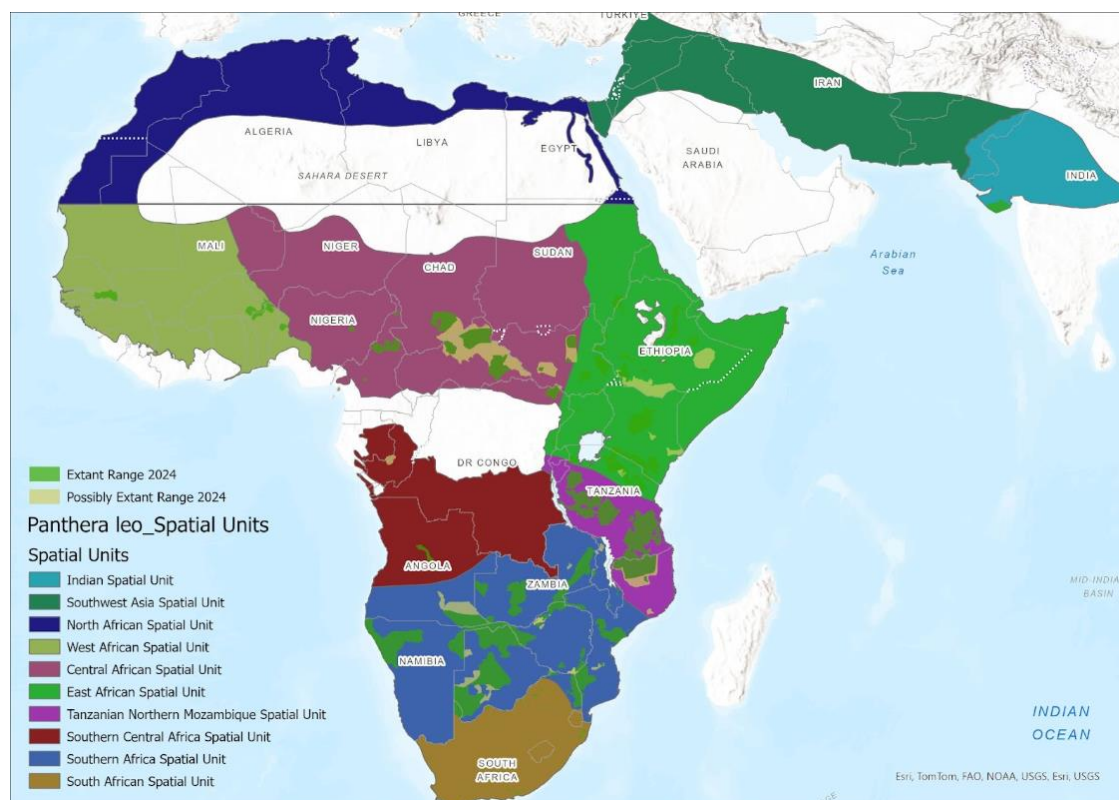
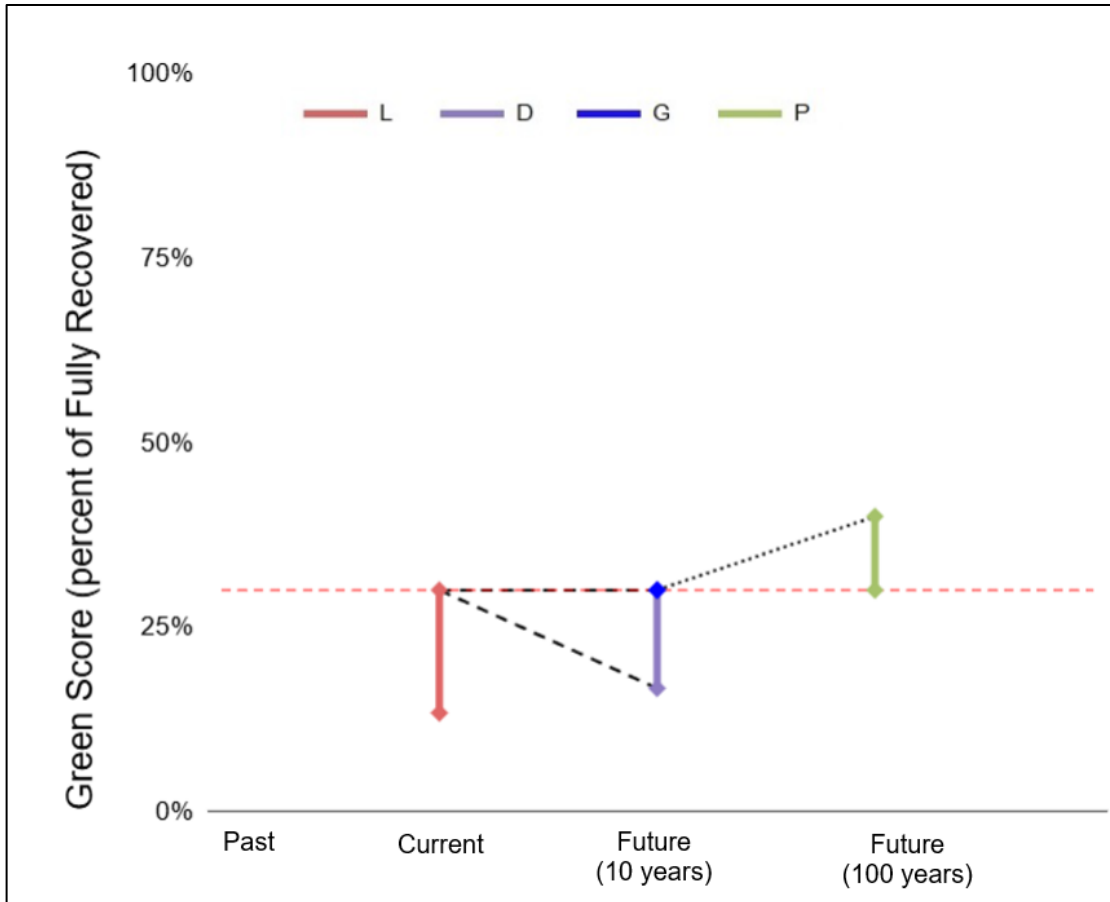


## Lion (*Panthera leo*)



**Figure S1.** Map of indigenous range of the Lion delineated into spatial units. Indigenous range is based on the extinct range of the latest Red List Assessment (Nicholson *et al.* 2024), excluding areas in Turkey and Greece where the Lion would have been extirpated prior to 1500 as indicated by both Wolf and Ripple (2018) and records collated by Schnitzler (2011). Current range is based on the latest Red List Assessment (Nicholson *et al.* 2024): Extant range = Green; Possibly Extant Range = Light Yellow-Green. Spatial units are as follows: Light Blue = Indian; Dark Green = Southwest Asia; Dark Blue = North African; Yellow-Green = West African; Pink = Central African; Bright Green = East African; Purple = Tanzanian Northern Mozambique; Red = Southern Central Africa; Blue = Southern Africa; Olive Brown = South African.



**Figure S2.** Graphical representation of the conservation metrics based on the Green Scores. Key: Vertical arrows represent the four conservation metrics: L – Conservation Legacy; D – Conservation Dependence; G – Conservation Gain (does not appear as current and counterfactual states are the same); P – Recovery Potential. Horizontal red dashed line represents the Current Green Score. Dashed black lines: future scenarios of change expected with and without current and future conservation efforts. Dotted black line: long-term potential change expected with future conservation innovation and efforts.

**Table S1.** Conservation actions relevant to the species that were considered in the assessment. Actions are either past, ongoing, planned for the next 10 years, or possible to implement in the long-term aspiration scenario.

Actions with codes	Notes
1.1. Land/water protection: Site/area protection	
1.2. Land/water protection: Resource & habitat protection	
2.1. Land/water management: Site/area management	
2.2. Land/water management: Invasive/problematic species control	Rangeland in parts of Lion range are degrading and being replaced by unpalatable species in several protected areas. The ability to carry lion prey, and thus lions, is likely to diminish in these areas. Furthermore, bush encroached parks carry higher densities of snares and illegal activities that affect lion populations.
2.3. Land/water management: Habitat & natural process restoration	
3.1.1. Harvest management	
3.1.2. Trade management	
3.1.3. Limiting population growth	
3.2 Species recovery	
3.3.1. Species re-introduction: Reintroduction	
3.4.1. Ex-situ conservation: Captive breeding/artificial propagation	
4.1. Education and Awareness: Formal education	
4.2. Education and Awareness: Training	
4.3. Education and Awareness: Awareness & communications	
5.1.2. Legislation, National level	
5.1.3. Legislation, Sub-national level	
5.3. Private sector standards & codes	
5.4.1. Compliance and enforcement- International level	
5.4.2. Compliance and enforcement- National level	
5.4.3. Compliance and enforcement- Sub-national level	
6.1. Livelihood, economic & other incentives: Linked enterprises & livelihood alternatives	Lions affect human livelihoods strongly

Actions with codes	Notes
6.3. Livelihood, economic & other incentives: Market forces	
6.4. Livelihood, economic & other incentives: Conservation payments	

**Table S2.** Threats relevant to the species that were considered in the assessment. The threats are either past, ongoing, or expected to arise in the next 100 years.

Threats with codes	Notes
1.1 Residential & commercial development: Housing & urban areas	
1.3 Residential & commercial development: Tourism & recreation areas	
2.1.1 Agriculture & aquaculture: Annual & perennial non-timber crops: Shifting agriculture	
2.1.2 Agriculture & aquaculture: Annual & perennial non-timber crops: Small-holder farming	
2.3.1 Agriculture & aquaculture: Livestock farming & ranching: Nomadic grazing	
2.3.2 Agriculture & aquaculture: Livestock farming & ranching: Small-holder grazing, ranching or farming	
2.3.3 Agriculture & aquaculture: Livestock farming & ranching: Agro-industry grazing, ranching or farming	Especially in parts of southern and east Africa (P. Strampelli pers. comm. 2024)
3.1 Energy production & mining: Oil & gas drilling	
3.2 Energy production & mining: Mining & quarrying	A threat in areas of southern, central, and western Tanzania, and possibly northern Mozambique, where Lion habitat is being de-gazetted for mining purposes, and mining operations are degrading Lion habitat (P. Strampelli pers. comm. 2024). Illegal mining for gold and other precious metals within protected areas also poses a direct threat to Lions and prey through cascading illegal activities (P. Funston pers. comm. 2024).
4.1 Transportation & service corridors: Roads & railroads	This increases fragmentation of and access to habitat and therefore impacts Lions and prey (A. Loveridge and P. Funston pers. comm. 2024).
5.1.1 Biological resource use: Hunting & collecting terrestrial animals: Intentional use (species being assessed is the target)	
5.1.2 Biological resource use: Hunting & collecting terrestrial animals: Unintentional effects (species being assessed is not the target)	
5.1.3 Biological resource use: Hunting & collecting terrestrial animals: Persecution/control	

Threats with codes	Notes
5.3.5 Biological resource use: Logging & wood harvesting: Motivation Unknown/Unrecorded	Might result in habitat conversion and therefore affect Lions and prey (A. Loveridge pers. comm. 2024).
6.2 Human intrusions & disturbance: War, civil unrest & military exercises	
7.1.1 Natural system modifications: Fire & fire suppression: Increase in fire frequency/intensity	
7.2.1 Natural system modifications: Dams & water management/use: Abstraction of surface water (domestic use)	
8.3 Invasive & other problematic species, genes & diseases: Introduced genetic material	
9.3.4 Pollution: Agricultural & forestry effluents: Type Unknown/Unrecorded	
11.2 Climate change & severe weather: Droughts	

## References

- Nicholson, S., Bauer, H., Strampelli, P., Sogbohossou, E., Ikanda, D., Tumenta, P.F., Venktraman, M., Chapron, G. and Loveridge, A. 2024. *Panthera leo* (amended version of 2024 assessment). *The IUCN Red List of Threatened Species* 2024(2): e.T15951A266696959. DOI: [10.2305/IUCN.UK.2024-2.RLTS.T15951A266696959.en](https://doi.org/10.2305/IUCN.UK.2024-2.RLTS.T15951A266696959.en)
- Schnitzler, A.E. 2011. Past and present distribution of the North African–Asian lion subgroup: a review. *Mammal Review* 41(3): 220-243. DOI: [10.1111/j.1365-2907.2010.00181.x](https://doi.org/10.1111/j.1365-2907.2010.00181.x)
- Wolf, C. and Ripple, W.J., 2018. Rewilding the world's large carnivores. *Royal Society Open Science* 5(3):172235. DOI: [10.1098/rsos.172235](https://doi.org/10.1098/rsos.172235)

## **Appendix 1. Assessor Self-Review**

### **1. Disclose any potential conflicts of interest, which could bias the assessment.**

There are no conflicts of interest with this assessment.

### **2. Is there any discrepancy between this assessment and the Red List assessment for the species? If so, comment on the likely reason for this discrepancy.**

The indigenous range does not match with the extinct range shown in the Red List assessment map of the lion as the lion went extinct in Europe before 1500. Therefore, this range is excluded from the indigenous range in the GSS.

### **3. Review the impact that you assigned to the various threats and conservation actions. Would the trajectory of the species be very different if other choices were made? If so, review your justification for these choices. If appropriate, widen the bounds on tabs 4 and 5-8 (change the lower and upper plausible values) to reflect the uncertainty introduced by the possibility of these other choices. How, if at all, did this review question cause this assessment to change? If no changes were needed, please write "no changes".**

Uncertainty is included into the status assignments of each spatial unit based on discussions with lion experts across the range of the species.