline vary, from around 34% to 43% in the past 21 years (three *P. leo* generations). This is less than the guideline figure given in *Res. Conf. 9.24 (Rev. CoP16)* for a marked recent rate of decline. Moreover, the rate of decline has been slowing because stable or increasing *P. leo* populations, mainly in southern Africa, make up an increasing proportion of the overall population. The African population of *P. leo* would not therefore appear to meet the biological criteria for inclusion in Appendix I.

Reviewers: C. Breitenmoser-Würsten.

References:

Information not referenced in the Summary section is from the Supporting Statement.

¹ Bauer, H., Packer, C., Funston, P.F., Henschel, P. & Nowell, K. (2015) *Panthera leo*. The IUCN Red List of Threatened Species 2015.

² Nowell, K and Jackson, P. (Compilers and editors) (1996) *Wild Cats: Status survey and conservation action plan*. IUCN, Cambridge, UK and Gland, Switzerland.

³ Riggio, J., Jacobson, A., Dollar, L., Bauer, H., Becker, M., Dickman, A., Funston, P., Groom, R., Henschel, P., de Longh, H., Lichtenfeld, L. & Pimm, S. (2013) The size of savannah Africa: A lion's (*Panthera leo*) view. *Biodiversity and Conservation* 22: 17-35.

⁴ Bauer, H., Chapron, G., Nowell, K., Henschel, P., Funston, P., Hunter, L., Macdonald, D. & Packer, C. (2015) Lion (*Panthera leo*) populations are declining rapidly across Africa, except in intensively managed areas. *Proceedings of the National Academy of Sciences* 112: 14894-14899.