

## SANBI POLICY DOCUMENT

DIVISION: Foundational Biodiversity Science	POLICY NUMBER:
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### South African National Plant Checklist policy

<b>Preamble</b>	SANBI is mandated to co-ordinate and promote the taxonomy of South Africa's biodiversity, as well as to collect, generate, process, co-ordinate and disseminate information about biodiversity. SANBI is thus obligated to provide and manage a checklist of South African plants. This South African National Plant Checklist must be regularly maintained to ensure that the public have access to the most up-to-date and accurate taxonomic information. Documented and consistently implemented policy and procedures for the maintenance of national checklists are critical to ensure that all contributors and users understand the rationale for the inclusion of data and for changes and additions made, and also to standardise the approach to updating across taxa. The procedures ensure transparency with respect to how changes are made and who is responsible.
<b>Purpose</b>	A policy to guide the decisions and procedures relating to updating the South African National Plant Checklist ("Checklist") is necessary to ensure consistency, transparency and credibility.
<b>Legislation</b>	National Environmental Management: Biodiversity Act, 10 of 2004
<b>Links to SANBI policies</b>	e-Flora policy
<b>Scope</b>	This policy is applicable to SANBI staff of the Foundational Biodiversity Science division as well as external collaborators contributing to updating the Checklist. The policy impacts on all end-users of the Checklist.
<b>Policy statement</b>	The South African National Plant Checklist is compiled and continuously updated by the Checklist Co-ordinator and Deputy Checklist Co-ordinator at SANBI, with contributions from scientists in the Foundational Biodiversity Science division and external collaborators. Decisions regarding taxonomic changes must be taken according to the guidelines detailed in Appendix 1, and must follow the procedures specified in Appendix 2.

## Appendix 1: South African National Plant Checklist guidelines.

A single staff member, with a sound knowledge and understanding of plant nomenclature and taxonomic literature, will have ultimate responsibility for maintaining the plant checklist as the Checklist Co-ordinator at SANBI.

A Deputy Checklist Co-ordinator with similar competence in nomenclature and taxonomic literature will have equal editing rights to the database, and will be tasked with responsibilities towards maintaining the plant checklist.

The checklist will be updated on an ongoing basis, with changes identified in the literature being incorporated into the checklist within a reasonable amount of time, following the procedures outlined in Appendix 2.

Scientists employed by SANBI have a responsibility to assist the Checklist Co-ordinators by providing updated information for families for which they are responsible.

Taxon experts and herbarium curators from outside of SANBI are encouraged to send published articles with new species descriptions or revisions to the Checklist Co-ordinator to be incorporated into the checklist.

Only published changes will be incorporated; where a publication leaves unresolved issues this may be stated in a notes field.

The latest published, evidence-based classification for a genus, or subdivision of a genus, will be followed.

Experts within SANBI or from other institutions can submit an application to the Checklist Co-ordinator to refrain from implementing a change to the checklist where a strong objection exists, for example if it will have a major impact on the stability of nomenclature and classification and it is likely to be repudiated within a short period of time by other published research, or where there are two opposing published classifications based on the same evidence. These applications will be considered by the South African Plant Checklist Committee (Appendix 3).

In cases where nomenclatural or classification changes need to be treated with caution, or where the latest published treatment is not followed, an explanation should be given in the appropriate notes field in BODATSA.

All new validly published (according to the ICN) names of indigenous<sup>1</sup> and naturalised<sup>2</sup> (including invasive<sup>3</sup>) plant taxa occurring in South Africa (currently excluding the Prince Edward Islands) will be added to the list, either as the currently accepted name, or as a synonym with reference to the accepted name. If scientists disagree with new names or classification they must publish the synonyms and reasons for the proposed synonymy.

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<sup>1</sup> Indigenous species (syn. native species): species that are found, or were historically found, in South Africa within their documented natural range where they have evolved and expanded into without human intervention (intentional or accidental)

<sup>2</sup> Naturalised species (syn. established): Alien species (as defined here<sup>4</sup>) that sustain self-replacing populations for two or more life cycles or over a given period of time without direct intervention by people, or despite human intervention.

<sup>3</sup> Invasive species: Alien species (as defined here<sup>4</sup>) that sustain self-replacing populations over several life cycles, produce reproductive offspring, often in very large numbers at considerable distances from the parent and/or site of introduction, and have the potential to spread over long distances.

<sup>4</sup> Alien species (syn. not indigenous, non-native): a species whose documented natural range does not include South Africa, but that is now here as a result of human action that has enabled it to overcome a biogeographic barrier.

The ultimate responsibility for maintaining the correct checklist of naturalised plants occurring in South Africa lies with the Deputy Checklist Co-ordinator.

All plant species with evidence of naturalisation in South Africa must be added to the checklist with their naturalisation status flagged.

Evidence for occurrence of naturalised plants in South Africa must be in the form of voucher specimens or suitable diagnostic evidence in literature published in peer-reviewed publications.

One higher-level classification system will be used for each phylum in the checklist and adhered to in its entirety. The classification systems chosen for the different groups of plants are given in Appendix 4.

The higher-level classification system will be reviewed every five to ten years and may be amended then.

The Policy may be reviewed annually by the South African Plant Checklist Committee, or upon request from one of its members, and amended if necessary.

The updated electronic checklist will be disseminated through the SANBI website, preferably with a function that allows a search by date so that the latest changes can be identified by users.

A summary of updates and changes, as well as references of literature incorporated, will be made available through the SANBI website annually.

A feedback function that allows comments by external users is required on the website. The Checklist Co-ordinator will be responsible for responding to comments.

## **Appendix 2:** The SANBI procedures for maintaining the South African National Plant Checklist.

Scientists employed by SANBI have a responsibility to assist the Checklist Co-ordinators in updating and maintaining the classification and nomenclature of the families for which they are responsible, by communicating additions or corrections required.

Taxon experts and herbarium curators from outside of SANBI are encouraged to send published articles with new species descriptions or revisions to the Checklist Co-ordinator to be incorporated into the checklist.

Any corrections or additions to the Checklist that are required by other staff should be communicated to the scientist responsible for the family, who will inform the Checklist Co-ordinator, providing the necessary information and literature for the updates or corrections to be made.

A list of SANBI scientists responsible for each taxon group is maintained by the Deputy Checklist Co-ordinator and implemented by the DD: Plant Research.

The Checklist Co-ordinators will:

- implement changes as requested by SANBI scientists and external experts;
- scan the published literature to which SANBI subscribes for identification of relevant publications;
- establish and communicate regularly with a network of researchers who publish taxonomic papers on South African plants to request copies of newly-published work not in the list of journals to which SANBI subscribes. The editors of some of the more obscure journals will be contacted and a similar request made;
- use an accessible literature database to regularly search for new species and other relevant publications; and
- scan IPNI on a regular basis to identify any publications that might have been missed, and to check the status of names.

If new combinations of a genus are not all published, the Checklist Co-ordinator will contact the original author to ask for remaining combinations to be made.

Depending on the proportion of names for South African taxa requiring new combinations, updating of the checklist can be postponed until all combinations are made for a group.

The following will be recorded for each change, as appropriate: new species or species for which status has changed; synonyms; reference; date that the change was made; a comment, where required, explaining the change.

### Appendix 3: Composition of the South African Plant Checklist Committee.

The South African Plant Checklist Committee is comprised of the following members:

- Chair: SA Plant Checklist Co-ordinator
- Other key SANBI members: Deputy Checklist Co-ordinator; DD: Plant Research, e-Flora Co-ordinator
- SANBI taxonomists: 3
- Non-SANBI taxonomists: 6
- End user consultant: Red List Officer from Threatened Species Programme – not voting

### Appendix 4: The higher level classification systems chosen for the different groups of plants.

- Angiosperms: Angiosperm Phylogeny Group [APG] II system, using the bracketed families. New families described after publication of APG II, as well as family ‘splits’ recognised in APGIII and IV, are incorporated. However, ‘lumping’ of families post-APGII are not accepted.
- Gymnosperms: Christenhusz *et al.* in *Phytotaxa* 19: 55–70 (2011)
- Ferns and lycophytes: Pteridophyte Phylogeny Group [PPG] 1 in *Journal of Systematics and Evolution* 54(6): 563-603 (2016)
- Mosses, liverworts and hornworts: Missouri Botanical Garden’s TROPICOS database, and the following phylogenetic classification systems:

Bryophyta (mosses): Goffinet *et al.*, Morphology and classification of the Bryophyta, in Goffinet & Shaw (eds.) *Bryophyte Biology* 2nd edition: 55–138 (2008). And subsequent updates as published on <http://bryology.uconn.edu/classification/>

Anthocerotophyta (hornworts): Suprageneric classification: Duff *et al.* in **The Bryologist**, **110: 214-243** (2007) and Stotler & B. Crandall-Stotler in **The Bryologist** **108: 16-26** (2005). Generic classification: Renzaglia *et al.*, New insights into morphology, anatomy and systematics of hornworts, in Goffinet & Shaw (eds.) *Bryophyte Biology* 2nd edition: 139–172 (2008). And subsequent updates as published on <http://bryology.uconn.edu/classification-hornworts/>

Marchantiophyta (liverworts): Crandall-Stotler *et al.* in *Edinburgh Journal of Botany* 66: 155–198 (2009). And subsequent updates as published on <http://bryophytes.plant.siu.edu/marchantiophyta.html>