

The Revised National list of Ecosystems that are Threatened and in need of Protection (The 2022 Red List of Ecosystems): Implementation Note

June 2023

This note addresses the legal and policy implications of the revision of the “National list of Ecosystems that are Threatened and in need of Protection”, first published in 2011 (GN 1002) in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA), which we commonly refer to as the list of threatened ecosystems. The 2011 list was replaced in late 2022 following six years of research and stakeholder engagement (Gazette Number 47526, Government Notice 2747) and came into effect on 18th November 2022.

Background

The 2011 list focussed on terrestrial ecosystems and is referred to in Listing Notice 3 (Government Notice R985, published under NEMBA in 2014) which identifies activities that require environmental authorisation when undertaken in a threatened ecosystem, as identified in the list. The 2011 list has also been used throughout South Africa as a decision-making support tool, especially in environmental authorisation application processes and to inform bioregional planning.

The revised list, known as the 2022 Red List of Ecosystems, was developed between 2016 and 2021, incorporating the best available information on terrestrial ecosystem extent, condition, pressures, and drivers of change. The revised list is based on assessments that followed the International Union for Conservation of Nature (IUCN) Red List of Ecosystems Framework (version 1.1)ⁱ and covers all 456ⁱⁱ terrestrial ecosystem types described in South Africaⁱⁱⁱ; it replaces the 2011 list. While the updated input data and global alignment provide a substantially improved list, it is important to note that direct comparisons between the 2011 and 2022 lists are not possible due to the significant changes in methodology, comparisons between future versions of the list will be possible, facilitating trend analysis and monitoring.

The 2022 Red List of Ecosystems identifies 120 threatened terrestrial ecosystem types (51 Critically Endangered, 55 Endangered and 14 Vulnerable types)^{iv}. At this stage the revised list remains terrestrially focused, but efforts are underway to formalize the listing of threatened ecosystems in other realms that have been identified in the National Biodiversity Assessment (i.e., marine, freshwater and estuarine).

The revision of the list has implications for environmental impact assessment, environmental decision-making, spatial (land-use) planning and biodiversity planning.

More information on the 2022 Red List of Terrestrial Ecosystems can be found at <http://ecosystemstatus.sanbi.org.za>

Implications for environmental impact assessment

Listing Notice 3

- Listing Notice 3 published under NEMA in 2014 recognises Critically Endangered and Endangered ecosystems as specified geographic areas within which undertaking certain activities will require environmental authorisation. The 2022 Red List of Ecosystems is now in effect, and the 2011 list must no longer be used for the purpose of triggering an assessment.

The 2022 Red List of Terrestrial Ecosystems does not have retrospective effect. Applications and basic assessment reports for environmental authorisation triggered by the 2011 list and submitted prior to the 2022 list came into effect (6th November 2022) may continue with the information applicable at the time of submission. The 2022 list, however, represents the best available science and should therefore be used to determine the impact significance scores of the application.

National Web-based Environmental Screening Tool and the Procedures for the Assessment and Minimum Criteria for Reporting on Biodiversity

- Threatened Ecosystems are one of the features included in the Terrestrial Theme of the National Web-based Environmental Screening Tool (<https://screening.environment.gov.za>) published under NEMA. The Terrestrial Theme has been updated with the 2022 Red List of Ecosystems replacing the 2011 list.
- Environmental assessment practitioners (**EAPs**) are required to generate a report from the screening tool as a first step to determining 'site sensitivity' from, *inter alia*, a biodiversity perspective. The Procedures for the Assessment and Minimum Criteria for Reporting on Biodiversity, also published under NEMA, provides that EAPs are required to take certain steps to verify the information in the report generated through the web-based screening tool with reference to, *inter alia*, 'other available and relevant information'. A finding that site sensitivity is 'VERY HIGH' means that an applicant for environmental authorisation needs to submit a specialist report on the impact of a proposed activity on biodiversity to the competent environmental authority (**CEA**) as part of an application for environmental authorisation. It became compulsory for applicants for environmental authorisation to use the National Environmental Web-based Screening Tool in 2019. The Procedures for the Assessment and Minimum Criteria for Reporting on Biodiversity came into force in 2020.
- When using the web-based screening tool, it is essential that verification of an ecosystem type at a site level takes place. The national dataset is primarily used for the reporting on the state of South Africa's biodiversity, to inform broad-level conservation strategies and the quantification of national conservation targets. It is not recommended that the national map is the only source of information used to inform administrative and executive processes, such as applications for environmental authorisation and the preparation of strategic environmental assessments in terms of the National Environmental Management Act, 1998, or the preparation or review of municipal spatial development frameworks or land use schemes. Those processes need to be augmented by finer scaled environmental assessments and, where feasible, site visits, that capture the site scale composition of communities and occurrence of taxa of conservation concern. See Section A of the VEGMAP Project handbook (2023) <http://opus.sanbi.org/handle/20.500.12143/7662> .

Implications for environmental decision-making

The revised list is a relevant factor to be considered in environmental decision-making processes, including decisions in respect of applications for environmental authorisation. Environmental assessment practitioners and competent authorities should consider the detailed assessment reports that underpin the 2022 Red List of Ecosystems for all ecosystem types that are potentially affected by a development application. These are available, along with spatial data, at <http://ecosystemstatus.sanbi.org.za>.

Implications for biodiversity planning

Spatial biodiversity plans

- Threatened ecosystem data are an important informant to spatial biodiversity plans and the Critical Biodiversity Areas (CBA) Maps, bioregional plans and biodiversity sector plans. Existing CBA Maps and bioregional plans are unaffected by the revision of the 2011 list. New plans or updates to existing plans should take the revised list into account.

Protected Areas Expansion Strategies and Plans

- As for spatial biodiversity plans, threatened ecosystem data are an informant of protected areas expansion strategies. Existing protected areas expansion strategies are unaffected by revision of the 2011 list. New protected areas expansion strategies or updates to existing strategies should take the revised list into account.

Using the Red List of Terrestrial Ecosystems

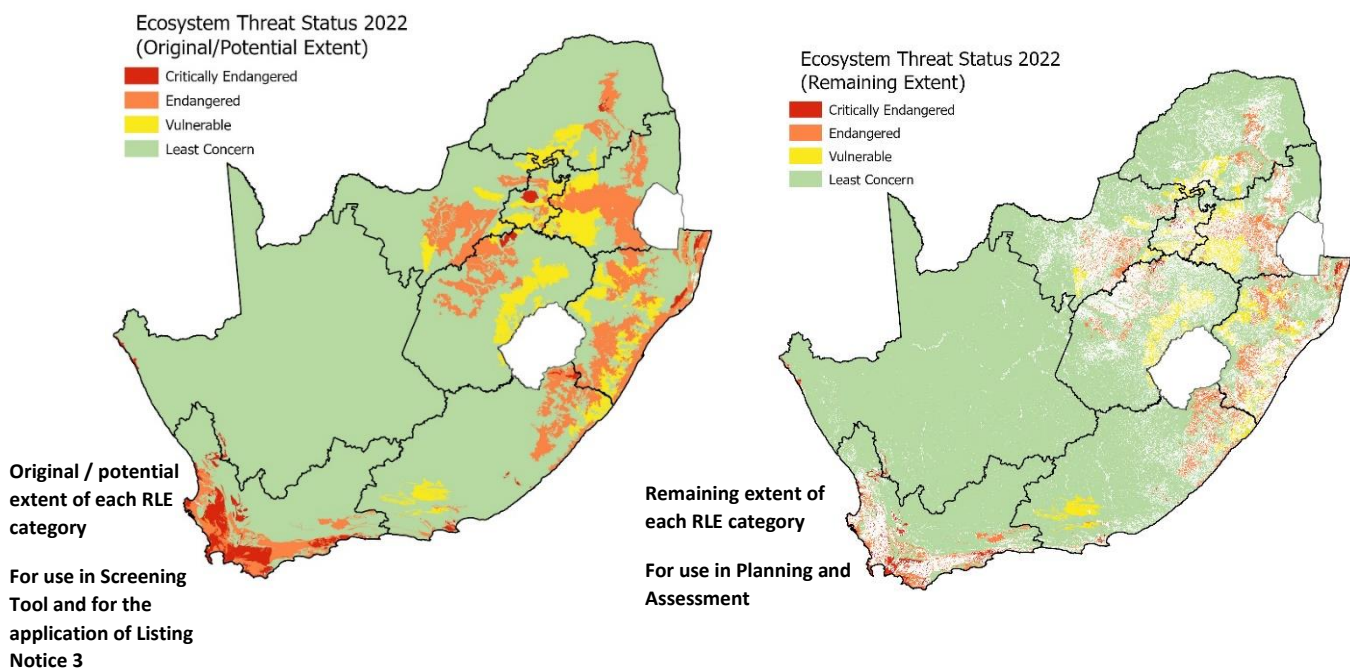
- The spatial data for the 2022 Red List of Ecosystems (available at <http://ecosystemstatus.sanbi.org.za>) comes in two forms. Firstly, the “original / potential extent” of each terrestrial ecosystem type (based on the 2018 version of Vegetation Map of South Africa Lesotho and Swaziland), and secondly the “remnants layer” which shows only the natural remaining patches of each ecosystem type.
- The remnants layer was constructed using the 2018 national land cover^v which is suitable for national scale maps. This data should be treated as a guide to the location of remnant natural patches of a threatened ecosystem type. But users should note that inaccuracies in the national land cover are possible and that there are spatial resolution limitations, especially in urban settings. Site level validation of the national scale maps is required.
- Consequently, when an environmental impact assessment is conducted practitioners should also consider the original / potential extent of a threatened ecosystem and any remaining natural vegetation within this extent should be considered as listed. Conversely, the listed status will not apply to those areas that have been severely or critically modified^{vi} (i.e., where all natural habitat has been lost).
- The original/potential extent form of the List of threatened ecosystems is one of the layers that feed into the biodiversity theme of the National Web Based Environmental Screening Tool (Available at <https://screening.environment.gov.za>). Should a proposed development be identified to intersect a listed threatened ecosystem, the very high biodiversity protocol must be followed to meet the assessment and reporting criteria for these areas. The assessment must provide a baseline description of the site which must include, a description of the listed ecosystems at the site. The information emanating from the assessment of the listed ecosystems must be included in a terrestrial biodiversity assessment report. The report must provide a description of the methodology used, the assumptions made and locations of the areas that are not suitable for development.
- If, following site visits by EAP, it is reported that the vegetation type / ecosystem type map is not accurate (e.g. the RLE potential extent map indicates that veg1 is present, but the site inspection shows that veg2 is present) then this information should be fed back to the custodians of the national map via vegmap@sanbi.org.za; and the data captured on iNaturalist as evidence of the mismatch between the national map ecosystem classification and the observed ecosystem type.

Concluding remarks

The Revised National list of Ecosystems that are Threatened and in need of Protection, known as the 2022 Red List of Ecosystems, has implications for environmental impact assessment, environmental decision-making and biodiversity planning.

The following officials can be contacted for further assistance or clarity on any aspect of this note:

- Technical queries: Maphale Monyeki (Ecosystem Assessment Scientist) m.monyeki@sanbi.org.za; Copying Dr Andrew Skowno (National Biodiversity Assessment Unit Lead) a.skowno@sanbi.org.za
- Policy queries: Dr Tammy Smith (DD: Knowledge Coordination and Reporting) t.smith@sanbi.org.za



ⁱ Rodríguez, J. P., Keith, D. A., Rodríguez-Clark, K. M., Murray, N. J., Nicholson, E., Regan, T. J., et al. (2015). A practical guide to the application of the IUCN Red List of Ecosystems criteria. *Philos. Trans. R. Soc. B Biol. Sci.* 370, 20140003. doi: 10.1098/rstb.2014.0003.

ⁱⁱ The Gazette mentions 458 types, this is incorrect, 456 terrestrial ecosystem types were assessed. Swamp Forest and Mangroves were not evaluated for the terrestrial listing, and ongoing research efforts are focussed on assessing these transitional ecosystem types.

ⁱⁱⁱ Mucina, L., and Rutherford, M. C. (2006). *The vegetation of South Africa, Lesotho and Swaziland*. Strelitzia, eds. L. Mucina and M. C. Rutherford Pretoria: South African National Biodiversity Institute.

Dayaram, A., Harris, L. R., Grobler, B. A., van der Merwe, S., Rebelo, A. G., Powrie, L. W., et al. (2019). Vegetation map of South Africa, Lesotho and Swaziland 2018: A description of changes since 2006. *Bothalia* 49, 1–11. doi: 10.4102/abc.v49i1.2452.

^{iv} Skowno, A. L., and Monyeki, M. S. (2021). South Africa's Red List of Terrestrial Ecosystems (RLEs). *Land* 10, 1–14. doi: <https://doi.org/10.3390/land10101048>.

^v The National Land Cover datasets for South Africa are available for download at this site <https://egis.environment.gov.za>. Minor modifications to the land cover were made for the RLE assessments see this document for more detail <http://hdl.handle.net/20.500.12143/6935>.

^{vi} severely modified : A detailed ecological condition class in which loss of ecosystem composition, structure and ecological function is extensive. critically modified : A detailed ecological condition class in which the ecosystem has been modified completely, with an almost complete loss of composition and structure relative to a reference condition of natural. All or most ecosystem function has been destroyed and the changes are irreversible (previously referred to as irreversibly modified).