

EXECUTIVE SUMMARY A:
Brackenridge Biodiversity Survey Report
Prof. Patricia M. Holmes (PhD), 20th October 2023
- Summary author: Dr. Jan Christoph Meister -

A Bio-Diversity Survey was undertaken by Prof. Patricia M. Holmes at Brackenridge Estate August 17-18th 2023. Particular attention was paid to

- I. vegetation and habitat types present
- II. abundance of invasive alien vegetation
- III. condition of the vegetation
- IV. indigenous and alien flora species

The current document summarizes Prof. Holmes' s findings and recommendations and is based on her original 32-page document titled "Brackenridge Biodiversity Survey Report" dated 20th October 2023.

Main findings

Brackenridge Estate's site falls within the Fynbos Biome and is made up of several different plant communities, as influenced by topographical features, including slope, aspect, ravines and hydrology. During the survey a total of 235 indigenous species in 66 families was identified which were also documented online on iNaturalist under the Brackenridge Estate Project.

Brackenridge's indigenous plant communities are however masked by the moribund state of much of the Fynbos owing to fire exclusion and tree invasion. The survey report's present flora list is therefore likely to under-represent the actual extent of Fynbos communities, as well as the potential occurrence of particularly valuable Red List-species, of which two were identified during the author's site visit.

Overall, much of the natural vegetation occurring in the private open spaces at Brackenridge was found to be in poor to moderate condition, owing to a combination of three factors:

- Lack of fire: Most of the estate has not burnt in over 25 years, and in parts probably up to 40 years as indicated by historical aerial imagery.
- Invasion of alien species: Fire exclusion in Fynbos has allowed Forest species and Thicket to invade and ultimately shade out and replace Fynbos species in the above ground vegetation. This problem is exacerbated by foreign invader plants, such gums, wattles and pines etc., of which 39 species in 20 families were identified during the survey.
- Fragmentation of the habitat by housing development: This cannot be reversed.

Recommendations

The survey report recommends that the following actions be taken in order to maintain and enhance Brackenridge's Fynbos Biome biodiversity:

- Drafting and adoption of an "Integrated fire and invasive species management plan" as an addendum to the (new) operational phase EMP. This plan will require inputs from the Estate Management, the Environmental Management Subcommittee and other stakeholders, in particular the Southern Cape Fire Protection Association. - Ecological burns and invasive alien control were emphasized as the key management interventions required to restore and

conserve the Fynbos biodiversity on the estate. The report stresses that an “Integrated Fire and Invasive Species Management Plan” would at the same time also serve to address the current fire risk to housing and infrastructure on the estate, with a view to fuel and fire risk reduction. The existing fire belt system was found insufficient as it does not cover all the interfaces between the Fynbos vegetation and housing.

- The implementation of the proposed “Integrated fire and invasive species management plan” would result in a combination of ecological/biodiversity and fire protection benefits. – The survey recommends to involve the Southern Cape Fire Protection Association also in the actual implementation of fire management. Furthermore, experienced operational alien control and Fynbos ecological burning contractors would need to be appointed to implement the plan.
- Segmentation of the Estate into Management Blocks, with a Monitoring Plan (e.g., regular fixed-point photograph documentation coupled with iNaturalist species tracking) for each management block. – It is recommended that these blocks be as large as possible in order to minimize negative edge effects, such as brush cutting of fire belts, resultant small and cool fires, alien herb invasion and rodent predation of re-establishing seedlings. This would simultaneously minimize operational costs and discomfort to residents (i.e., from number of burn days).
- Resource allocation. – The report emphasizes that sufficient resources must be made available for invasive species control pre-and post-burn, as well as for subsequent follow-up control activities particularly during the first two years. Residents interested in nature could volunteer to assist both in monitoring the seasonal post-fire succession and in hand-pulling the aliens and thereby play a positive role in restoring the Estate’s biodiversity. Data for monitoring and feedback to residents may be obtained from iNaturalist using the Brackenridge Estate project link.

A summary of the author’s conclusions and recommendations in SWOT format can be found on p.16-17 of her report.

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Dr. Jan Christoph Meister
Brackenridge Environmental Sub-Committee – 20 October 2023