SANBI POLICY DOCUMENT

DIVISION: Biosystematics Research and Biodiversity Collections	POLICY NUMBER: D3
EFFECTIVE DATE: 1 February 2015	LAST AMENDED: 26 November 2014

HERBARIUM COLLECTIONS: SECURITY AND PROTECTION

Background

Each specimen in a herbarium is a unique historical and scientific record and each herbarium collection is valuable for scientific research. Research, in turn, enhances the value of the specimens. The primary goal of a herbarium is to preserve the information contained in specimens so that scientists can access the specimens in the future to answer questions about valid species, relationships of species, extinction of species and changing vegetation and habitats.

As part of its mandate from the National Environmental Management: Biodiversity Act (NEMBA) of 2004, the South African National Biodiversity Institute (SANBI) is required to establish, manage, control and maintain herbaria and collections of dead animals. Further, SANBI also has a responsibility to the international botanical community to preserve the collection for taxonomic study.

SANBI maintains ± 2 175 000 specimens in the three herbaria under its care, and has the ethical and legal responsibility to ensure that these collections are secure and protected. To fulfil this responsibility, SANBI, through its Biosystematics Research and Biodiversity Collections Division, has to take steps to guide the preservation of its collections. This policy provides guidelines for securing and protecting herbarium collections, through the use of appropriate environmental conditions and treatment of specimens against damage.

Aims of the policy

To standardise procedures for protecting the collections held in SANBI herbaria. To provide guidance and information about policy and procedures for securing and protecting the SANBI herbaria collections.

Policy

- Curators are tasked with providing appropriate environmental and hazard-free conditions for housing specimens.
- Staff based in the herbarium and users of the collection are to be aware of the conditions and to assist with maintaining them for protecting specimens.
- All specimens and herbarium materials must be decontaminated before entering the collection.
- Visiting researchers must seek the curator's permission for removing material off sheets.
- Visitors (research scientists) should sign a 'Conditions of Use' document to ensure the safe handling of specimens. Removal of samples from type specimens and those of historical value is prohibited.
- Food must not be consumed within the herbarium working area.
- Herbarium cabinets must be kept closed.
- All equipment relevant to fire control needs to be regularly inspected, tested and serviced to make sure it is in working order at all times.
- An emergency evacuation procedure and fire drill must be in place in each herbarium and staff should be subjected to occasional evacuation drills and delegated staff (firefighting teams) to firefighting practices.

Process

Guidelines for securing and protecting collections are given in Addendum 1.

ADDENDUM 1

1. Controlling insect entry into the herbarium collection

1.1. Specimens received must be decontaminated before entering the collection.
Note: Once dry, bryophytes and lichens are rarely attacked by insects, which make it unnecessary to decontaminate specimens and fumigate these collections.

1.2. Decontaminate herbarium materials like corrugated cardboard, genus and species folders before storing in the herbarium.

1.3. Insect screens covering open windows should be kept closed. In air-conditioned environments, windows can be kept sealed.

1.4. Ensure the herbarium cabinets are kept closed.

1.5. It is advisable not to bring living plants into herbaria, especially in subtropical climates (KZN Herbarium). In drier climates, living plant material should be placed in closed plastic bags for use in the herbarium.

2. Keeping the integrity of specimens

2.1. Visitors to herbaria, or scientists working with loan specimens, are not allowed to remove portions of specimens without the permission of the curator.

2.2. Material required for anatomy, cytology, palynology and phytochemistry studies must be approved in advance and fully documented. A label should be attached to the specimen indicating its use in a particular study and the material cited as vouchers in a publication.

2.3. To prevent destructive sampling of specimens, removal of portions should be from specimens with adequate material and data.

2.4. Suitable loose material may be available in the envelopes mounted on the herbarium specimen sheet. Check the envelopes before removing samples of plant material from the specimen.

Read Bridson & Forman (1989), *The Herbarium Handbook*, pages 124–127.

3. Maintaining environmental control

3.1. The temperature in the collection should as far as practically possible be kept at 20–23°C and humidity at 40–55%. Low humidity reduces the risk of fungal infection.

3.2. The floors and work surfaces should be kept cleaned, dust free and food free. Food should not be consumed within the herbarium working area.

3.3. Collections are fumigated annually to assist with protection against insects. Insect repellents and freezing are used regularly between fumigations to treat infestation.

4. Preventing fire and flood damage

4.1. SANBI herbaria are fitted with fire alarm systems. The National and Compton herbaria are also fitted with fire suppression systems. The KZN Herbarium is equipped with fire hydrants in appropriate places.

4.2. The installation of fire hydrants is to be advised by trained firefighting team leaders.

4.3. All equipment relevant to fire control needs to be regularly inspected, tested and serviced to make sure it is working at all times.

4.4. An emergency evacuation procedure and fire drill must be in place in each herbarium and staff should be subjected to occasional evacuation drills and delegated staff (firefighting teams) to firefighting practices.

4.5 Flooding could cause irreparable damage to specimens. The herbarium building should be fitted with an appropriate roof that needs to be well maintained to prevent flood damage.

5. Keeping records in electronic format

5.1. Specimens in SANBI herbaria are being digitised. Data from labels are captured onto BRAHMS and are made available to the public via SIBIS (http://sibis.sanbi.org).

5.2. Type specimens are scanned and are accessible through JSTOR Plant Science.

5.3. It is necessary to keep regular backups of the database and scanned images.

6. Best practice documentation

6.1. Visiting researchers should sign a 'Conditions of Use' document to ensure the safe handling of specimens.