

# The Tokai Manner

Inaugural Bumper Edition

Newsletter of the Friends of Tokai Park

Issue 1

# Friends of Tokai Park

Address: *still to be finalized*

Friends of Tokai Park is a WESSA friends group devoted to helping to manage and promote the Tokai section of the Table Mountain National Park

## Office Bearers:

Chair: Chris Walker 021 712 7469

Treasurer: Jay Cowen 021 715 2074

Other: James Forsyth, Alan Mountain, Maud Purves, Tony Rebelo.

## Task Team Leaders:

**Alien hacking.** *Convenor:* Jay Cowen 021 715 2074

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**Arboretum maintenance and development.**  
*Convenor:* Sharon Bosma 021 786 1072

**Baboons.** *Convenor:* Sue Oosthuizen 021 712 7473

**Events** *Convenor:* (Vacant)

**Fund raising and special projects.**  
*Convenor:* James Forsyth 021 7127 975

**Fynbos restoration and maintenance.**  
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**Heritage.** *Convenor:* Alan Mountain 021 794 7129

**Newsletter and publications.**  
*Convenor:* Tony Rebelo 021 7127 816

**Nursery.** *Convenor:* David Merrington 021 712 1641

**Path, road, fencing and signage maintenance.**  
*Convenor:* James Forsyth 021 7127 975

**Picnic Area maintenance and education,**  
*Convenor:* (Vacant)

**Pine plantation maintenance.**  
*Convenor:* Sylvia Brass

**Species surveys and photographs.**  
*Convenor:* Chris Walker 021 712 7469

**TMNP Visitor Assistance.** *Convenor:* (Vacant)

**TMNP Liaison.** *Convenor:* (Vacant)

**Transformation & Development Issues.**  
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**Wetlands maintenance.**  
*Convenor:* James Forsyth 021 7127 975

## Our Cover:

Tokai Manor House, now Headquarters of the Table Mountain National Park, has just been restored. The history of this national monument is detailed in this issue.

# The Tokai Manner

**The Tokai Manner** is the newsletter of the Friends of Tokai Park. It is published quarterly. It is a newsletter about Friends of Tokai Park, with contributions by Friends of Tokai Park. It is thus your newsletter, for you to use and for you to communicate interesting findings and events.

## Notice to contributors

Contributions to **The Tokai Manner** are invited from Friends of Tokai Park on any issue of interest or relevance to the Tokai section of the Table Mountain National Park or its surrounds. This includes sightings, observations, activities, reports, projects, news, historical insights and anything else of general interest to friends. Photographs (electronic, max 2 Mbyte) and illustrations are also sought. Questions are also welcomed and we will endeavour to find a specialist or manager to answer them.

All material for inclusion in **The Tokai Manner** should be sent to the editors at [t.rebelo@sanbi.org.za](mailto:t.rebelo@sanbi.org.za). Receipt of articles will not usually be acknowledged and the inclusion of articles is solely at the discretion of the editors. Articles may be shortened or edited.

Many thanks to those who have contributed to this issue. A special thanks to Pat Holmes and Berta van Rooyen for proofing copy.

The deadline for the March 2010 issue will be 31 January.

## Publication details

**The Tokai Manner** is available only electronically. Published quarterly as A4: to save paper when printing, print as 2 pages per page to obtain an A5 copy.

Copyright rests with authors, but any material published is available for school projects and non-profit use by members to promote the Tokai Section of the Table Mountain National Park and Friends of Tokai Park.

## Abbreviations and Conventions used

Species names of animals and plants follow the lists used in the first issue of **The Tokai Manner**. This follows:

Amphibians: **P&C:** du Preez & Curruthers' A complete guide to the frogs of southern Africa. 2009. Struik.

Birds: **Roberts:** Robert's Birds of southern Africa. 2005.

Butterflies: **Pennington:** Dickson & Kroon's Pennington's butterflies of southern Africa. 1978. Donker.

Mammals: **Smithers:** Skinner & Chimimba's The Mammals of the southern African subregion. 2005. Cambridge.

Plants: **G&M:** Goldblatt & Manning's Cape Plants. 2000. *Strelitzia* 9.

Reptiles: **Branch:** Branch's Field guide to snakes and other reptiles of southern Africa. 1998. Struik.

Tracks: **Stuart<sup>2</sup>:** Stuart & Stuart's A field guide to the tracks & signs of southern & east African wildlife. 2000. Struik.

More specialized groups need referencing.

### Key to Symbols used

- ☠ - alien invasive at Tokai
- ☠ - poisonous
- 🌿 - indigenous to Tokai
- ☠ - extinct
- ↻ - reintroduced to Tokai
- ✈ - migratory
- 🏠 - recent colonizers
- ? - suspect records for Tokai

## Editorial

This bumper edition of The Tokai Manner is a special issue bringing together both historical information about the Tokai Park and its current status. Prominent among the contents of species lists of the plants and animals found in various parts of this special section of the Table Mountain National Park. Also included is a section answering questions posed by the Tokai Parks neighbours, who are rightfully concerned about what is happening in our own special piece of National Park.

An especial thanks to Chris Botes, TMNP manager of Tokai, for providing the species lists and questions, accumulated over the last few decades by managers at Tokai.

Tokai is not just special – it is unique. Unique in the National Park, as the only piece of Cape Flats Fynbos in the Park. Unique in the City as the largest nature reserve for Cape Flats Fynbos (and unless urgent conservation action is taken in the Blouberg area in the north of the City, the largest nature reserve that will be possible for this City of Cape Town endemic vegetation type). Unique in the world as the last remaining place on earth where we can still conserve many species of threatened plants in a fully functioning and viable long-term ecosystem. Unique in southern Africa as having a comprehensive, well-documented and curated herbarium collection of plants that occurred here before urban sprawl obliterated Cape Flats Sand Fynbos. With as many plant species as the entire Arid Savanna of Northern Province and Botswana, and more IUCN Red List plant species than the provinces of Gauteng, Free State and North-west Province combined, the Tokai section of the Table Mountain National Park is extraordinary!

There can be no doubt that the Tokai Park increases both the monetary value of our properties and our quality of life. This value comes, unfortunately, at a cost. Wild animals and plants are a joy and pleasure on one hand, but a pain and pest on the other. Often the difference is purely the result of a recent experience – one incident can change the way we perceive our neighbours. It is incumbent on us to stay well-informed. To proactively defend the area against developments that might destroy its natural integrity. To help maintain the area as a viable and special long-term conservation area.

SANParks may be managing the area. But they are managing it for the citizens of the entire earth as part of one of the World's Natural Heritage Sites. It is also of National significance, with so many Red List species and three threatened national vegetation types in Tokai. But most importantly SANParks are managing it for us. While the world may hold us responsible for the safe keeping of this jewel, it is ours: we use it! We enjoy it more than most. We stand the most to lose if it becomes degraded or destroyed. It is in our interest to ensure that it is properly and efficiently managed. It is our responsibility to help maintain it. For our kids, for the world, but most importantly, for ourselves.

This newsletter is your forum for achieving this. If you have a question, a gripe, an accolade, an observation, then this is the medium to communicate these concerns and jubinations. It is by working together that we will move forward and break down the divide between the baboon haters and caracal lovers, the plantation huggers and Fynbos freaks, and truly become friends of Tokai Park. Our Park, forever!

Tony Rebelo.

## Chair's report

"The Friends of Tokai Park has been reborn, filling a dire need to bridge the divide between concerned residents and the National Park. At the inaugural meeting held at Tokai Manor House all initial formalities such as the selection of a committee and adoption of the constitution were completed. This is only the beginning.

Many hurdles lie ahead of the committee and members in bringing to fruition the restoration of the Tokai Park and safeguarding the environment contained therein. The success or failure of this friends group will hinge on the amount of commitment and involvement of each and every member. Everyone has the ability to contribute in some way, no matter how small that contribution may be. Each and every member will have their own dream of how the conservation of the park should progress. It is therefore very important that those ideas are communicated to the committee.

The Friends of Tokai Park is there to serve all who use the park. It will have succeeded if it is able to meet the demands of both conservation and recreational users so that in the end both goals result in a win-win situation.

It is now up to the committee and members to knuckle down and make the vision a reality. We will be judged by the results we achieve."

Chris Walker

## New members

### *Welcome to the following members:*

Nigel Forshaw, Oakridge  
James Forsyth, Tokai  
Di Franklin, Constantia Hills  
Lynn Gardiner, Tokai  
Pat Gardiner, Tokai  
Erica Harley, Tokai  
Paul Johnston, Tokai  
Margaret Kahle, Wynberg  
Lyn McCallum, Bergvliet  
Jan Mol, Tokai  
Sybil Morris, Bergvliet  
Maud Purves, Tokai  
Chris Walker, Tokai  
Meg Wilding, Tokai

### *Welcome to the following families:*

Sharon Bosma & Dick Churley, Simonstown  
Renate, Brian and Shane de Stadler, Bergvliet  
Warren Gray & Maloy van Heijnsbergen, Tokai  
Anthony & Wendy Hitchcock, Meadowridge  
Eugene & Alice Moll, Kistenhof  
Alan & Jenny Mountain, Nova Constantia  
Peter & Morag Naylor, Constantia  
Tony & Shirley Norton, Bergvliet  
Steve & Julie Padmore, Lakeside  
Heather, Leanne & Chloe Patton, Tokai  
Richard & Leah Poulter, Tokai  
Tony, Pat & Alex Rebelo, Bergvliet  
George & Sue Smith, Kirstenhof  
Emile & Berta van Rooyen, Tokai

*"Friends" who have not yet paid their subscriptions will be acknowledged when they do.*

### *Thank you for the following donations:*

James Forsyth, R400 for WESSA fees.

## TOKAI MANOR HOUSE

The area of Tokai was part of Simon van der Stel's grazing area. In 1792 the estate was sold to Johan Andreas Rauch, who had been head of the Armoury and, since 1775, superintendent at Grootte Schuur. Only five months later, Andreas Teubes, a German surgeon, became the new owner of the property "under the so-called Prinskasteel". The name is a corruption of the feminine Prinseskasteel, a cave high up in the Constantiëberg, now called Elephant's Eye, which is reputed to have been the stronghold of a Hottentot chieftainess.

Whilst Teubes was owner, an additional grant of land was made to him in 1795, wherein the name "Tokay" was first used. It is named after an area in Hungary that produced a sweet, mellow, aromatic wine, renowned in Europe in the 18<sup>th</sup> Century as "Tokay Essence."

In 1795 Teubes engaged Louis Michel Thibault to design the Manor House. It has been described (by Desirée Picton-Seymour) as "perhaps the most outstanding homestead in the Peninsula." Its pedimented, square front gable bears the unmistakable stamp of Thibault's work. Cook and Fransen describe the gable as "a masterpiece in its own right." The homestead is raised well above the customary ground level, having a very high front veranda, with massive round pillars. Unusually, the veranda seats face inwards towards the manor, and not out over the view.

The Manor House was completed in 1796, in time for the marriage of Teubes' daughter, Alida, to Nicolaas Roussouw of the next-door farm, Steenberg. The cost of building this splendid house probably ruined Teubes, for, in 1799, he declared bankruptcy and was forced to sell the estate. The property subsequently had two hardworking, though short-term German owners: Jan-Frederick Herwig, followed by Johann Casper Loos. Robert Brown, the world-famous botanist, spent two nights at the Manor House in 1801, during a plant collecting trip on foot, while his ship HMS Investigator was being revictualled at Simonstown. In 1802 Petrus Michiel Eksteen, son of Hendrik Oostwald Eksteen, of nearby Bergvliet Farm, took over ownership.

Petrus was gregarious and spendthrift: it was at this time that Tokai Manor House acquired its famous ghost. At one of Petrus's festive New Years Eve banquets, a young gentleman (thought to be his son), mounted the precipitous veranda steps of the Manor House on horseback for a wager. On his descent, to the horror of onlookers, horse and rider slipped and fell to their deaths. Now, on New Year's Eve, the pair can be heard cantering through the forest to repeat their foolhardy bet.

Petrus gradually squandered his patrimony and built up debts on all sides. He even approached Lord Charles Somerset for a loan. In 1849, he was declared insolvent and the estate put up for auction. Sebastian Eksteen, a relation, bought the farm, thus helping to keep it in the family for almost 80 years.

By the 1880s, the Eksteens, like many other families of Cape wine-farms, ran into money problems. Vineyards worldwide were decimated by *Phylloxera*, which brought wine production to a stop. In 1883 Tokai was sold to the Cape Colonial Government for a mere £7500, and only two years later the Government paid £5000 for Groot Constantia! The Government planned to turn Tokai into a lunatic asylum, but this scheme was halted by the vigorous protest of neighbouring farmers.

Joseph Storr Lister, who later became Chief Conservator of Forests in South Africa, took up quarters in the Tokai Manor during 1885 and established the arboretum, nursery and surrounding pine plantations. The grounds were used as a forestry school until 1933.

Tokai Manor House was proclaimed a National Monument in 1961, and formed part of the estate of the Porter School, run by the Cape Province and then the Western Cape provincial

authorities. In the 2000s it was in a sad state of disrepair. The thatch roof was collapsing, partly due to baboons removing the thatch, and rain and damp were ruining the walls and floors inside.

The building was restored in 2010 and in that year was leased to TMNP for one year. The TMNP headquarters have moved in, and the future remains to be seen.

On the 25 October 2010 Friends of Tokai Park held their inaugural meeting in the main hall.

Source: H. Mauve, *Under the Elephant's Eye*, a short history of Tokai. Unpublished (ca 1990s) 6-8; Chris Botes, TMNP.



Tokai Manor House, November 2010



Does anyone recognize this picture? It is definitely the veranda of the Tokai Manor. But when was it taken and who are these people? It was found in a folder at SANBI. There are other pictures of Tokai that we would like to use, but we need to obtain permission: Can you help?

## TOKAI NATIONAL ARBORETUM

No other arboretum can match the splendid stand of Karri or the magnificent groves of Scribbly Gum, Jarra and Western Australian Blackbutt that the Tokai Arboretum boasts: possibly the finest in existence anywhere outside Australia. Similarly the stands of Canary, Aleppo and Stone Pines are beautiful. No other arboretum can rival the assemblage of big trees found in the Main Arboretum, an estimated 28 of which are record heights for South Africa. The collection represents an unsurpassed arboreal heritage.

The Tokai Arboretum is, however, a hotchpotch of big and small trees, established without a plan and without silvicultural or arboricultural finesse. There is a lack of open vistas, swards, shrubberies and beds of flowers to show off the trees. The composition and lay-out is unsatisfactory in that there is repetition of some species in plots and singly. Thus far fewer species are contained than is potentially the case. It is also sadly neglected, infested with invasive species, and without a dedicated maintenance staff.

The Main Arboretum at Tokai is the oldest wholly government financed arboretum in South Africa. The Main Arboretum contains mainly hundreds of single trees and groups of trees as well as numerous small plots and a few larger stands. Some of these comprise the celebrated "Eucalyptium". Following the establishment of the Main Arboretum, three lesser arboreta were brought into being at Tokai Plantation, namely the Paddock Arboretum (on infertile sands of the flats), the Spekboom Belt Arboretum (on fertile granite slopes) and the Flagstaff Arboretum. The last was soon abandoned.

The area of the Main Arboretum is 14 ha. Several adjacent compartments extend the area to 26 ha.

The first exotic plantings at Tokai were made in 1694, when 4379 English Oaks were established there by Simon van der Stel. The earliest attempt at commercial afforestation at Tokai was in 1884 when Joseph Storr Lister planted Monterey Pines. In 1886 an arboretum was laid out adjoining the nursery at Tokai, and 150 species were established, including a few indigenous and some national-indigenous species. There was already a small copse and scattered trees of Stone Pine. During the year 1902 some 43 plant species were established in the arboretum.

These trees were planted singly in a park-like formation. Specimens of other exotic trees were added from time to time as new introductions became available. This is ideal for displaying a large variety of different trees. However, this mixture of species, as well as the discrepancies between the ages of the trees, precludes a silvicultural evaluation of the trees. A systematic effort was thus made to introduce other exotic species for plantation trial and, it was decided to obtain species from countries with similar climates. Trees from Australia, India, the southern states of North America and



Mexico consequently received attention.

A large number of gums, pines and conifers were imported and planted in small trial plots of various sizes, with new plots added as species became available. However, these were sometimes so small that less rapidly-growing species were influenced by faster-growing neighbours. Nevertheless, general health and acclimatization could be judged, and it was concluded that conifers were more suited to the area than broad-leaf trees, although Gums did well on deep, rich soils. Single trees were still planted for demonstration, including in 1916 Mexican pines and other American trees such as Oaks.

From 1906-1911 Tokai hosted The South African Forestry School "for training men for the higher grades of the Forest Service." Two students, J.D.M. Keet and A.J. O'Conner, became later directors of Forestry. This was replaced school for training men for the forester grade from 1912-1932. This school was moved to Saasveld, near George, in 1932.

In 1933 the director of forestry, Mr. J.D.M. Keet, requested the conservator of Forestry to devote more attention to the arboretum's upkeep, and provided specific instructions, aimed at making the area more attractive to visitors and at improving its educative and scientific value. Perhaps because of the war, the arboretum lapsed steadily into a state of greater neglect. During 1951, Mr. Paul Sauer, as minister of Forestry, also remarked unfavourably on the unkempt appearance and the absence of labels. His instructions were apparently barely acted upon.

In the 1970s several dyeing, mammoth Stone Pines had to be brought down limb by limb so as to minimize damage to smaller trees beneath them. Many of the latter had become badly misshapen by shade. Some trees were, unfortunately, no longer healthy, and others had been thrown by wind. In the small plots less robust species have been suppressed or forced to grow sideways.

Although many of the trees are healthy and attractive, many dead, moribund, broken or misshapen individuals exist. Attention to this was given from 1984 to 1986, but more work is still needed. Dangerous, defective and unsightly trees have to be felled or shaped both to render the area safe for the public and to improve its aesthetic quality: not least by opening up vistas which will bring some of the finer specimens into greater prominence, and gaps need to be filled with trees, shrubs, flower beds and lawns.

Heavy invasions by Long-leaf Wattle, Blackwood and also by Cypressess, Gums and Australian Cheesewood need to be continuously controlled. Black Locust and English Elm are coppicing particularly badly. Very heavy invasions by Outeniqua and Real Yellowwood are also evident: dense thickets of these species need to be thinned out or removed. Some areas are heavily infested with Kikuyu and Buffalo Grass: these should be mowed or eliminated.

The roads through the Main Arboretum are generally in a poor condition. They should be resurfaced and properly drained. Footpaths should be laid out in the "Eucalyptium" and repaired elsewhere. Benches, logs and rubbish bins must be provided. Additional toilets and ablution facilities should be provided. A proper water reticulation system should be installed to the main concentrations of shrubberies, herbaceous borders and lawns.

The Main Arboretum was declared a National Monument in August 1985, on its 100<sup>th</sup> anniversary.

In the 1990s an attempt was made to establish a Gondwana Garden to show off the plants typical of Gondwana, many of which were present at the Cape 60 million years ago. However, competition with existing trees resulted in poor establishment and the plantings were abandoned.

Sources: Our Green Heritage 1973, p. 25-28; S.A. Biografiese Woordboek, III, HSRC, 1977, p. 541; HB Rycroft & RJ Poynton, Status of Forestry Arboreta, 1983; H. Mauve, Under the Elephant's Eye, a short history of Tokai, p. 9; Standard Encyclopaedia of S.A., p. 447; Chris Botes, TMNP

## TREES OF THE TOKAI ARBORETUM

About 900 plants in 300 species are recorded in the main Arboretum. Numbers of plants in brackets are for 1997 (where not given, only 1 plant exists), or alternatively (where two numbers are given) for both 1986 and 1997. The date of first planting is given for recorded species.

Ordered by Family and then alphabetically by Latin name. Synonyms are only provided for species found on older lists.

‡ = all dead; ♪ = indigenous to Tokai; ☹ = invasive alien

### Birch Family Betulaceae

Formosan Alder *Alnus formosana*  
Grey Alder *Alnus incana*  
Silver Birch *Betula pendula* (= *alba*) ‡ 1886  
European Hop-hornbeam *Ostrya carpinifolia*

### Box Family Buxaceae

Box *Buxus sempervirens*  
Buffalothorn *Ziziphus mucronata*

### Cacao Family Sterculiaceae

Flame Kurrajong *Brachychiton acerifolius* (2)  
Lacebark Kurrajong *Brachychiton populneus* (2) ☹

### Chile Pine Family Araucariaceae

Parana Pine *Araucaria angustifolia*  
Bunya-bunya *Araucaria bidwillii*  
Norfolk Island Pine *Araucaria heterophylla* (= *excelsa*) (2)

### Citrus or Buchu Family Rutaceae

Cape Chestnut *Calodendrum capense* (4)  
Wing Prickly-ash *Zanthoxylum alatum*

### Cypress Family Cupressaceae

Cypress-Pine sundry *Callitris* sp  
Black Cypress-Pine *Callitris endlicheri* (= *calcarata*) (2)  
Oyster Bay Pine *Callitris rhomboidea*  
California Incense Cedar *Calocedrus decurrens*  
Lawson Cypress *Chamaecyparis lawsoniana* (4)  
Japanese Red Cedar *Cryptomeria japonica*  
Hayata *Cunninghamia konishii*  
Chinese Fir *Cunninghamia lanceolata* (2)  
Rough-bark Arizona Cypress *Cupressus arizonica* (2)  
Gowen Cypress *Cupressus goveniana*  
Tekate Cypress *Cupressus forbesii*  
Weeping Cypress *Cupressus funebris* (= *Juniperus*) (15)  
Cedar of Goa *Cupressus lusitanica* (25/ 19) 1886  
Bentham's Cypress *Cupressus lusitanica* var. *benthamii* (= *benthamii*)  
Monterey Cypress *Cupressus macrocarpa* (31/ 22) 1886  
Italian Cypress *Cupressus sempervirens* var. *horizontalis* (10) 1886  
Italian Cypress *Cupressus sempervirens* var. *stricta* (8)  
Sargent Cypress *Cupressus sargentii*  
Bhutan Cypress *Cupressus torulosa* (8) 1886  
Juniper sundry *Juniperus* sp (6)  
Canary Islands Juniper *Juniperus cedrus* (9)  
One-seed Juniper *Juniperus monosperma*  
Pencil Cedar *Juniperus virginiana* (16) ☹  
Coast Redwood *Sequoia sempervirens* (4)  
Bald Cypress *Taxodium distichum* (3) 1886  
Coffin Tree *Taiwania cryptomerioides*  
Chinese Thuja *Thuja orientalis*  
Willowmore Cypress *Widdringtonia schwarzii*  
Mulanje Cypress *Widdringtonia whytei*

### Elder Family Adoxaceae

Maple-leaf Viburnum *Viburnum acerifolia*  
Korean Spice Viburnum *Viburnum carlesii*  
Wayfaring Tree *Viburnum lantana*  
Viburnum unknown – name not found: *Viburnum latifolia*

### Elm Family Ulmaceae

White Stinkwood *Celtis africana* ♪  
Sugarberry *Celtis mississippiensis*  
English Elm *Ulmus procera* (= *campestris*) (32/ 22) 1886  
Chinese Elm *Ulmus parvifolia*

### Fibrebark Family Thymelaeaceae

Pompon Tree *Dais cotinifolia*  
Mezereon *Daphne mezereum*

### Fig Family Moraceae

Moreton Bay Fig *Ficus macrophylla* (3)  
Taiwan Fig *Ficus retusa* (5)  
Port Jackson Fig *Ficus rubiginosa* (2)  
Osage Orange *Maclura pomifera*

### Gum Family Myrtaceae

Western Australian Peppermint *Agonis flexuosa* (4)  
Sydney Red Gum *Angophora costata* (19/ 15) 1886  
Marri *Corymbia calophylla* (2)  
Lemon-scented Spotted Gum *Corymbia citriodora*  
Yellow Bloodwood *Corymbia eximia*  
Red Flowering Gum *Corymbia ficifolia* (7) 1886  
Spotted Gum *Corymbia maculata*  
Gum sundry *Eucalyptus* sp. (3)  
White Box *Eucalyptus albens*  
Blakely's Red Gum *Eucalyptus blakelyi*  
Blaxland's Stringybark *Eucalyptus blaxlandii*  
Bangalay *Eucalyptus botryoides*  
Red River Gum *Eucalyptus camaldulensis* (5) ☹  
Brown Stringybark *Eucalyptus capitellata* (2)  
Sugar Gum *Eucalyptus cladocalyx* (2) 1895 ☹  
Yate *Eucalyptus cornuta* (2)  
Cup Gum *Eucalyptus cosmophylla*  
Karri *Eucalyptus diversicolor* (3) 1895 ☹  
River Peppermint *Eucalyptus elata* (= *andreaana*)  
Blue Gum *Eucalyptus globulus* 1895  
Tuart *Eucalyptus gomphocephala*  
Flooded Gum *Eucalyptus grandis* (4) 1895 ☹  
Red Bloodwood *Eucalyptus gummifera*  
Cider Gum *Eucalyptus gunnii*  
Scribbly Gum *Eucalyptus haemastoma*  
Bushy Yate *Eucalyptus lehmannii* ☹  
Yellow Gum *Eucalyptus leucoxyloides* var. *sideroxyloides* (3)  
Yellow Gum hybrid *Eucalyptus leucoxyloides* X ? (= *jugalis*)  
Woolly Butt *Eucalyptus longifolia* (3)  
Red Stringybark *Eucalyptus macrorhyncha*  
Jarrah *Eucalyptus marginata* 1895  
Bullich *Eucalyptus megacarpa* (2)  
Yellow Box *Eucalyptus melliodora*  
Green-leaf Box *Eucalyptus microcarpa*  
Tallow Wood *Eucalyptus microcorys* (3)  
Yellow Stringybark *Eucalyptus muelleriana*  
Messmate *Eucalyptus obliqua* (5) 1895  
Dongora Mallee *Eucalyptus obtusiflora*  
Grey Ironbark *Eucalyptus paniculata* (3) ☹  
Swan River Black Butt *Eucalyptus patens*  
Large-fruit Red Mahogany *Eucalyptus pellita*  
Black Butt *Eucalyptus pilularis* 1895  
Sydney Peppermint *Eucalyptus piperita* (= *bottii*) (2)  
Red Box *Eucalyptus polyanthemos* (3)  
White Peppermint *Eucalyptus pulchella* (= *linearis*)  
Small-fruit Grey Gum *Eucalyptus propinqua*  
Grey Gum *Eucalyptus punctata* (3)  
Grey Peppermint *Eucalyptus radiata* (3)  
Mountain Ash *Eucalyptus regnans*  
Swamp Mahogany *Eucalyptus robusta*  
Sydney Blue Gum *Eucalyptus saligna* (2)  
Mugga *Eucalyptus sideroxyloides* (3)  
Silverton Ash *Eucalyptus sieberi* (= *sieberiana*)  
Silver Peppermint *Eucalyptus tenuiramis* (= *tasmanica*)  
Forest Red Gum *Eucalyptus tereticornis* (2)  
Ribbon Gum *Eucalyptus viminalis*  
Manna Gum *Eucalyptus viminalis* subsp. *cygnetensis* (= *huberiana*) (2)  
Wandoo *Eucalyptus wandoo* (= *redunca*) (2)  
Australian Myrtle *Leptospermum laevigatum* (2) ☹  
Brush Box *Lophostemon confertus* (= *Tristania*) (32/ 25) 1886  
Paperbark sundry *Melaleuca* sp  
Bracelet Honey Myrtle *Melaleuca armillaris* (3)  
Saltwater Paperbark *Melaleuca cuticularis* (10)  
Hillock Bush *Melaleuca hypericifolia* (3)

Niaouli *Melaleuca leucadendra*  
Snow-in-summer *Melaleuca linariifolia* (3)  
Prickly-leaf Paperbark *Melaleuca styphelioides* (13)  
Lemon Bottlebrush *Melaleuca citrina*  
(= *Callistemon*, *M. lanceolatus*)  
Stiff Bottlebrush *Melaleuca rigida* (= *Callistemon*) ♣  
Willow Bottlebrush *Melaleuca saligna* (= *Callistemon*) (14)  
Brush Cherry *Syzygium australe*  
Waterberry *Syzygium cordatum*  
Malabar Plum *Syzygium jambos*

#### Jacaranda Family Bignoniaceae

Jacaranda *Jacaranda mimosifolia*  
Bower Vine sundry *Pandora* sp

#### Mahogany Family Meliaceae

Toon Tree *Cedrela toona* (3) ♣  
Cape Ash *Ekebergia capensis* (3)  
Syringa *Melia azedarach* ♣  
Trichilia *Trichilia roka*

#### Mango Family Anacardiaceae

Wild Plum *Harpephyllum caffrum* (7)  
Pistachio sundry *Pistacia* sp  
Mastic *Pistacia lentiscus*  
Turpentine Tree *Pistacia terebinthus* (3)  
Prairie Sumac *Rhus lanceolata*  
Red Currant-rhus *Searsia chirindensis* (= *Rhus*)  
Wax Tree *Toxicodendron succedaneum* (= *Rhus*)

#### Maple Family Aceraceae

Downy Japanese Maple *Acer japonicum*  
Montpelier Maple *Acer monspessulanum*  
Japanese Maple *Acer palmatum*

#### Oak Family Fagaceae

Sawtooth Oak *Quercus acutissima* (6)  
Californian Live Oak *Quercus agrifolia*  
American White Oak *Quercus alba* ♣ 1886  
Swamp White Oak *Quercus bicolor*  
Algerian Oak *Quercus canariensis* (25) (= *mirbeckii*) 1916  
Turkey Oak *Quercus cerris* (19) 1886  
Ring-cup Oak *Quercus glauca*  
Holm Oak *Quercus ilex* (4)  
Banj Oak *Quercus leucotrichophora* (4)  
Valley Oak *Quercus lobata*  
Burr Oak *Quercus macrocarpa* (3) 1916  
Black-jack Oak *Quercus marilandica* (2)  
Water Oak *Quercus nigra* 1916  
Pin Oak *Quercus palustris* (2) 1916  
Durmast Oak *Quercus petraea* (3) 1916  
Willow Oak *Quercus phellos* (6)  
English Oak *Quercus robur* (30/ 34)  
Netleaf Oak *Quercus rugosa* (= *reticulata*) 1916  
Post Oak *Quercus stellata* (5)  
Cork Oak *Quercus suber* (37)  
Oak hybrid *Bebb's Oak Quercus X bebbiana* (2)  
Oak hybrid *Compton's Oak Quercus X comptonii*  
Oak unknown – name not found: *Quercus campicola* (2)

#### Olive Family Oleaceae

Ash sundry *Fraxinus* sp  
Narrow-leaf Ash *Fraxinus angustifolia* (5)  
Common Ash *Fraxinus excelsior* ♣ 1886  
Manna Ash *Fraxinus ornus*  
Red Ash *Fraxinus pennsylvanica* (2)  
Green Ash *Fraxinus pennsylvanica* var. *lanceolata* (2) 1916  
(= *pubescens*, = var. *subintegerrima*)  
Velvet Ash *Fraxinus velutina*  
Japanese Privet *Ligustrum ovalifolium*  
Small Ironwood *Olea capensis* (3) ♣  
Wild Olive *Olea europaea* s. *africana* (3) ♣  
Black Ironwood *Olea laurifolia* (3)

#### Pea Family Fabaceae

Two-vein Hickory *Acacia binervata* 1886 [Pea]  
Silver-leaf Wattle *Acacia falcata*  
Blackwood *Acacia melanoxylon* ♣ ♣ 1886  
Orchid Tree *Bauhinia variegata*  
Carob Tree *Ceratonia siliqua* (7)  
Judas Tree *Cercis siliquastrum*  
Coast Coraltree *Erythrina caffra*  
Cockspur Coral Tree *Erythrina crista-galli*  
Honey Locust *Gleditsia triacanthos*  
Umzimbeet *Millettia grandis* (2)  
Karoo Boerbean *Schotia afra*  
Weeping Boerbean *Schotia brachypetala*  
Bush Boer-bean *Schotia latifolia* (4)  
Umtiza *Umtiza listeriana*  
Western Keurboom *Virgilia oroboides* (2) ♣

#### Pine Family Pinaceae

Deodar *Cedrus deodara* (6)  
Spruce sundry *Picea* sp  
West Himalayan Spruce *Picea smithiana* (3)  
Pine sundry *Pinus* sp (2)  
Arizona Pine *Pinus arizonica*  
Canary Pine *Pinus canariensis* (28/ 27) 1886 ♣  
Mexican Pinyon *Pinus cembroides*  
Big-cone Pine *Pinus coulteri* (2) 1916  
Michaoacan Pine *Pinus devoniana* (= *michoacana*)  
Short-leaf Pine *Pinus echinata* ♣ 1895  
Apache Pine *Pinus engelmannii* 1916  
Spruce Pine *Pinus glabra*  
Aleppo Pine *Pinus halepensis* (4) 1886 ♣  
Khasi Pine *Pinus kesiya* (2)  
Lawson's Pine *Pinus lawsonii* 1916  
Chihuahua Pine *Pinus leiophylla*  
Lumholtz's Pine *Pinus lumholtzii* ♣ 1916  
Montezuma Pine *Pinus montezumae* var. *hartwegii* ♣ 1916  
Bishop Pine *Pinus muricata* (2) 1895  
Austrian Pine *Pinus nigra* var. *nigra* ♣ 1916  
Egg-cone Pine *Pinus oocarpa*  
Long-leaf Pine *Pinus palustris*  
Mexican Pine *Pinus patula* 1916  
Cluster Pine *Pinus pinaster* (6) 1886 ♣  
Stone Pine *Pinus pinea* 1850s  
Western Yellow Pine *Pinus ponderosa* 1916  
Smooth-bark Mexican Pine *Pinus pseudostrabus* 1916  
Table Mountain Pine *Pinus pungens*  
Monterey Pine *Pinus radiata* (49/29) 1884 ♣  
Northern Pitch Pine *Pinus rigida*  
Chir Pine *Pinus roxburghii* (= *longifolia*) ♣ 1895  
Weymouth Pine *Pinus strobus* ♣ 1916  
Scots Pine *Pinus sylvestris*  
Loblolly Pine *Pinus taeda* (2) 1895 ♣  
Bhutan Pine *Pinus wallichiana* (3)

#### Plane Family Platanaceae

London Plane *Platanus X hispanica* (= *X acerifolia*) (4) 1886  
Oriental Plane *Platanus orientalis*

#### Rose Family Rosaceae

Common Pearlbush *Exochorda racemosa*  
Toyon *Heteromeles arbutifolia* (? *Heteromalla*)  
Siberian Crab *Malus baccata*  
Red Stinkwood *Prunus africana*  
Ninebark *Physocarpus opulifolius*  
Black Cherry *Prunus serotina* (? *Populus*) ♣ 1886  
Chinese Quince *Pseudocydonia sinensis*

#### Sagewood Family Buddlejaceae

Olive Sagewood *Buddleja saligna*  
Forest Nuxia *Nuxia floribunda*

#### She Oak Family Casuarinaceae

She Oak sundry *Casuarina* sp  
Black She Oak *Allocasuarina suberosa* (3) (= *Casuarina*)  
Forest She Oak *Allocasuarina torulosa* (= *Casuarina*)  
Beefwood *Casuarina cunninghamiana* (3) ♣

### Spikethorn Family Celastraceae

- Cape Saffron *Cassine peragua* (= *kraussiana*) (3) **R**
- Common Saffron *Elaeodendron croceum*  
(= *Cassine papillosa*) (18)
- Small-leaf Saffron *Elaeodendron zeyheri* (= *Cassine crocea*)
- Common Spike Thorn *Gymnosporia buxifolia* **R**  
(= *Maytenus heterophylla*)
- Mountain Maytenus *Maytenus oleoides*  
(= *Gymnosporia laurina*) (2)

### Sugarbush Family Proteaceae

- White Silky Oak *Grevillea hilliana* (6)
- Australian Silky Oak *Grevillea robusta* (10) **R**
- Silvertree *Leucadendron argenteum* **R**
- Waratah *Telopea speciosissima*

### Walnut Family Juglandaceae

- Hickory sundry *Carya* sp
- Chinese Wing Nut *Pterocarya stenoptera*

### Wild Peach Family Flacourtiaceae

- Kei Apple *Dovyalis caffra*
- Wild Peach *Kiggelaria africana* (9) **R**
- Red Pear *Scolopia mundii* **R**

### Willow Family Salicaceae

- Grey Poplar *Populus X canescens* (2)
- Grey Poplar *Populus canescens* var. *rossii* (2) 1916
- Eastern Cottonwood *Populus deltoides* var. *missouriensis* 1916
- Cottonwood *Populus robusta*

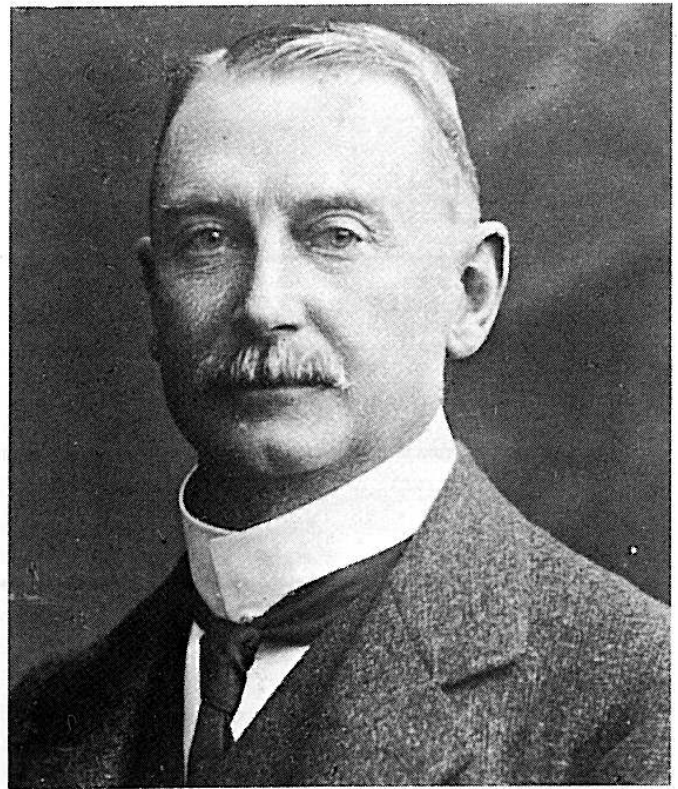
### Yellowwood Family Podocarpaceae

- Yellowwood sundry *Podocarpus* sp. (2)
- Outeniqua Yellowwood *Podocarpus falcatus* (25/ 27)  
(= *Afrocarpus*; = *gracilior*)
- Henkel's Yellowwood *Podocarpus henkelii*
- Real Yellowwood *Podocarpus latifolius* (24/ 22) **R**

### Other Families

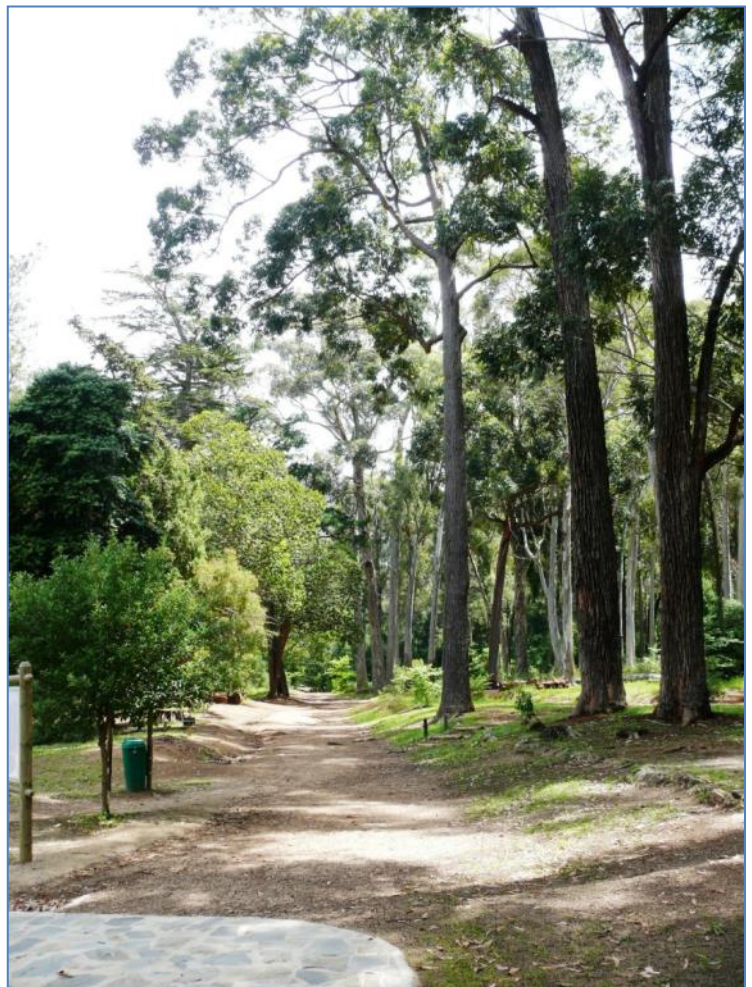
- Tree of Heaven *Ailanthus altissima* (3) **R** [Tree of Heaven]
- White Pear *Apodytes dimidiata* (2) [White Pear]
- Argan *Argania spinosa* [Milkwood]
- Wild Pomegranate *Burchellia bubalina* (2) [Coffee]
- Rock Alder *Canthium mundianum* **R** [Onionwood]
- Western Catalpa *Catalpa speciosa* [Trumpet Vine]
- New South Wales Christmas Bush  
*Ceratopetalum gummiferum* (4) [Wild Alder]
- Camphor *Cinnamomum camphora* (= ? *Camphora*)  
(5) 1886 **R** [Avocado]
- Assegaai *Curtisia dentata* (12) **R** [Dogwood]
- Russian Silverberry *Elaeagnus angustifolia* [Silverberry]
- Kamassi *Gonioma kamassi* (4) [Oleander]
- Cape Holly *Ilex mitis* **R** [Holly]
- Beauty Bush *Kolkwitzia amabilis* [Honeysuckle]
- Sweet Gum *Liquidambar styraciflua* [Witch Hazel]
- Coldbark *Ochna Ochna arborea* (2) [Boxwood]
- Stinkwood *Ocotea bullata* **R** [Bay]
- Screw Pine sundry *Pandanus* sp [Screw Pine]
- Australian Cheesewood *Pittosporum undulatum* **R** [Cheesewood]
- Sneezewood *Ptaeroxylon obliquum* (12) [Sneezewood]
- Epaulette Tree *Pterostyrax hispidus* [Styrax]
- Cape Beech *Rapanea melanophloeos* **R** [Myrsine]
- Unknown ? *Belotina* sp **R** 1886 [?]

Source: Chris Botes



Joseph Storr Lister (1852-1927), Chief Conservator of Forests for the Cape Colony (1906-10) and Union of South Africa (1910-13).

The Arboretum, with 300 tree species, is an excellent place to get to know the World's commercial trees. Most of the trees are about 120 years old.





APRIL 25, 1933

CAPE TIMES, TUESDAY

## VAIN FIGHT FOR EXISTENCE

THE PENINSULA'S EXILED TRIBE OF BABOONS

## DOOM OF ULTIMATE EXTINCTION

STORY OF ITS DEPOSED LEADER

## GORY COMBATS WITH "MR. BLIKKIE"

(By Our Special Representative)

Hidden away in the dense plantations at Tokai are well-preserved relics of forests that spread along the Peninsula mountain slopes long before the days of van Riebeeck.

These small patches of indigenous forests, which have miraculously escaped destruction by fire or the axe, lie along the course of Prince Kasteel's stream—the frequent resting place at night of the lost tribe of baboons which roam the Chapman's Peak mountains.

During my investigation of the Tokai fire-fighting service I walked through these old-world trees. It was a strange comparison, the towering pines and these indigenous relics of another age.

### SOLE SURVIVORS

I first saw these links in the chain of past history while walking along a contour path, after passing through an experimental plantation where the scientific side of forest research was explained to me.

There was something weird about this small patch of indigenous forest. I scented some secret of the past, and it was then that my guide told me of the lost tribe of baboons who, cut off from the mainland by the gradual growth of civilisation, now roam the lonely solitudes of the Peninsula mountains.

Years ago baboons and Bushmen were the sole inhabitants of these forest regions. To-day the Bushmen have disappeared and the "lost tribe" are the sole survivors of the baboons.



### RAIDS ON SIMON'S TOWN

Although seldom seen by passing motorists, some of these baboons have visited Simon's Town periodically since the opening of the Cape Point road more than eight years ago. They raid Simon's Town in search of food and water, and several years ago even scaled the wall of the Naval Dockyard.

The lost tribe has divided into several troops, one of which has appropriated a steep precipice in a lonely area beyond Smitswinkel Bay.

The area between False Bay and the Atlantic Ocean is not extensively frequented by mountaineers and walkers, and only motor-cars on the marine drives during the week-ends interfere with the baboons' privacy.

Troop wars are not frequent among the lost tribe. If one occurs it is usually because one troop disputes the claim of another to a kranz or selected sleeping ground. The battles are more of a "cat and dog" nature and are seldom deadly.

Then my guide told me of the three-legged baboon that has been banished from the tribe. It is said that he is about 50 years old and that one of his legs was shot off by a farmer many years ago.

### ATTACKED RANGER'S DAUGHTER

Once he was the leader of the tribe but with old age he lost his teeth and is now a lonely roamer of the mountain. Recently he attacked the young daughter of the municipal ranger stationed on the top of the Muizenberg Mountains.

Only the prompt action of the mother in pulling the child indoors saved it from being carried away. The baboon attacked the child at the front door of the cottage but the mother saw what was happening through a window.

She quickly opened the door, pulled the child inside and locked the entrance. The baboon snorted round the house for a little while and then ambled away towards the fowl run. Fortunately, the ranger arrived before any damage had been done.

The old baboon's banishment is said to have been due to the fact that he had grown old, had lost the leadership of his troop and the companionship of his mate.

At one time his worst enemy was "Mr. Blikkie," an Alsatian wolf-hound which belongs to one of the foresters at Tokai. Often, I was told, the dog would disappear up the mountain slopes alone and returned hours later more or less badly wounded.

The dog was a great hunter of baboons and it is thought that he hunted the three-legged baboon in the mountain solitudes, where the ecologists took place.

But the baboons will no longer be troubled by "Mr. Blikkie." Recently he was run over by a motor-car and to-day he is an invalid.

The baboons are a lost tribe and will never join the troops on the mainland. The growth of civilisation has cut off their only escape—across the Cape Flats to the Drakenstein Mountains.

With the development of the Peninsula they are doomed to extermination.

(Continued in next column.)

The process may take two centuries, but their end is inevitable.

Although it is impossible to obtain any accurate details it is estimated that the tribe has been isolated from the other South African tribes for more than 50 years.

Their customs and "laws" are similar in several respects to those of the Bushmen. In the Kalahari Desert in recent years there have been cases of Bushmen committing murder because another tribe attempted to appropriate their stronghold.

As I walked through the last home of the lost tribe I could not overcome a feeling of sympathy for the baboons. They are fighting for existence against the greatest odds in the world—modern science and civilisation.

## Alien invasions Early Detection & Rapid Response Programme

Managing invasive plant species costs South Africa millions of Rand every year, to protect biodiversity and ecosystem functions (such as water and fire). Preventing invasions at the start is the most intelligent solution. This involves detecting emerging plant species at an early stage and removing them before they become established.

The South African National Biodiversity Institute and City of Cape Town are setting up a network of "spotters" and "experts". Spotters will map target and potential species. Unknown species will be sent to the experts for identification. A Rapid Response team will remove the incipient invasions.

The Friends of Tokai Park Species Survey Team will be mapping alien species (in addition to indigenous plants) at Tokai and will take part in this programme. If you want to participate, please contact the convenors.

Two species have suddenly emerged over the last three years as major new invaders in Cape Town, that have not yet got to Tokai and should be kept out. These are:

**Red Valerian** *Centranthus ruber* (also, Kiss-Me-Over-The-Garden-Gate, Jupiters Beard)

The spread of this species is really alarming. A weed of disturbed areas in alpine Mediterranean areas, this species has decided that it likes Cape Town. It is especially happy on Cape Granite-derived soils. Its spread along the M3 and Rhodes Drive since 2008 can only be described as phenomenal. It has already spread below Tafelberg Road, and has got in Cecilia at Constantia Neck.

It is identified by its large sprays of pink, white, red and occasionally purple, fragrant flowers. The hairless leaves are strongly toothed at the base, opposite and decumbent, becoming heart-shaped below the flowerheads.

It has seeds with a furry umbrella, allowing them to spread by wind and traffic. It coppices from the base readily and any parts of the stem left behind will form a new plant. It forms dense stands smothering any indigenous plants and is marketed in the United States as a "fire retardant" for gardens, a practice that cannot be allowed in Fynbos, which needs fire.

### Three-angle Garlic *Allium triquetrum*

This species was recorded for the first time in Cape Town in 2008, from a few sites around Kirstenbosch and the Alphen Centre. In 2010 it was recorded at Kloof Neck, Die Hel and Die Oog. At this rate it will have spread throughout the Peninsula by 2012.

It forms dense stands of thousands of plants during spring, going dormant in summer. Although it is not known from any natural areas yet, it forms monospecific stands in the public open spaces in which it occurs.

The plants can be recognized by their strong garlic smell, the typical garlic umbels of white flowers, and most of all by the three-angled stems below the flowers. The leaves are basal, with the flowering stems up to 400mm long. The bulbs are superficial and appear very easy to uproot. This is a prolific seeder. However, the seeds cannot explain how it has spread so rapidly and far. It must be being helped by people taken in by the stunning displays. Several road verges have been planted with this species. The Die Oog population seems to have arisen in garden refuse dumped in public open space.

We desperately need to ensure that these species do not get into Tokai. Please report any of these plants at Tokai to Tony at [t.rebelo@sanbi.org.za](mailto:t.rebelo@sanbi.org.za)



## FOTP Task Teams

*The following sub-committees or task teams have been constituted or are envisaged. If you want to participate or help convene a team, please contact the convenor.*

### Alien hacking

This is the heavy group using chainsaws, poisons and tackling the larger aliens and dense infestations. They will largely augment the Working for Water teams that annually work through the park, specifically tackling those areas where W4W are not succeeding in.

*Convenor:* Jay Cowen

### Alien pulling

This is the light version of the alien hacking, and involves mainly hand pulling seedlings and lighter work such as lopping and stump treating odd plants. It will also involve poisoning the persistent gum coppice. It is largely focussed on the restoration areas.

*Convenors:* Tony Rebelo; Jenny Mountain; James Forsyth

### Arboretum maintenance and development

This deals with all matters in the Tokai Arboretum. What is required here is path and sign maintenance, planting new holdings and removing dead plants, and keeping the area neat. We also need the species lists and maps updated.

*Convenor:* Sharon Bosma

### Baboons

Baboons are a sensitive issue. We would like to know where the baboons are moving seasonally, what they are doing, and what "opportunities" are leading them astray. The group is working closely with researchers, baboon monitors and other groups working with the baboons.

*Convenor:* Sue Oosthuizen

### Development Issues

The area around Tokai is rapidly being built up. This affects not only the ambience of the park, but also its animals and ecosystems. This group assesses development proposals in the context of the natural and heritage environment of Tokai.

*Convenor:* Tony Rebelo

### Events

The events task team organizes events in the area. Venues at our disposal are the Arboretum Tea Room and surrounds, the Chrysalis Academy Hall, the Cape Research Centre Lecture Hall, the various picnic sites and the entire Tokai area. Events are to raise funds and entertain and inform the public.

*Convenor:* (Vacant)

### Fund raising and special projects

This is largely a fund-raising group, managing the finances for special projects and seeking funding for priority projects.

*Convenors:* Tony Rebelo; James Forsyth

### Fynbos restoration and maintenance

Tokai is the most valuable conservation area in the entire Table Mountain National Park. Two extinct species have already been planted here and many other species threatened with extinction. Fires need to be managed and plantings are done in collaboration with the Kirstenbosch Botanical Gardens plant rescue team. We also maintain paths in the areas, making sure that walkers stick to the official paths and don't follow baboon, porcupine and caracal paths.

*Convenors:* Anthony Hitchcock; Tony Rebelo; David Merrington

### Heritage

Tokai has many areas of heritage value. It is important to consider these holistically as part of the Tokai package. Thus the Manor House, the Porter Estate, the Oak avenue, the Arboretum and the "elephants eye" are all features of the Tokai experience. We need people to identify problems and proactively address them. Never again must any of the heritage at Tokai fall into the state of the Manor House in the late 2000s

*Convenors:* Alan Mountain; Bertha van Rooyen

### Newsletter and publications

Apart from the publication of this newsletter, other publications include brochures, maps and field guides, in addition to maintaining information in the notice boards.

*Convenors:* Tony Rebelo; Lynn Gardiner, James Forsyth

### Nursery

The nursery will provide plants for the shade walks and the arboretum, as well as other portions of the TMNP. Focus will be on plants for the Arboretum and local species and genotypes for neighbours wanting to plant local indigenous plants.

*Convenor:* David Merrington

### Path, road, fencing and signage maintenance

This is ongoing and vandals and graffitiists keep the group very busy.

*Convenors:* James Forsyth; Tony Rebelo

### Picnic Area maintenance and education

With the upgrade of the picnic area and its slight relocation, there is a need for people to help in the area. These include making sure that baboon-proof structures remain so – by innovative ideas to stay ahead of the baboons, that vandalism is repaired timeously, and most important to provide material to educate and enlighten visitors about the Tokai Park, TMNP, the City's biodiversity and the uniqueness and state of the Cape Floral Kingdom.

*Convenor:* (Vacant)

### Pine plantation maintenance

The pines will not all be removed, and harvesting of existing commercial blocks, will cease in 2021. Within these paths need to be maintained and facilities maintained.

*Convenor:* Sylvia Brass

### Species surveys and photographs

With over 600 species in the Sand Fynbos section alone, there is a lot of inventorying and documentation of species to be done. Many plant species can only be identified in young veld, so keen people are encouraged to submit their lists of species seen. We are also keen to document the recolonization of Fynbos birds and animals in the restored areas. These will be recorded in newsletters as sightings.

*Convenors:* Chris Walker; Stuart Hall; Rachel Botes, Tony Rebelo

### TMNP Visitor Assistance

This is the day to day running of the park, and deals with administrative issues, gates, patrolling, and other issues. This is handled directly by the reserve manager.

*Convenor:* (Vacant)

### Wetlands maintenance

There are several important wetlands in the park: the Soetvlei, Prinskasteel, Semple, Stone Church, as well as the Prinskasteel River and canal. These need special attention regarding siltation, eutrophication (leading to domination by Bullrush) and aliens.

*Convenors:* James Forsyth; Jenny Mountain; Jan Mol

## Reports from Task Teams

*The following task teams have submitted proposals and work plans so far.*

### Alien hacking

*Convenor:* Jay Cowen

We will alternate sites, with the first target being the old plantation area in the neck between Constantiaberg and Vlakkenberg, where we will tackle small to medium (up to 3 m tall) pines and Blackwood. No chainsaw work is required. The Blackwood will involve the use of herbicides, so if you are worried about that, this work is not for you! On the alternate day we will tackle the Australian Cheesewood in the Arboretum. This will also require herbicide treatment. Hackers should always wear old gardening kit, preferably long trousers and stout footwear; gloves are essential. I have loppers and saws for 6 people.

We will meet the first Tuesday afternoon of each month beginning on Tuesday 7 December. Hackers should meet at the Arboretum parking area at 14h15 sharp. We will drive from there in one or two vehicles up to the hack sites. Intended return time to the car park is approximately 17h30. Please confirm attendance with Jay at [jay@bechet.co.za](mailto:jay@bechet.co.za), or 021 715 2074, for logistics.

- Tuesday 07 December 14h15. Vlakkenberg Neck. Meet at Arboretum.
- Tuesday 04 January 14h15. Arboretum. Meet at Arboretum.
- Tuesday 01 February 14h15. Vlakkenberg Neck. Meet at Arboretum.

### Alien pulling

*Convenors:* Tony Rebelo; Jenny Mountain; James Forsyth  
Alien pulling will be done during the week and on weekends. All the burned areas need urgent attention: it is estimated that 1000 man hours will be required by autumn to clear the aliens. Consequently we will only tackle the easy species and less dense areas, leaving the balance for Working for Water, who unfortunately will have to spray herbicide killing off any restoration in the area. We would thus like these areas to be as few and as small as possible.

Weekdays: Every first and third Thursday of the month at 14h00 for 2 hours. Please bring your tea. Meet at the Main Gate. Contact Jenny at 021 794 7129.

Weekends: third Saturday of the month at 15h00 for two hours. Meet at the Main Gate. Contact Tony at 021 7127 816.

### Fynbos restoration and maintenance

*Convenors:* Anthony Hitchcock; Tony Rebelo; David Merrington

Restoration is a winter activity. Until we start planting in July (the soil is too dry at the beginning of winter – suitable for germination but not for planting), there is little for the working group to do. However, if you are interested in helping prepare the area for the autumn burn, please watch for the next newsletter. The following are currently planned:

- Saturday 22 January, 09h00. A tour showing the restored areas and plants at Tokai. Meet at the Main Gate.
- Saturday 04 December, 09h00 A tour of the Kirstenbosch Nursery and restoration plants and threatened plant stock beds at Kirstenbosch. Meet at the Kirstenbosch Upper Gate.
- There is limited space on trips to assist Kirstenbosch to collect and rescue plants, and to help propagate cuttings and seeds of plants collected. Contact Anthony or Julia Dabush at 021 799 8899.
- Collecting seed of overstorey species. This will be done during the last week of January (24-28). Contact Tony [t.rebelo@sanbi.org.za](mailto:t.rebelo@sanbi.org.za) to volunteer and obtain e-mails closer to the time: please specify which date would suit you best.

### Path, road, fencing and signage maintenance

*Convenors:* James Forsyth; Tony Rebelo

Not much routine maintenance is required at present. The major problem is vandals defacing signs, mainly by peeling the plastic sign off the metal backing. These will be replaced shortly. Please stay on demarcated paths.

Following the Autumn burn of the cleared areas, and before the restoration of the Fynbos, paths will be realigned as the new fire belts are positioned. Help will then be required with demarcating and tidying up the paths.

The "Mound" is a useful viewpoint in the area. It has been suggested to maintain it as a security lookout, and central hub for the area. The signboards will be moved to the plantations alongside. If you have information for the signboards, please contact the conveners.

During the last two Christmas holiday periods IKAPA Honorary Rangers have undertaken patrols in Tokai for visitor safety. These patrols can be combined with other activities, such as limited alien pulling, species surveys and path maintenance, or simply walking your dog. Unfortunately, the convenor will be away for a period over Xmas and volunteers are sought. Various time slots are available. If you wish to help out, please contact Tony at [t.rebelo@sanbi.org.za](mailto:t.rebelo@sanbi.org.za). Duties involve keeping your eyes and ears open while walking, making ones presence known to visitors, education of visitors, and having a cell phone ready.

All walkers at Tokai should know the **TMNP emergency number: 086 110 6417**. Do not use it for complaints.

### Species surveys and photographs

*Convenors:* Chris Walker; Stuart Hall; Rachel Botes, Tony Rebelo

Informal species surveys are underway. If you want to be involved please contact Chris at 021 712 7469.

Anyone can report any interesting observations. Please record your name, date, (time for large mammals), the species seen, and the locality as per the map "Naming of plantation areas at Tokai" in this issue. Alternatively, you may provide coordinates, either via your GPS, or obtained from your home computer using GoogleEarth. Please periodically send these to Tony at [t.rebelo@sanbi.org.za](mailto:t.rebelo@sanbi.org.za). These may be recorded under sightings in the newsletter.

It is hoped that by mid 2011 we will have a site to record such data on the worldwide web.

Walks in the restoration areas are planned for autumn and spring. Meets to get to know certain plant groups are also anticipated. More details in future newsletters.

### Wetlands maintenance

*Convenors:* James Forsyth; Jenny Mountain; Jan Mol

The Wetlands subcommittee had a walk around the Wetlands at Tokai in November and were astounded at their diversity and abundance. They are still formulating a strategy and will be organizing activities, including a tour of the wetlands for friends in autumn. The wetlands are also a special focus of the Restoration Subcommittee. On 31 October, participants on an IKAPA course on Aliens spent a few hours pulling Wattles and Stinkbean in the Prinskasteel Wetland.

### Events

*We don't have an events convenor and so will not be undertaking any special events at this time. (Please look out in the newspaper for regular events like Firefly Walks and Christmas Carols. We will organize special activities like these when we have volunteers to do so.)*

## Flowers of the month: October

Chris Walker

Man is it sad to see the shade giving pines disappearing but the Phoenix is rising. A wonderland of indigenous plants is emerging in the ashes from the burnt pines.

This month I have chosen *Otholobium virgatum* and *Passerina corymbosa* as the flowers of the month. *Skaapbostee* is a creeping shrublet not easily noticed, but a wonder to behold if viewed through a magnifying glass. Gannabush is no less wonderful and so common that at one time it was called "*vulgaris*." It is wind-pollinated and most noticeable when shedding pollen because brushing against the plant leaves you covered with bright yellow pollen.

Fynbos is not named as such for nothing. The old Dutch name "fijn" means small or fine and to appreciate the Fynbos wonderland one must carry a magnifying glass at all times especially if your eyes are tiring as mine are.



**Otholobium virgatum**  
**Skaapbostee**

**Scientific name:** *Otholobium virgatum*

**Old names:** *Otholobium decumbens*

**Common name:** *Skaapbostee*

**Family:** Pea (Fabaceae)

**Flower colour:** Blue, mauve-purple, pink.

**Flower description:** Flowers in threes in leaf axils, crowded towards branchlet ends, short-stalked. Calyx veined, 4-5 mm long, softly hairy, glandular, 2 upper lobes partly united. Petals pale pink to mauve-purple, keel purple-tipped. Standard 8 mm long, longer than the purple-tipped keel. Stamens monadelphous (united by their filaments).

**Flowering:** September to November.

**Plant description:** Trailing, hairy, resprouting, matted shrublet, with many slender trailing woody stems, branchlets upright, younger parts white-hairy.

**Leaf description:** Pinnately trifoliate, sparsely hairy, leaflets inversely egg- or heart-shaped, 6-10 mm long, longer than the petioles, the medial largest, stipules small, tapering to an extended point, marginally hairy.

**Range:** On dry sandstone flats, marshes in Fynbos from Saldanha to Eastern Cape. Most noticeable in young veld.

**Scientific name:** *Passerina corymbosa*

**Old names:** *Passerina vulgaris*

**Common name:** *Sandgonnabos*, *Gonnabos*, Gannabush.

**Family:** Stringbark (Thymelaeaceae)

**Flower colour:** Varies from yellow to dull red.

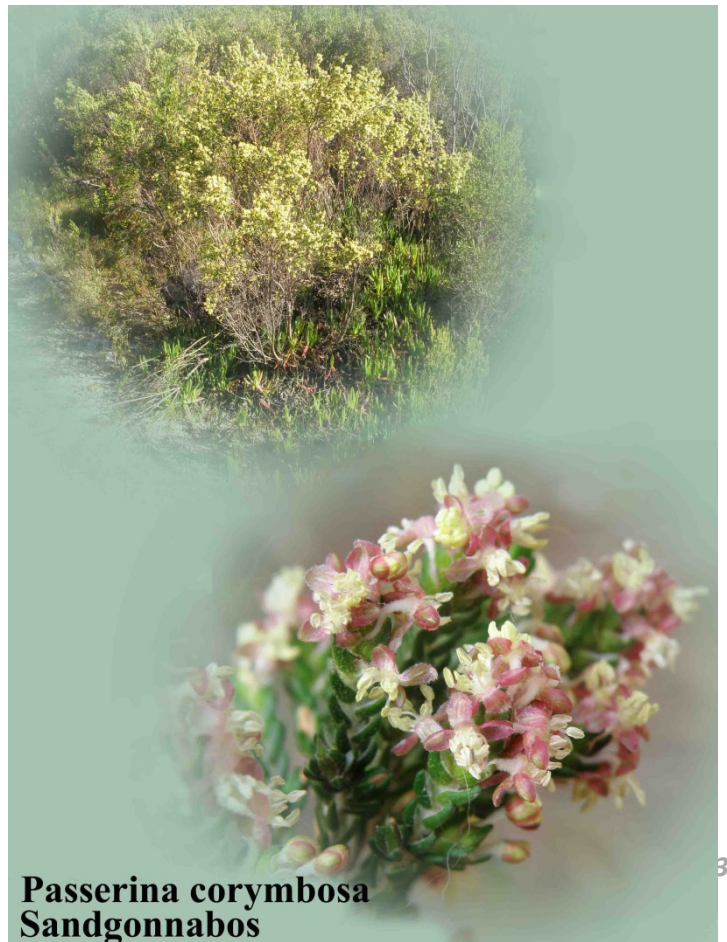
**Flower description:** Bracts ovate-acuminate (tapering to a point), leathery, with a leaf-like tip and 3-6 longitudinal ribs on each side. Flowers minute, many in a terminal oval spike. Calyx reddish or yellow, lobes a little shorter than the tube; tube circumscissile, the base persistent. Petals absent, stamens 8, exserted.

**Flowering:** October to November.

**Plant description:** A common ericoid-like shrub or small tree to 3 m. The thin young stems are white, pubescent, and this is a distinguishing feature.

**Leaf description:** Opposite, linear, occasionally adpressed, more often spreading, mostly strongly rolled down, 3-10 mm long, with a hairy groove beneath.

**Range:** Sandy flats and slopes from Tulbagh to Eastern Cape. Becoming prominent and dominant in older veld.



**Passerina corymbosa**  
**Sandgonnabos**

**NATIONAL ASSEMBLY WRITTEN REPLY QUESTIONS**  
**TUESDAY 13 AUGUST 2010 [IQP No 21 -2010]**  
**SECOND SESSION, FOURTH PARLIAMENT**

Question 2139 for written reply: National Assembly, Mrs S V Kalyan (DA) to ask the Minister of Agriculture, Forestry and Fisheries (NW2579E):

***(Q) What plan governs the removal of trees from the Tokai and Cecilia plantations and who was responsible for drawing it up?***

The harvesting of the pine plantations at Tokai and Cecilia is governed by the 20-year lease signed by the (then) Minister of Water Affairs and Forestry and the forestry company, MTO Forestry, a private company which won the public tender to purchase and harvest the plantation trees. The lease was assigned by the Minister to SANParks to manage. The assignment provides for the land to be de-proclaimed as State Forest and proclaimed as National Park.

***(Q) Whether her department will revisit the decision to end commercial forestry at these locations; if not, why not; if so, what are the relevant details?***

This is not possible as legal commitments are in place. Nor is it considered desirable to do so – a thorough, Cabinet-endorsed process was followed that led to the decision to end commercial forestry at these locations, and assign the land to SANParks.

***(Q) What funding is available under the current plan for the rehabilitation of the land to Fynbos and what is the expected cost per hectare for rehabilitation?***

The lease agreement entered into with MTO and ceded to SANParks provides for the rehabilitation fee to be made available by per hectare felled. In terms of the lease MTO pays SANParks R35000 per ha, which is escalated every year by 50% of CPI and PPI figures published annually by Stats South Africa.

*<Note this figure is incorrect: the correct value is R3500 per ha>*

Question 2140 for written reply: National Assembly, Mrs S V Kalyan (DA) to ask the Minister of Agriculture, Forestry and Fisheries (NW2580E):

***(Q) What was the process followed that led to the decision to end commercial forestry at Tokai and Cecilia plantations?***

During 1999 Cabinet took a decision to exit commercial forestry in some parts of the country including Tokai and Cecilia plantations, which were later assigned to SANParks for management. Subsequent to the assignment of the land, SANParks developed a Management Framework for Tokai and Cecilia, which was open for public consultation.

***(Q) What were the principal reasons for the decision?***

The rationale was to enhance biodiversity by converting Tokai & Cecilia back into natural vegetation and integrate it into the Table Mountain National Park to allow for the return of the critically endangered species within the Fynbos biome.

In terms of the transfer agreement, SANPARKS would continue to accommodate commercial forestry activities for the duration of lease agreement entered into by government and MTO Forestry Pty Limited. The agreement also required SANParks to manage the plantations on a multiple use and sustainable basis within a broader conservation framework. They also have committed to preparing a publicly accepted plan, which will strive to find a balance between conservation, timber production for the duration of the lease, outdoor recreation and the cultural landscape values. The purpose of the agreement was to achieve a balance between the

interests of the Cape Town community and the important conservation objectives.

***(Q) Whether any consultations were held with interested and affected parties before and after the decision to clear-fell the trees was taken; if not, why not; if so, what are the relevant details?***

SANParks concluded a public consultation process by the end of December 2006 in terms of which they wanted to obtain the public's input on the development of a Management Framework for the Table Mountain National Park. During the course of these consultations the public voiced their opposition against the removal of the Tokai and Cecilia Plantations – a concern that was expected. SANParks revised their management framework and after more public consultations published the final Framework in May 2009 which will ensure integrated management of the area.

**COMMONLY ASKED QUESTIONS TO TMNP**

**What is the difference between a “plantation” and a “forest”? Why was Tokai called a “forest” when there were no trees? Are there any real forests at Tokai?**

Plantations are trees grown as a crop. They are usually in ordered rows of an even age and a single species, as this considerably aids management and economy. Although the term forest is loosely applied to include plantations, a forest is strictly a natural community, usually with many species of trees of different ages, sizes, and layers and with creepers and an understorey of non-tree species.

Tokai is strictly not “Tokai Forest”, but “Tokai Forest Reserve,” and the name applies to the land, not the plantations themselves. “Forest reserves” were areas set aside during the 1890s for establishing plantations, but many were unsuitable and were used for conservation instead. “Reserve” is not in the sense of a “nature reserve” as we use it today, but instead, the exact opposite, in the sense of “retained for future use.”

Yes, there are natural forests at Tokai, but they are not many and not extensive, and largely confined to the kloofs on the sandstone. This is because forests only occur in fire-safe habitats, and Tokai does not have much natural fire protection. Three such patches exist, all on Constantiaberg slopes towards Vlakkenberg: they are big enough though to have considerable diversity of both plants and animals (and aliens), but are insignificant in numbers compared to Fynbos.



The three natural forest patches at Tokai, in blue, from north to south are:

- Donkerbos;
- Studembos (also Boekenhoutbos); &
- Slamsebos.

## Why must the trees go: can some not be left in Fynbos?

The area of Critically Endangered Cape Flats Sand Fynbos will be managed as an ecosystem. As such, ecosystem processes must be maintained to allow indigenous species to grow and thrive. Fynbos, and Fynbos ecology, is characterized by an absence of trees.

But why can the odd tree not be left for shade and birds? The reason why trees cannot be left is because of the shade and birds! In an ecosystem without trees there is a good reason why trees are absent: it is not as if Fynbos "forgot" to develop trees. Trees burn, and on the nutrient-poor, sandy soils cannot grow big enough to survive a fire. So each tree will require a 15 m fire belt around it: each tree will need a band of destroyed Fynbos that will reduce the area of Fynbos.

But trees also have other deleterious effects. Even assuming that one chooses a species that will not produce seedlings to invade the Fynbos or put out coppice from its roots. The effects of shade are most obvious, and many Fynbos plants are particularly susceptible to shade. It is in winter that the effect is worse – when many Fynbos plants are growing or flowering. The effects of shade are mainly on the south side of the trees at Tokai, so this will not apply to trees on the southern boundary.

In addition, many plants – especially gums – produce chemicals that inhibit growth and germination of other species, creating a sterile area around them. They also use water and take up nutrients far more than indigenous plants, especially given their height and their fire protection, which results in a 50-year old, 20 m high tree competing with 2 mm-high Fynbos seedlings for water, sunlight and nutrients. Hardly conducive to a natural and sustainable Fynbos ecosystem! In addition, there are the effects of the symbionts: almost all trees have mycorrhizal fungi that obtain nutrients for them. These interact with the fungi of the indigenous plants, usually to their detriment. Good scientific data are not available, but the "reach" of a tree is about equal to its height. Thus a 15m high tree will affect a 15m radius around the stem.

And then there are the higher trophic effects. By providing perching and nesting for sit and wait raptors,, one introduces another novel element into the ecosystem. Consequently, birds, mammals and insects experience an "unnatural" predation not experienced normally in Fynbos ecosystems. In Fynbos (and grasslands and karoo) predators must either hunt from the ground or bush, or fly: Fynbos animals are adapted to these predators. However, sit and wait predators are not natural in these ecosystems, at least not from a prominent perch. Alien trees 5-15 m high provide a huge advantage to predators over their prey. A flying predator is easily seen (and one that keeps low cannot see far), but one perched high up against a tree has a head start on any poor Fynbos animal. A tree 10m high in Fynbos of 2 m high gives predators domain over hundreds of square metres, whereas without such a perch there is not even a niche for such a strategy. Fynbos animals have no chance against such pressure: this is probably the reason why in gardens Fynbos birds (Sugarbirds and Orange-breast Sunbirds) are replaced by Thicket birds (Malachite and Southern Double-collar Sunbirds), even those with lots of proteas and ericas. I have watched the Fiery-neck Nightjars flushed by dogs being immediately set upon by Black Sparrowhawks that were not apparent moments before: removing the trees will greatly increase the survival rate of birds in neighbouring Fynbos. It is essential thus that treed windbreaks around Fynbos areas should not be allowed, and similarly, tree-shaded walks in Fynbos are not ecologically acceptable. Where trees are required (for instance, peripheral shaded walks) they should be the minimum height capable of meeting their shade requirements.

## Are plantations not better for the environment than Fynbos? Why are people so hung-up about Fynbos?

Some ridiculous claims have been made for "forests" that are simply untrue. It is no accident that Fynbos evolved over millions of years in the Cape: it is the ideal all-round vegetation for the climate and soils of the region. Other plants may outperform Fynbos species in some feature, but always at some other cost. What are the claims made? For instance, "Coolforests" claims:

- ***Trees make rain!***
- ***Trees do not use water!***

This may be true in the Amazon, but is certainly not true in the Cape. Transpiration from plants in our hot dry summers has an undetectable effect on the climate: there is just not enough water in the soil to humidify the atmosphere by pumping it out through trees. Fynbos plants produce the best compromise between growth, fire and water-use. Larger plants will use more water: water which we need for the city. Plantations are thus in direct competition with humans for water: Fynbos is the optimal vegetation for yielding water.

Experiments with concreting catchments have also shown that plants catch significant water from the air. Larger plants do catch more mist from the southeasters at high altitudes, but the water balance is offset by their higher water use. Restios and ericas are the ideal "mist catchers": a very high area of small leaves, on plants that go dormant in summer and thus use very little water! In fact, Restios catch as much water from mist as falls as rainfall: thus Restios double the effective rainfall in our mountains – and unlike trees do not use any of it in summer when they go dormant!

- ***Trees prevent erosion!***

This is true of natural forests, which in the Fynbos Biome are confined to fire-proof kloofs and landscapes. It is not true for plantations, which have bare soils. Heavy rains wash away large quantities of soil from plantations, especially plantations that are regularly walked under. Fynbos, with lots of plants holding the soil, prevents erosion far more effectively. Also after a fire, plantations are bare, but Fynbos has many resprouting species which anchor the soil until the reseeding species manage to grow up. These plants also ensure that the water enters the soil into the aquifer, rather than just washing over the bare soil and running off slope.

- ***Without pines Cape Town will become arid!***

On the contrary: with plantations Cape Town will become arid. Fynbos uses less water and catches more water and ensures that more water enters the soil into the underground aquifer. Thus while plantations dry up streams and increase flooding when the rain does fall, Fynbos is the best natural flood attenuation, reducing peak stream flows, and ensuring slow release of water over a protracted period: meaning we have more water in our streams in summer and thus we need fewer large dams to hold back water for summer when Cape Town's water supply is at its lowest.

- ***Trees sequester Carbon – stopping global warming!***

It is true that trees sequester carbon. However, there are two problems with not considering the whole picture – one must consider the entire ecosystem! Firstly, with our Mediterranean climates the vegetation will burn: it is not a question of if, but how often – even the best protection will not stop fires. At every fire, all the accumulated wood will be burned and returned to the atmosphere, making trees no better than Fynbos. More problematic though is that trees also warm the area beneath them by trapping heat. In our region, this heat warms the soil sufficiently so that soil processes result in more decomposition. Unfortunately, more carbon is lost by heating the soil than is captured in wood. Thus planting trees in the Fynbos Biome does not sequester carbon: it in fact liberates more and thus enhances global warming. If you want to sequester carbon, then Fynbos is your best bet in the region. There are many good reasons for planting trees in cities (but not our conservation areas), but

carbon sequestration is not one of them. If you want to use trees to sequester carbon, then the tropics is the area to do this, and I am willing to bet that the indigenous trees species there will be far better than pines and gums.

- ***Without trees the slopes of Table Mountain are bare!***
- ***Without trees global warming will make Table Mountain an arid wasteland!***

This is not true. How can one species of pine or gum in a plantation be equated with the 20-80 species of hundreds of Fynbos plants that occupy the space of a single tree? Our mountains are not bare they are clothed in glorious Fynbos!

- ***Only 1% of TM is plantations: all we are asking for is 1% to be kept under pines!***
- ***No one has heard of these rare Fynbos types! Why keep them?***

All Fynbos is not the same. The reason why the plantations are where they are is because the areas are different from the areas that were not planted. These different areas had different Fynbos: and that particular Fynbos type is critically endangered due to development. There is very little of these veld types left and every portion is critical for conservation. The plantations are the last places left on earth where we, Cape Town, South Africa and the world can conserve these plant and animal communities. For instance, 108 species of plant are threatened with extinction due to loss of the Fynbos which occurs at Tokai. One can plant pines anywhere else! It makes sense to ensure that if we keep any plantations they should be in areas that do not have threatened species and vegetation types. The plantations are in the worst possible 1% of the mountain!

### **Recreation and users**

#### **Why are dogs not allowed in the Arboretum and upper Tokai?**

Dogs are allowed only east of Orpen Road. Dogs are a problem around the picnic site, where some less-well controlled dogs interfere with picnickers, and may accidentally injure themselves by swallowing bones thrown away by littering picnickers. Unless, dog walkers pick up their doggy doos, dogs are incompatible with areas where children play, such as picnic areas and the Arboretum. The area above and west of Orpen Road is also heavily used by baboons which are very dangerous to dogs, and conflict and injuries are extremely likely. It is in everyone's interest to keep dogs and baboons apart. This is the last area of the Constantia Valley where baboons remain: they deserve priority.

Dog walking in TMNP is managed in terms of the "Walking with Dogs EMP," which is prepared with public participation and specifies which areas dogs may or may not be walked in.

#### **Where will we go? Plantations are one of the last safe places to walk and exercise your dogs.**

Together with 18 km of green belt in Constantia and hundreds of kilometres of Fynbos paths at Silvermine, Cecilia, Newlands, Devils Peak, Sandvlei, Sunrise beach, not to mention public open space, residents of the southern suburbs are more than spoiled for areas to walk their dogs. If shade is required, many portions of the Constantia Green Belt are currently being planted up for shade, and will be well shaded by the time the last plantations at Tokai are harvested in 2021. Shade for recreation will be available in Lower Tokai in shaded routes, existing plantation areas and the proposed "transition areas."

#### **Why must dogs be leashed? Dogs must be allowed to be walked with owner unleashed for maximum protection.**

In terms of the "Walking with Dogs EMP," dogs do not have to be leashed provided that they are under voice control. Where dogs cannot be controlled they must be leashed. Untrained dogs must be leashed. This is for the protection of other walkers, other users, and wildlife. Dog etiquette, as set out in the "Walking with Dogs EMP," should be followed.

#### **Why do you not provide poo bins in Lower Tokai?**

Levels of dog faeces are being monitored. At this stage it appears that the indigenous dung beetles – from the Fynbos areas – are coping with the dog "food." If levels get too high, then dog owners will be required to pick up their dog poo. Poo bins are being investigated in the interim for those considerate dog walkers who would like to do the correct thing.

#### **Won't cyclists and dogs walkers cause too much conflict on the 2 m-wide path in Lower Tokai?**

**Why the different zones? There is no reason to separate recreational users as no conflict exists.**

Opinion obviously differs with regard to this issue. Potential conflict must be managed and this is done in various ways in different areas. On the paths at Tokai it will be done by keeping cyclist speeds low with chicanes and crossings, and hikers and dogs having right of way. On the upper slopes where cyclists travel at high speeds, different groups are restricted to different areas to minimize accidents.

#### **Why are there so few paths – the perimeter pathway in Lower Tokai must be complemented with many link paths to provide for a larger variety of choices and for short cuts.**

This will be done. However, there is the need for "core areas" to allow animals and plants to survive for ecological reasons and this will dictate the number and placement of the paths. These will be implemented soon.

#### **Why has SANParks not provided an area for a BMX track in the forest?**

No, SANParks does not have to. A BMX track can be built anywhere on any land. It does not need to be and should not be built in a National Park. BMX users can negotiate with the City of Cape Town for a track at Muizenberg Beach or Blue Route or a myriad of other suitable places.

#### **Why can't Rastafarians use land in Lower Tokai for the cultivation of Buchu?**

Lots of people want land in lower Tokai for building houses, farms, hotels, cycle tracks and all sorts of things. Those with valid land claims are being addressed in suitable areas. Harvesting of resources from wild areas is not usually sustainable, and bulb populations on Tygerberg and Buchu populations in the Cape Mountains have been decimated. One option is a garden area on Porter Estate or the Ondertuine. However, should this not be dealt with as any other farming or nursery enterprise?

#### **Don't Fynbos walks pose risks e.g. ticks, snakes, bees, etc., that make it unsuitable for recreational purposes?**

Users should be walking on paths and not in the veld. None of these risks are absent from plantations, and provided that users stay on paths, these risks are not much elevated. These "pests" are part of the ecology of Fynbos, and part of the ecosystem with Cape Clawless Otters, Porcupines, Cape Foxes, and beautiful birds. You cannot have one without the other!

#### **Why do you not provide feeding stations up in the mountains to keep the baboons away from the urban areas?**

This will not work at all. Feeding the baboons will increase the baboon population making the problem worse. It will also increase their "free time" resulting in them exploring more and being more adventurous in human interactions. Furthermore, one feeding station will not be enough and not all baboons will stay at the feeding stations. Note well that the baboons probably require the Granite Fynbos to survive and hardly ever venture into the Sandstone Fynbos. The problem is not really the baboons, but the fact that humans have squeezed the baboons out with expansion of the vineyards, golf courses and housing estates.



The baboon problem has been made worse by naive neighbours who do not take adequate measures to protect their homes, gardens and refuse bins from baboons and create problem animals as a consequence. Living next to a national park has consequences over and above the increased desirability and market value of the property.

It would make far more sense to remove the trees and thus force baboons to roost in the cliffs. However, urban trees and the retention of trees in the Arboretum and picnic sites prevent this option.

The only way forward is to teach both the neighbours and baboons to live with each other.

### **Harvesting the plantations**

**After tree felling the barren area will be susceptible to erosion. What are you doing to stop erosion?**

This is not true: Pines are a major cause of erosion. By destroying the undergrowth and exposing bare soil, plantations greatly increase the rate of erosion. Fynbos is far superior at preventing erosion than pines, and based solely on the erosion issue, all pines and gums should be removed and replaced with Fynbos or Renosterveld to control erosion. Also, following fires, plantations are far more devastating in terms of erosion, leaving areas of destroyed soil that blows and washes away. Fynbos comprises many species, including both resprouters, that hold the soil together after a fire, and reseeders, that prevent surface (rill) erosion and thus maintain healthy soils and good water infiltration, thus also reducing the incidence of flooding.

**Why are they harvesting the gum trees – they are supposed to harvest only the pine trees?**

All the trees in the plantation were planted for commercial reasons and belong to MTO for harvesting. Some areas are excluded but these are often in the riverine strips which must be cleared as declared alien invasive species are not allowed in wetlands and river courses.

**When tree plantations are harvested, why not leave a row of trees next to the walkways and jeep tracks to provide shade for the summer days?**

Unfortunately, this does not work. If trees from plantations are left behind, they usually blow down – plantation species cannot cope with wind on their own. If trees are planted, they usually become stunted and wind pruned. Only in certain areas are they sheltered enough to grow into trees.

In addition, the Fynbos areas are being managed ecologically, which requires fire. Trees along paths are a major fire hazard and cannot be entertained within Fynbos. On the edges of the park, along peripheral paths, on the outside of the firebelt, this is possible and is planned.

**Why can't indigenous trees such as yellowwoods be planted to replace the pines and gums to provide shade for recreation?**

Tokai contains a national Critically Endangered veld type of international conservation significance. Trees are alien to Fynbos – there are none on Purcell's list of plants native to the area for instance, and can only be entertained where they do not impact Fynbos ecological processes. They will thus be confined to the shaded walkways on the edge of the Fynbos areas.

There is a misconception about the word "indigenous." It cannot be used without a statement of area. Thus there are no trees indigenous to lower Tokai, although there are several indigenous to the Cape Peninsula. Many laymen use "indigenous" to mean South African, but most such nationally "indigenous" species are as alien to Fynbos ecosystems as other aliens from Australia or South America. It does not really matter how far away aliens come from: their ecological impact is often the same!

**There was not enough consultation with stakeholders to obtain their input, why were we not consulted?**

**We were only consulted after large scale harvesting (without replanting) has started. We were not consulted before this has started – why not?**

**Why were the comments of I&A parties ignored?**

This was answered in the parliamentary questions (see above). Everyone was given many opportunities to participate, at various levels. Participation requires awareness and alertness! To claim ignorance or being unaware of the process is not valid. Friends of Tokai Park will communicate future developments with those who want to know. Those who cut themselves off from contact for various reasons will always remain ignorant and always complain. Tough: if you were really interested you would have found out through friends, interest groups and other means. The secret is to stay connected.

Comments were not ignored. Some comments were not practical, others inconsistent with the prime objective of the TMNP which is ecosystem conservation. Where the suggestions were practical or implementable they were incorporated into the management plans for the national park.

### **Fynbos restoration**

**Fynbos restoration in the higher parts of Tokai will be unsuccessful - will not regenerate without fire. Why are you trying to restore the Fynbos?**

**Fynbos will not recover sufficiently and in the long run these unsuccessful Fynbos areas will become idle and will be sold off to housing developers. Are there any guarantees that SANParks would not do this?**

Fynbos will not regenerate properly without fire. SANParks is tasked with conserving the World Heritage Site of Table Mountain and the Cape Peninsula and will thus maintain the natural fire regimes in these areas. But even so, without fire the Fynbos will (and is!) regenerating spectacularly. For instance, in block A3, Granite Fynbos which was restored without fire, over 150 Fynbos species are already documented.

The Fynbos restoration is successful, and TMNP is committed to ensuring that the ecosystems are restored. The threat of TMNP allowing squatters and developers to move in requires two actions. Firstly, we as residents must ensure that it never happens. As eyes and ears for Tokai Park, the friends must report any illegal activities immediately to the park manager. Action must be taken to remove illegal structures prior to these being occupied and lived in as a home.

Secondly, SANParks, and thus TMNP, is tasked nationally with protecting our threatened ecosystems and biodiversity. It is tasked internationally with protecting the Cape Peninsula – including Tokai Park - as a Natural Heritage Site. The legislation regarding national parks is the strictest and most secure legislation we have in the country for protecting our biodiversity. It is up to us to ensure that it remains so!

**How do you know that seed banks under the pines are still viable after 115 years of growing pines and gums? We were told that it would survive for only 100 years.**

The seed banks are not an off-on phenomenon. Seed banks decline with time and the three generations or three fire cycles is a rule of thumb. However, even though it is over 100 years it is still only three plantation cycles, so that helps. Also, early last century forest managers burned between plantings, allowing portions of the seed banks to be restored, so that in areas the seed banks are still quite intact, although more sensitive species will have been lost.

The bottom line is that, at Tokai, the Fynbos is returning spectacularly, so that the theory does not matter: the fact is it has returned and is successful.

**Why is the felling of the pines not phased out gradually while at the same time Fynbos is gradually phased in?**

This is not ecologically possible. Fynbos requires fire for optimal restoration, pines cannot survive in fire. Live pines and gums drop huge quantities of seed and thus seedlings into the Fynbos which outcompetes the Fynbos, preventing its recovery. In addition, most Fynbos species cannot cope with shade, and definitely cannot cope with the strong competition for space and water that tree roots exert: that is why there is no Fynbos under the plantations.

Also this is a crop. Harvesting the pines individually will damage the Fynbos continuously, killing plants every time the big machines move in and trees are dropped. It is also not economically sound: harvested trees damage standing trees as they fall resulting in wounds which result in boring insects moving into the trees, destroying the economic value of the wood. Also, it is just not economically viable to remove only portion of the trees – that is only possible for very valuable wood types.

**When will the pines be harvested? Are they all coming out now? Is there no place that we can walk?**

The scheduled dates of extraction are shown in the map below. No more harvesting is scheduled until 2018 east of Orpen Road.

Note that this schedule is provisional. Harvesting is determined by easy to determine factors such as planting dates and growth rates, and more volatile factors such as demand, supply and market value, and unpredictables such as fire, fire elsewhere (requiring equipment to be used or not used there), as well as drought, disease and other factors. Thus the dates are not hard. Nevertheless Tokains can look forward to at least 11 more years of plantations to walk in.

Due to come out soon are the east end of the picnic site (2010), and the area south of the Prinskasteel Wetland (2012). Whether these small blocks will be harvested in these years or not will depend to a large extent on harvesting in upper Tokai Park. On their own they are not economical to harvest.

**What will happen to the Spotted Eagle Owls and other birds?**

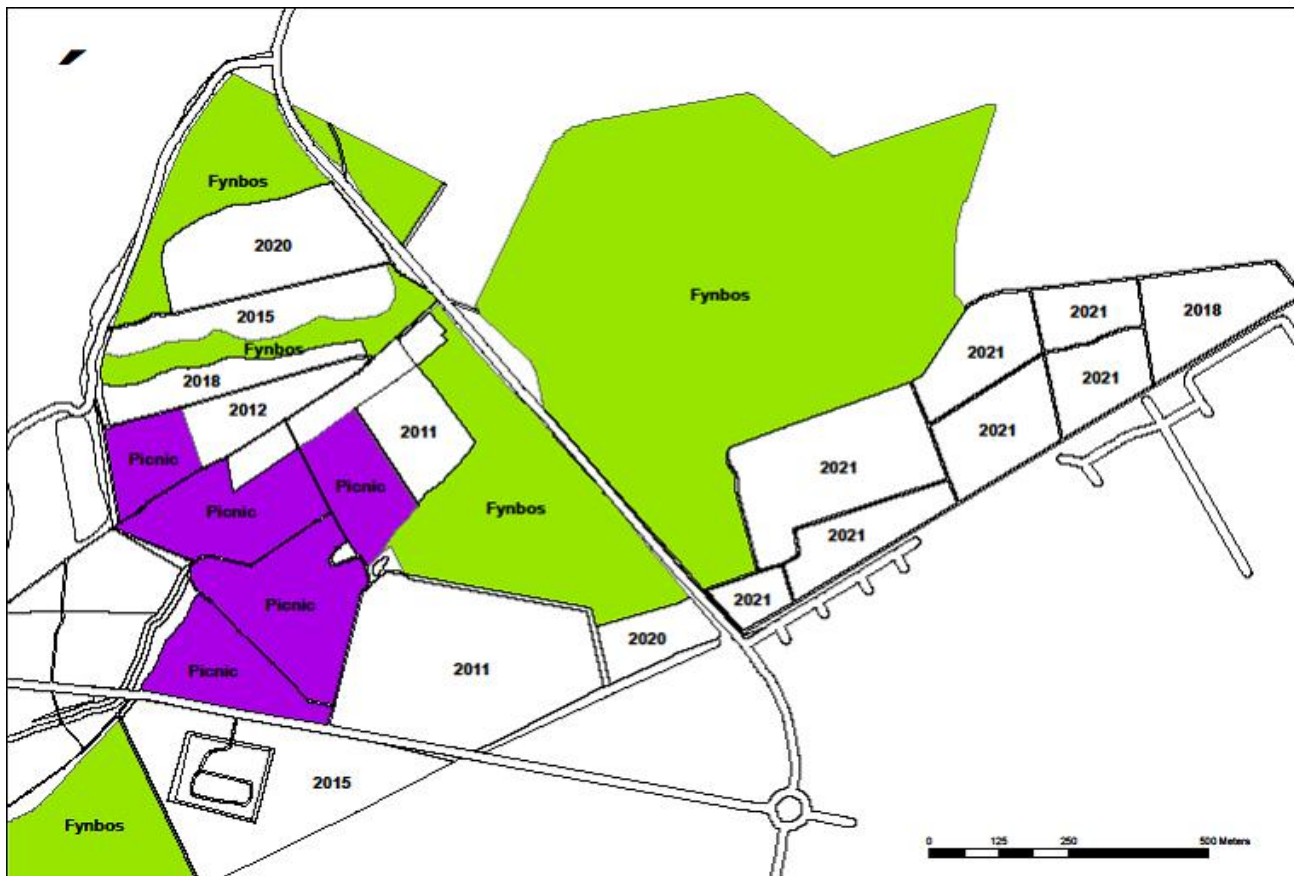
Although concern has been expressed about Eagle Owls losing their nest sites at Tokai, most Spotted Eagle Owls nest on the ground. Consequently, the increase in area of Fynbos should allow more birds to breed, provided core areas are kept clear of dogs. The birds will have to change their feeding habits though: currently Rain Frogs are a significant component of their diet. These will be harder to catch in Fynbos than in plantations, but Fynbos will contain many more nocturnal rodents than the plantations.

Some birds are going to lose out. Forest species that colonized the plantations will have to retreat back to their forests or move into the urban neighbourhood. However, these relatively few species will be replaced by far more indigenous Fynbos species that are already recolonizing the areas that are recovering. Most significantly, the perching raptors will be replaced by hovering and gliding raptors and herons. Thus Black Sparrowhawks and Chaffinches will be replaced by Orangebreasted Sunbirds, Cape Sugarbirds and Grassbirds. Unfortunately Tokai is too small to support birds like Secretary Birds and Korhaan which almost certainly occurred here in the past.

**Why is lower Tokai a Core Conservation Area?**

Core Conservation Areas were identified by the Botanical Society for the City of Cape Town in 1997 and 1999. This was from remnant areas around Cape Town for which plant lists existed. Tokai was identified as one of the sites that if not conserved would result in the extinction of plant species. It is thus what conservation planners call an "irreplaceable site": there is nowhere else in Cape Town (or the planet) that can conserve those species, and thus it is indispensable for fulfilling the conservation goal of preventing further species from going extinct in Cape Town.

Since then, the IUCN Red List was updated (finishing in 2009) and the number of threatened species in Cape Flats



Scheduled dates of extraction of pine plantations in lower Tokai as of 2010. Areas currently being restored to Fynbos are shown in green, and areas scheduled for the picnic site are shown in purple. Plantations are shown in white with the currently scheduled year of extraction of each block.

Sand Fynbos and Tokai Park has increased, partly because Cape Town has grown, and partly because we have more data. Tokai is now far more indispensable than in the 1990s and every day, as 2 football fields of land are converted to housing in Cape Town, it grows more indispensable.

Although the "Core Conservation Area" concept has been superseded, Tokai is now an "Irreplaceable" site in the City of Cape Town biodiversity conservation plan. The national status of Cape Flats Sand Fynbos is Critically Endangered. Its international significance is highlighted in its inclusion in the Table Mountain Heritage Site, managed by SANParks. As more lowland Fynbos is lost to development, the significance and importance of Tokai, locally, nationally and internationally, will increase.

#### **Why were the Gums and Oaks on the river cut down?**

The river is not a river, but a canal. We will attempt to convert the canal (channel according to engineers, as "canals" are concrete lined) to a river and to a more natural ecosystem. We cannot find out when the canal was built or why (official records don't seem to exist), but we suspect it was to dry out the Prinskasteel Wetland to allow farming, to lower the water table so that the area could be planted with pines, and to provide water for smallholdings at the Cycle Track. It appears that this area was a wetland before the canal was constructed. Oaks and Gums are serious water users and major invaders of wetlands. Retaining them is incompatible with restoring the wetlands. Legislation regarding aliens and wetlands makes retaining them illegal. We also cannot have trees in a Fynbos ecosystem. Thus they had to go. Wetlands are the most threatened of the communities in the Cape Flats Sand Fynbos and thus top priority for conservation in the Core Conservation area.

#### **Why is it so big? Surely there is enough Fynbos?**

See "Tokai Fynbos – why is it so special?" Basically, to conserve the Fynbos species we have to conserve what is known as a minimum viable population of that species. That takes lots of space. How big an area? We won't know yet. Only after at least two fire cycles into restoration will we have an idea of how much space is needed. For some species, a few hectares will do. For others, Tokai will be too small. This still has to be ascertained, and thus the conservation plan for Tokai will have to be adapted as the data is collected and processed.

We also need to maintain ecosystem processes. For this we need big areas. A minimum block size of 6 ha of "core" is needed (based on research at Agulhas). Core is area of good habitat not influenced by edge effects. So we need to put a buffer of about 20-100m around each core, so for a 6 ha round patch we need 7 ha, but for a long thin patch, we might need up to three times the area. So shape is important and any patch of Fynbos less than 100m across is all edge and no core.

These are the ecosystem constraints we need to work with when planning the conservation areas and the fire blocks. Just like you cannot build a house with 1mm thick glass walls, you cannot have a conservation area that does not meet minimum ecological conditions. And like a house with thin glass walls, an inadequate conservation area will fail: it won't conserve the species that it is supposed to be protecting. Compromises don't work (will 5 or 10 mm-thick glass be adequate as a wall?), unless they respect basic ecological needs. That is the bottom line, and the basis of any negotiation regarding all activities in the area.

#### **What happened to the Dassies? I have not seen any on the mountain for ages! (Lyn McCallum, Bergvliet)**

Dassie populations appear to have collapsed a few years back. However, they may be beginning to make a comeback. We asked if Dassie TB may be an explanation:

*Prof Paul van Helden (Director of the DST/NRF Centre of Excellence for Biomedical Tuberculosis Research, Division of Molecular Biology and Human Genetics, Faculty of Health Sciences, Stellenbosch University, Tygerberg) replies:*

The *Mycobacterium* defined as the Dassie Bacillus was first isolated from the lungs of a free-living Dassie from Nieu Bethesda, Eastern Cape, in the 1950s. It is a member of the *M. tuberculosis* complex and causes TB-like disease in Dassies. It has also been isolated from captive Dassies in zoos outside South Africa and a captive Suricate (*Suricata suricatta*), originally all caught in South Africa. There were no other reports of it in the wild, until we identified it in 2008 in the Groot Winterhoek above Porterville. However, no systematic survey has been done, and we thus have no idea how prevalent it is, but it is probably both widespread and intense.

The Dassie Bacillus can live in lungs of wild Dassies. Whether it is sufficiently pathogenic to kill Dassies is unknown. However, a general decline in Dassie numbers has been observed over the last few decades in many parts of southern Africa, including Zimbabwe.

Dassies live in colonies of up to 80 individuals, consisting of groups headed by one male and up to 20 females and young. The large numbers living in close proximity in natural crevices of rocks or boulders, and their habit of huddling for warmth (due to a poorly-developed temperature regulation), would provide ready spread of TB. Dassies have a slow reproduction rate, giving birth to only 2-3 young after a 6-7 month gestation period. Young reach sexual maturity after 16 months, reach adult size at 3 years, and typically live about 10 years. The animal found with the Dassie Bacillus was pregnant and it is possible that the disease takes hold because of immune suppression during pregnancy.

Future studies of the population decline and the Dassie Bacillus are needed. Transfer between species is known, but transfer to predator species, such as eagles, Caracal and Leopard, has never been reported. It has never been found in humans, and transfer is highly unlikely. It does not appear to be pathogenic in a number of animals normally susceptible to TB, and is rated as low pathogenic potential. Any such infection of humans should be treatable with antibiotics. Treatment in free living wild animals is not possible as no suitable vaccine exists at present.

Most infectious disease epidemics (such as 'flu in humans) come and go in waves. The duration of the epidemic differs depending on the agent. Thus, flu epidemics usually last weeks to months, whereas TB epidemics last decades to hundreds of years. Nevertheless, in some isolated colonies, some animals may survive an epidemic and a slow comeback is possible, provided the environment allows it. Therefore, we hope that the Dassies may stage a recovery at least in some places.

Any sightings, with place (preferably a GPS location), time, date and number of animals, would be appreciated at [pvh@sun.ac.za](mailto:pvh@sun.ac.za).

## Why is Kirstenbosch Gardens Involved in Restoration?

Many people think that Kirstenbosch is only about gardening with pretty indigenous flowers. That Kirstenbosch has little to do with the sciences such as botany and ecology. The fact is that Botanical Gardens around the world are based on a foundation of botany. They are the places where collections from the new world were grown for botanical research. Only recently have botanists been able to flit around the world to far flung regions to do research. As a consequence, the old-style Botanical Garden began to lose its reason to exist and focussed on growing the more exotic and attractive species for visitor's pleasure. Most Botanical Gardens around the world now dabble with cultivars and hybrid selections - pure species work is rare. It is the exotic collections from many different countries and continents that is used to attract visitors to most Botanical Gardens.

Kirstenbosch Gardens is almost unique in that it concentrates all its efforts on indigenous southern African species. From its inception in 1913, Kirstenbosch has built up collections of hundreds of trees and shrubs. It has one of the largest and most representative collections of South African cycads – a group highly threatened in the wild. Some species are so rare that they are only be found in Botanical Gardens and private collections: the natural populations have been decimated and many will probably become extinct in the wild in our generation.

With each curator Kirstenbosch continued to expand its collections. Most notable were the Fynbos sections established in the 1960s dedicated to displaying Ericaceae and Proteaceae and ultimately the Restionaceae in the 1990s. This was a logical development since Kirstenbosch is situated in the middle of the smallest and richest Plant Kingdom in the world.

Originally, as throughout the world, Kirstenbosch saw itself as conserving plants by bringing them into cultivation. Emphasis was placed on developing a 'representative' collection of as many species in selected plant families as possible. Within this objective the goal was to collect and establish at the Gardens as many (if not all!) threatened plant species.

Thus many Sugarbushes, Pincushions, Spiderheads and other genera in the Proteaceae were collected. This family contains many threatened species, often difficult to grow in cultivation. Some, like Spiderheads, are prone to disease, others like Pagodas have weak roots and have to be grafted onto harder rootstock. Species were collected, grown and lost, and re-collected and lost again. This did not do Kirstenbosch's reputation in conservation circles any good. We thought we were conserving threatened species, but in many cases we were only preserving a small gene pool of the easier to grow species.

While we were struggling to grow these plants another bigger struggle was taking place. On our doorstep, and particularly in the lowlands, Fynbos was being converted to houses. There were still vast undeveloped areas in Bergvliet, Heathfield, Tokai and Retreat in the 1960s. But these have rapidly been developed and area by area the local natural vegetation has been lost. Plants that were once easy to find in these areas survive only north of the N1 freeway if at all. The Strawberry Spiderhead now has almost more specimens in European herbaria than growing in the wild. Urbanization continues unabated and our natural areas are being constricted into smaller, more isolated islands with increasing pressure from developers, politicians and immigrants wanting land and housing. What remains on the Peninsula lowlands is very little: Rondevlei Nature Reserve, Kenilworth Racecourse Conservation Area, Meadowridge Common, Rondebosch Common and Tokai. That is all that remains!

In the early 2000s we realized that it would be too costly and difficult to try and grow all these threatened species at Kirstenbosch. The climate at Kirstenbosch is also not ideal, being too wet for many lowland species (with a third the

rainfall). The demand for more experienced horticulturists, more skilled in growing difficult Fynbos species is too great. There is not enough nursery space. Sufficient safeguards to prevent the loss of collections through disease, irrigation failure and staff turnover are not feasible. Even then, the perennial problem of retaining those skills and passing them on to the next generation of horticulturists is huge. And all the time more and more species are urgently in need of conservation intervention.

At about this time a "Global Strategy for Plant Conservation" was developed internationally. This included guidelines and targets for Botanical Gardens. The most important targets set for Botanical Gardens are highlighted below from the Global Strategy for Plant Conservation.

### Global Strategy for Plant Conservation Global targets for 2010 (extract)

- Conserving plant diversity:
- (iv) At least 10 per cent of each of the world's ecological regions effectively conserved;
  - (v) Protection of 50 per cent of the most important areas for plant diversity assured;
  - (vi) At least 30 per cent of production lands managed consistent with the conservation of plant diversity;
  - (vii) 60 per cent of the world's threatened species conserved in situ;
  - (viii) 60 per cent of threatened plant species in accessible 'ex situ' collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes;**
  - (ix) 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained;
  - (x) Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems

These targets led us to focus more on restoration of threatened species. Growing 60% of the 1831 threatened species of the Western Cape at Kirstenbosch, with all the difficulties involved, is impossible. We thus developed an integrated approach to conservation in order to make a better and more effective contribution to conservation.



*Whorl Heath in the Kirstenbosch Stock Beds*

The new programme aims to integrated 'ex situ' (plants grown in Botanical Gardens collections) with 'in situ' (plants conserved in their natural habitat) conservation. Another significant difference is the focus on threatened habitats rather than threatened species. A few plants are not a species: a species exists with root fungi, pollinators, seed dispersers, diseases and all this cannot be done in Botanical

Garden: wild habitats are essential. This means that emphasis will change from mountain species, which are relatively secure, to threatened lowlands habitats. It makes sense to preserving entire communities and ecosystems of plants and animals, rather than a few specimens of one plant species. Kirstenbosch is thus working with experts in botany and Fynbos ecology to plan the best way that it can contribute to conservation.

The primary objective is not to have to restore plants, but that the land is properly managed in ecological terms to best sustain the habitat and the species within it. Restoration is an intervention that is only necessary if a species has been lost in the area.

The most efficient 'ex situ' method to preserve threatened species is to store the seed in seed banks. This gets around the problems of space, numbers, disease, accidents and expertise. In partnership with the Millennium Seed Bank we can preserve a reasonable genetic sample, for a long time, in a safe environment.

The second most efficient method is to maintain threatened species stock beds separate from garden collections. These can be devoted to preserve plants as source material for restoration, seed banking and garden displays. Less threatened species can be kept in special collections in the nursery, and hardier species can be displayed in the garden itself. Also a demonstration garden - called 'The Garden of Extinction' - displays a selection of threatened plants with interpretation to educate and create awareness.

In situ conservation is thus the primary focus of the threatened plants programme at Kirstenbosch. These further focus on local threatened habitats: Sand Fynbos and Renosterveld. Collaboration for in situ conservation involves numerous partners such as the reserve managers at SANParks, Cape Nature and the City of Cape Town. Collaboration with researchers at SANBI, SANParks and volunteers such as CREW (Custodians of Rare and Endangered Wildflowers) are thus key to success.



*Monitoring plantings in the Soetvlei Wetland*

The *in situ* restoration approach is aimed at the holistic restoration of the habitat as far as is possible. This includes attention to minimum viable populations, gene pools, interactions with symbionts and parasites and habitat management, including fire regimes.

Where there is a need to intervene and restore species, the aim is to collect seed or cuttings and grow and restore vegetation within a year of collecting of the plant material. This limits the time the plant material is kept *ex situ*, reducing genetic loss, forestalling mishaps and limiting attacks by unwanted pathogens.

Flagship species are used to market the programme: thus the Whorl Heath is the flagship for the Kenilworth Racecourse Conservation Area. What is the plant flagship for Tokai going to be?

Anthony Hitchcock,  
Nursery, Collections & Threatened Plants Programme,  
Kirstenbosch National Botanical Garden



*Planting Whorl Heath at the Prinskasteel Wetlands 2009*



*Plants in transit to the Prinskasteel Wetlands*

## Observations

### Western Leopard Toads

The Western Leopard Toad breeding season is over again.

Although Tokai Park has no breeding ponds, several breeding ponds occur just outside the Park. These include,

- *to the north*: the Cape Academy Dam (which will be included in the TMNP when the Soetvlei Wetlands are incorporated into the park), 2 dams on the Porter Estate, the Uitsig pond;
- *to the east*: the canal along the Cycle Track, ponds at Die Oog, Colyn, and Dreyersdal Farm Dam; and
- *to the south*: Pinesskasteel River and 5 ponds in the Steenberg Golf Estate.

There are thus 15 known breeding sites within 500m of the Tokai Park.

During 50-51 weeks of the year, the Western Leopard Toad lives in natural veld and peoples gardens. Gardens are especially suitable for toads because they are watered, allowing both toads and their prey to survive and feed more often than in the wild. Compost heaps, vegetable patches, potted plants and rockeries provide both homes and sources of food for the toads. Adult toads never live in ponds, although they do hop into dog bowls to rehydrate – or “drink” through their skin. Toads that fall into swimming pools will drown. Although toads have poison glands on their necks, they taste awful and almost all dogs and cats very quickly learn to leave them alone, allowing toads to live peacefully in gardens.

Sometime during spring, spurred on by unknown cues, Western Leopard Toads migrate *en masse* to ponds to breed. From the ponds the males call and the females follow. Some avow that it is the full moon that stimulates breeding, others that it is rainfall, and others have yet more exotic theories. However, the date is unpredictable and may be anytime from mid July until late September, but is usually early in August.



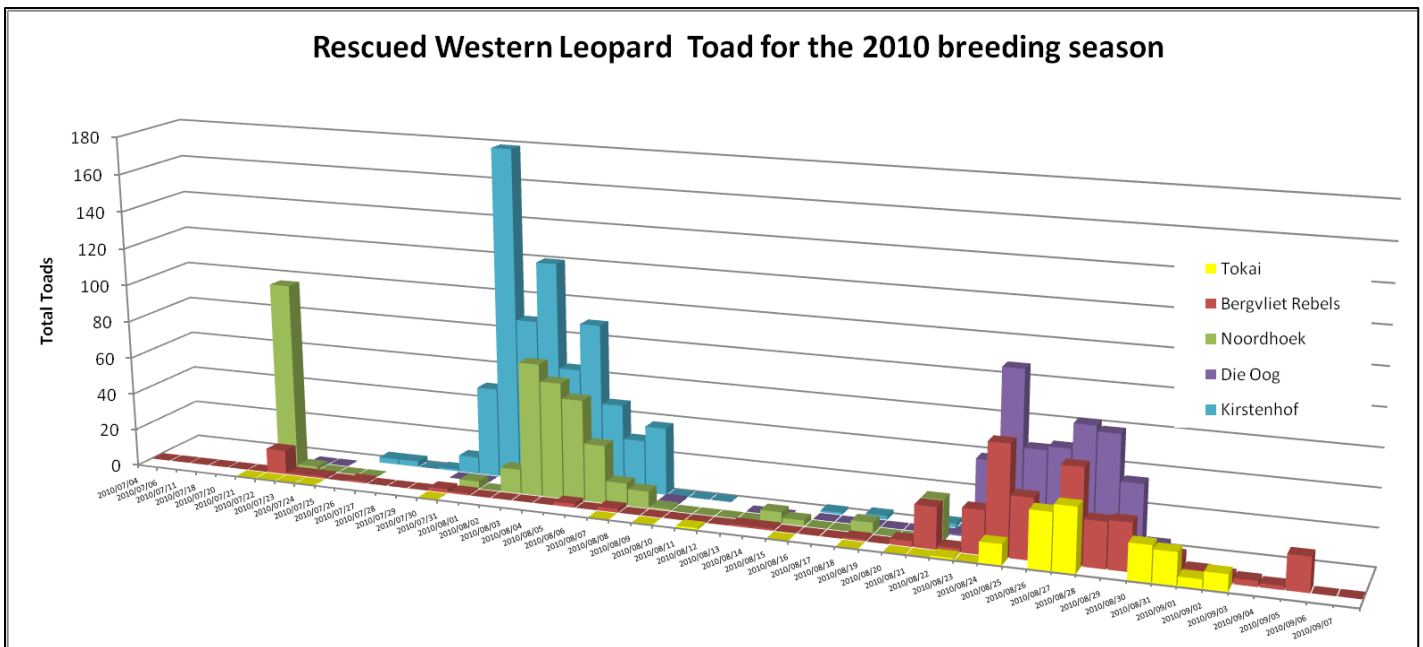
Alex Rebelo

Western Leopard Toads are explosive breeders and do all their breeding in a few days of frenzied activity. Females move to the ponds, lay eggs and depart back to their gardens. Males remain at the ponds a few days longer, although a few hopefuls may remain for up to a week. During the breeding period the males “snore” from the breeding ponds, creating a cacophony (likened to hundreds of motorbikes) that has to be heard to be believed.

Most breeding pools used today are man made. It is suspected that historically Western Leopard Toads made use of hippo pools and larger animal wallows. If so it may help explain why toads seem to like walking down roads (aka animal paths to water) to get to the breeding sites. While larger males head for the ponds, call and fight over the females in the ponds, smaller males attempt to intercept females en route and lock onto the females (known as “amplexis”) and hitch rides to the breeding ponds.



## Rescued Western Leopard Toad for the 2010 breeding season



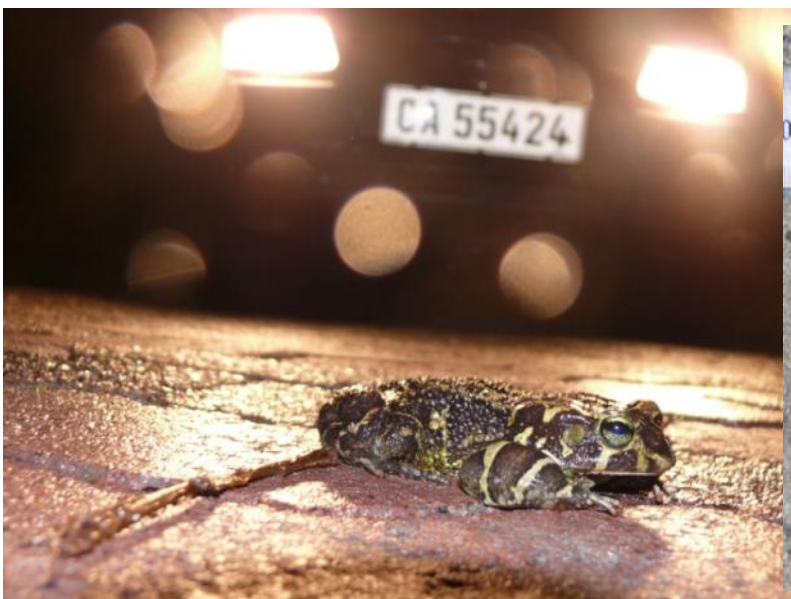
It is not known how many are successful and how many are pushed off by the larger males, but it must be successful enough to allow them to try. Whatever, it means that roads are heavily used by toads to get to the breeding ponds with dire consequences. The last thing a motorist cares about on a rainy evening when returning from a hard days work, or a tot in the pub, is some silly toad on the road. Consequently thousands can be flattened or splattered each year during the breeding season.

During the 2010 breeding season high death rates were reported on Tokai Road adjacent the Steenberg Golf Estate. In fact these were the highest rates recorded in Cape Town at nearly 39% of toads seen. Volunteers are needed for the 2011 season – we will advertise this again for the August breeding season. There appear to be enough volunteers organized by the Friends of Die Oog for the eastern regions. Toads visiting the pools to the north do not encounter major roads, although quite few squashed toads were noted in Sweet Valley.

The 2010 breeding season was interesting with Noordhoek and Kirstenhof toads breeding early in August, and Die Oog and Tokai toads breeding late in August – about 20 days later. Toads did not appear in numbers of previous years, suggesting that with the dry winter many females did not bother breeding. However, it is clear that we will need many more years of data before we have a clear picture of what the toads are doing.

We are hoping that some of the wetlands that are emerging from the cleared pine plantations will be suitable for toads to breed in. Most promising is the Prinskasteel Wetland, but to date there has been no breeding in it.

In the meantime, if you find a toad in your garden or at Tokai, photograph it and visit <http://bgis.sanbi.org/uploadyourtoad>. The markings of each toad are unique and it is hoped that photographs of toads will allow researchers to discover how long toads live for, how large the populations are, and how far they move to breed. You could discover if the same toad comes back to your garden each year, and where it breeds.



Friends of Tokai Park hope to help rescue toads in the 2011 breeding season.

Find out more? Visit: [www.leopardtoad.co.za](http://www.leopardtoad.co.za)

**Upload your Toad!** This is what you need to send in data on your toad. A clear photograph from the top, with a reference scale. Eyes and backside must be visible.

Western Leopard Toad markings are unique "finger prints." Individual toads can thus be identified from year to year.

## Sightings

Please use localities as per the maps on the back cover. Bird observations have been gleaned from Capebirdnet.

### Birds:

**Black-head Heron** foraging in the Fynbos in the Diastella patch, near stream. (16 Sept; Yvonne Viljoen)

**Chaffinch:** are occasionally seen in our Constantia garden, but they are not tame. Yesterday while eating breakfast at Listers at Arboretum we had a male Chaffinch perching on our table beside us looking for crumbs. He would have been easy to photograph. (28 Sept; Dr W Greig)

**Fork-tail Drongo**, single unit, seen north end of Tokai on tree above house garden wall. (27 Sept; Dusty)

**Fork-tailed Drongo** have been seen before in various place in the plantation. Last time, one was seen near the Berlin wall, next to the wooden bridge. (Sept; Margaret Maciver)

**Fork-tail Drongo**, in the wetland area sitting in the dead trees where the Sawwing Swallows used to sit. it looked very forlorn and lonely, and not very well either, so its good (or is it?) to hear that he's still around. (16 Oct; Margaret Maciver)

**Fork-tail Drongo**, At about 17h40 heard and seen in the younger pines alongside Dennendal Rd. (28 Oct; Jessie Blackshaw).

**Pied Crow:** I was horrified to see more than 30 in the area around the canal off Orpen Rd. Will the newly hatched Hadedas chicks in a nearby Oak survive? (17 Sept; Jessie Blackshaw)

**Pied Crows** have been around in numbers at Tokai for over a year. They only became obvious when the pines near the picnic site were removed. Before that you had to look carefully around the picnic site: Mondays were best – the rubbish bins with the weekend's refuse probably helped – and over 40 crows were regular visitors.

After the burns the crows – in flocks (47 counted on one occasion) – foraged in the burned areas, but on what I could never tell – this continued to long after any animals that might have burned in the woodpiles would have rotted. They are still regular visitors.

Should their numbers be controlled? Although the reason for the population explosion of Pied Crows is unknown, they are not the problem, but a symptom of something that has changed. What that is we don't know. Possibly more trees means better breeding sites? But that cannot be – trees have been around for a lot longer than the increase. More kills on the roads? Surely there is not enough road kill to support them, although they certainly help in removing squashed squirrels and lizards. But enough food must be available to support the numbers. Could they be displacing other predatory birds? Not obviously so. Clearly we must resist the knee jerk reaction of getting rid of the crows and find out why their numbers have increased. That might be a more serious problem that needs addressing. Don't shoot the messenger!

### Other animals:

**Western Leopard Toad:** On Saturday 1 October at 23h30 on the tar road to the summit of Constantiaberg at about 790m above sea level, in deep misty conditions of rain and wind, we found 4 adults and 3 juvenile Western Leopard Toads. Later on the foot path towards Vlakkenberg at 530m we found 1 adult and 1 juvenile toad. This is most unusual: toads were not thought to occur over 300m, and definitely not near the tops of the mountains. It begs the question: at which pool do they go to breed and how far down do they have to descend to get there? (Oct; Ruedi Siegenteller)

**Puffadder** seen while planting in Semple wetland (Aug; Tony Rebelo)

**Grysbok spoor** seen at A13 east of Orpen Road on 9 November 2010: they have arrived! (Chris Botes)



**Olive House Snake** seen at Tokai, middle canal, beautiful, large specimen (4 Nov; Arne Purves)



**Gnashing Cricket** *Henicus* sp. Male. Head-body length 20mm, mandibles 8mm. Block A1. (Apr 2009; Tony Rebelo)

### Fungi:

**Pine Fire Fungus** (*Rhizina undulata*) [Ascomycetes, Rhiziniaceae] found in Tokai (A11) in August in cleared plantation burned in April. Many fruiting bodies found at various places. The fungus kills pine seedlings, and is sometimes a problem in young plantations. It is presumably adapted to fire ecosystems as it requires fire to make spores, allowing spread into areas with young pines. This is possibly the first record for the Western Cape. (Aug; Tony Rebelo)



Above: top

Right: underside





## RAINFALL DATA FOR TOKAI PLANTATION WEATHER STATION

Here is the rainfall recorded from Tokai at the Managers office. All measurements are in mm, with "nd" being months for which there is no data. Data from 1959 (which looks like it would have been a record year) to 1970 are missing, as are 1978-1981. Year totals with incomplete data are bracketed. Summaries and data are discussed on the next page.

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1955	nd	nd	nd	nd	265	259	189	266	61	123	51	22	(1235)
1956	7	12	27	71	189	283	199	202	79	107	7	34	1215
1957	19	57	37	50	228	176	223	235	113	183	28	4	1353
1958	3	91	27	89	152	92	54	159	55	49	34	1	804
1959	12	7	45	119	128	468	516	nd	nd	nd	nd	nd	(1294)
missing													
1970	8	22	10	6	173	212	208	163	109	38	26	71	1044
1971	17	1	20	48	78	133	131	137	48	47	15	23	696
1972	38	38	22	72	124	133	75	116	67	23	1	53	757
1973	5	4	31	11	69	81	202	69	113	33	24	43	683
1974	11	7	23	21	174	250	94	359	93	86	37	8	1161
1975	18	27	15	133	240	85	221	142	29	72	26	0	1005
1976	0	14	25	59	95	297	150	88	100	23	145	87	1081
1977	29	48	40	114	215	330	210	184	74	34	28	34	1337
missing													
1981	nd	nd	nd	63	18	85	252	117	158	30	35	28	(784)
1982	30	8	21	55	37	170	109	116	139	171	38	79	972
1983	7	113	77	15	200	317	153	100	104	22	18	23	1149
1984	20	12	55	39	282	98	109	75	132	168	3	101	1095
1985	24	32	95	99	44	181	202	170	97	23	2	7	975
1986	17	28	71	70	107	249	197	273	82	42	46	12	1192
1987	41	46	22	54	186	158	223	179	101	29	16	70	1125
1988	16	0	26	91	127	106	174	107	67	44	25	15	798
1989	13	49	103	85	138	93	159	170	140	79	55	13	1097
1990	16	41	3	211	138	191	245	64	44	4	34	29	1020
1991	16	15	33	28	145	197	207	65	177	60	13	6	960
1992	4	48	24	125	153	246	124	82	100	116	35	23	1078
1993	11	69	13	199	169	163	231	112	28	13	20	38	1065
1994	23	4	5	47	76	427	125	70	64	21	23	6	891
1995	26	12	8	26	87	121	255	151	74	122	29	47	959
1996	3	65	46	61	88	218	174	141	195	108	76	75	1249
1997	28	3	13	59	129	218	64	213	27	49	119	119	1041
1998	16	0	24	89	298	131	173	101	77	39	85	43	1076
1999	12	7	0	108	91	197	135	204	189	6	40	10	999
2000	45	0	41	20	134	158	153	143	207	36	10	26	973
2001	27	12	2	41	176	93	333	257	98	46	21	7	1113
2002	80	33	23	64	166	179	214	159	32	65	46	12	1073
2003	30	19	114	23	80	47	104	219	135	85	0	65	921
2004	20	2	42	123	21	129	180	258	101	144	22	25	1067
2005	41	5	21	137	155	256	111	225	87	56	58	4	1155
2006	4	19	17	79	251	125	179	183	33	74	48	60	1072
2007	3	34	36	116	164	331	205	240	94	95	125	39	1482
2008	35	41	23	33	189	184	257	158	277	28	78	30	1333
2009	7	4	6	39	194	198	230	215	132	58	158	11	1250
2010	6	18	21	40	243	164	98	66	73	67	nd	nd	(796)
MEAN	19	26	32	72	149	191	182	161	100	65	41	34	1073

Many thanks to Chris Botes for the information.

The average rainfall at Tokai is thus 1073 mm per annum, which means that if all the rain fell at once, you would be standing waist deep in water.

This is probably much more than most homes in Tokai receive, as the rainfall decreases sharply further away from the mountain. If you are recording rainfall data at home, please send us your annual data. It would be interesting to see how steeply rainfall declines as one gets further from the mountain.

The predictions for climate change are that less rain will fall on the flats and more in the mountains, so we can expect the gradient to increase. Fortunately, the mountain catches the rain and provides it to our gardens via ground water, so our gardens will not necessarily suffer, and with the plantations being removed, more water will be available via the groundwater for our gardens.

At this stage it is impossible to know if any changes in weather we might be observing are due to enhanced global warming or some solar (e.g. 11-year sunspot cycle) or climatic (e.g. El Nino, Southern Oscillation) cycle.

### Summary of rainfall records for Tokai.

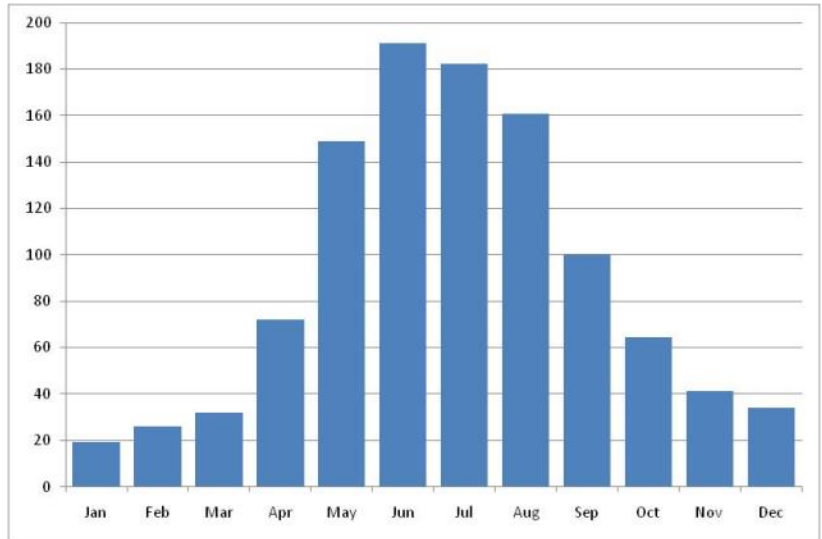
The wettest months are June, July and August at over 150 mm each, with May also being very wet. The driest months are November to March, with less than 50 mm each. April and September are intermediate. This is a typical Mediterranean-type climate rainfall, typical of the Cape West Coast (the south coast tends to have a higher autumn and spring rainfall, with winter being relatively dry).

The month with the lowest rainfall is January (with an average of 19 mm). Surprisingly June has the highest rainfall with 191 mm - usually it is July.

February is the most likely month to have no rain (with 3 records of 0 mm), although in the record each of the summer months from November to March has had no rain in the past. The summer of 1975-6 is the only case on record of 2 consecutive months without rain, or indeed 2 months in one season without rain.

The highest monthly rainfall recorded was July 1959 with 516 mm – over half the average annual rainfall fell in that one month. Curiously, 1959 was obviously a very wet year as June has the second highest rainfall recorded at 468 mm. It is a pity that this is an incomplete year: it would almost certainly be the record year amongst those with data. The third highest month was June 1994: no other months have data with more than 400 mm of rain.

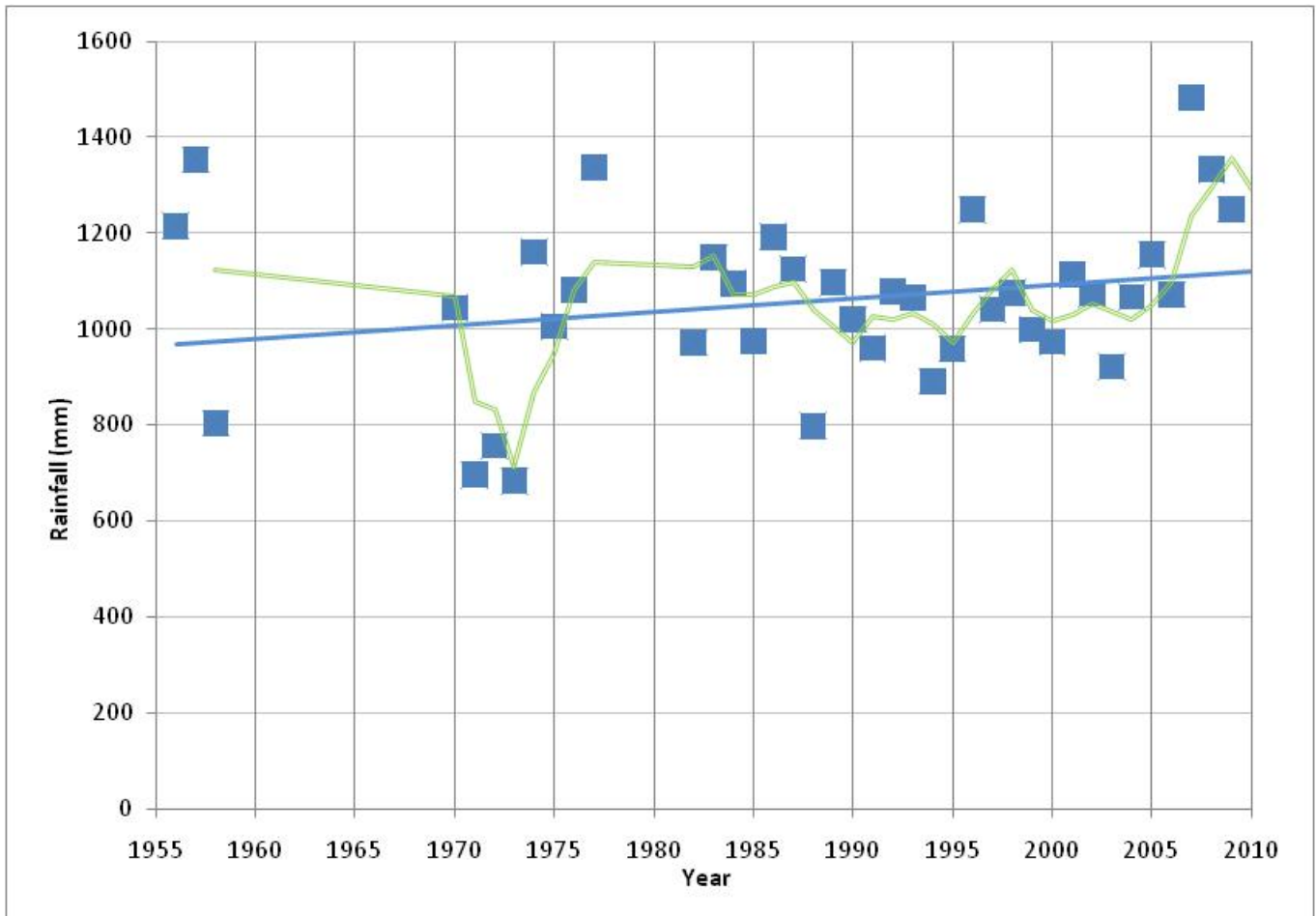
There is no obvious difference in amount of rainfall with time from the earliest records until today (the trend line in blue). It could be argued that over the last few years we have had very few dry years, but that could change next year. Dry spells occurred from 1970-1973 and only one other incidence of more than two successive years of well below average rainfall occurred, from 1993-1995. The driest year on record is 1973 with 64% of the mean rain. Together with 1971, 1973 is also the only year with less than 700 mm per year.



Wet spells of more than two consecutive years occurred in 1955-1957 and 2007-2009. The wettest year on record is 2007, with 138% of the mean. Other wet years with over 1300 mm are 1957, 1977 and 2008.

The running average (in green) shows few trends, other than that the early 1970s were exceptionally dry and the late 2000s were exceptionally wet.

*And how is 2010 shaping up?* Summer 2009/10 was a little drier than normal, but May was exceptionally wet. June to September have been drier than normal, receiving only half the normal rainfall. October is back to average. If rainfall for November and December is normal, then 2010 will be well below average, but not exceptionally dry. Fortunately, the water table appears to have been replenished by the last few wet years, and also by the removal of the plantations, so the canal is still flowing strongly and our bore holes and well points will probably not run dry quite yet.



## THE GEOLOGY OF TOKAI

The geology at Tokai is relatively simple, but no less interesting as a consequence. There are 3 main formations.

### The Cape Granite Suite:

About 560-540 million years ago the Malmesbury Shales were laid down in the Adamaster Ocean. As pre-Africa and pre-America/Antarctica collided to form Gondwana the Adamaster sea was squeezed shut and the shales buried to a depth of 10 km. During the final phases of the closure, at about 540 million years ago, granite formed from the sucking down and melting of the ocean crust which slowly intruded into the shale as blobs floating upward. Because the granite crystallized slowly at depth, it contains large blocky crystals.

As the continents collided they pushed up a mountain range and the granites and shales were uplifted and exposed. Over the next 30 million years these mountains were planed flat.

There is no Malmesbury Shale at Tokai – the nearest is exposed at Tygerberg Hills and Devils Peak, but it extends below the Cape Flats sands with the granite-shale contact almost exactly below the Strandfontein Road (M17) 8 km east of Tokai.

The entire basement of Tokai is thus Cape Granite. Granite "rots" readily at depth due to the action of water, and actual bedrock is absent at Tokai, although boulders can be seen above Westlake, with odd outcrops below Elephants Eye. The granite forms a fertile loam, up to 40 m deep. Faults allow water to flow deep in the rock, although much water flows as surface rivers. Most of the granites, except in the Tokai Park, where they were planted with pines, have been converted to vineyards, and are the prized residential areas of Constantia. This is also where the large mammals and Khoi cattle herds would have grazed. Today only the Baboons remain, still being squeezed by golf courses, vineyard expansion and housing estates.

### The Cape Supergroup Sandstones:

At 510 million years ago the entire Cape Mountain region had been planed flat. The continents started drifting apart again and the area sank forming the Cape Sea. New deposits were laid down, in deltas lagoons and beach deposits from mountains to the north and east. Initially these were shales and mudstones. This Graafwater Formation can be seen as thin rock layers of maroon-red and purple rocks. It erodes readily and often forms caves and steps. The contour path below Elephants Eye follows the Graafwater Formation.

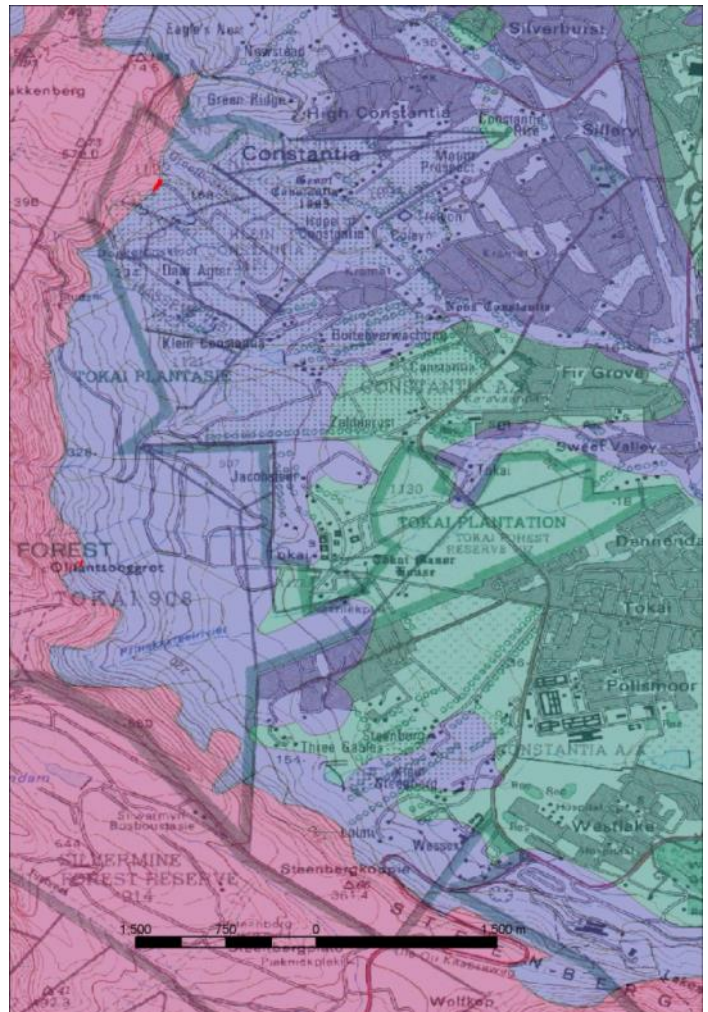
But as the area sank and ocean currents sped up, sorting of sediments occurred. The clays and muds were filtered out leaving behind pure white beach sand. This continued for over 100 million years, with a short interlude at 440 million years when glaciers covered the region and laid down the Cedarberg Shale Band. But this no longer concerns us. Only 50 million years of Peninsula Sandstone remain at Tokai. Most of the higher layers of the Cape Supergroup were either not deposited or have been eroded off: only at Maclears Beacon on Table Mountain is there evidence that erosion is probably the reason. Constantiaberg is wholly Peninsula Sandstone.

The sandstone is hard and does not erode easily. Consequently it is undermined by the rotting of the softer rocks below, forming spectacular cliffs and crags. It also clearly shows the faults that occurred between 280 and 235 million years ago when the Cape Sea rift failed and pre-Africa and pre-America/Antarctica again collided squeezing up the Cape Fold Belt into a mountain range. Since then, the area around Tokai has been in an erosion cycle and no new rocks have formed, with sediments being deposited in the Atlantic Ocean as Africa and South America once again drifted apart. Sandstone erodes slowly by breaking apart, releasing the original sand grains from 500 million years ago to continue their "life cycle." This sand is devoid of nutrients suitable for plants and can be considered inert. Fynbos soils are particularly infertile and useless for growing crops or animals. However, many plants have adapted to growing on these

soils, freed from browsing by animals which cannot survive on their low-nitrogen leaves and stems. In fact, the low nutrients prevent plants from growing well, resulting in an environment where there is little competition for light and space, and extreme specialization for extracting the scarce nutrients. This has allowed the evolution of diverse survival strategies and the accumulation of many species, making Fynbos environments both rich in species and containing many rare species. Even among animals there are many specialized types, so that seven of southern Africa's endemic bird species are Fynbos specialists.

### The Cape Flats Quaternary Sands:

The final actor at Tokai has been the Pleistocene Glaciations. At maximum ice, the sea would have been far away, with land extending to 50 km south of Hangklip in what is now False Bay. Similarly, during the interglacials sea level would have risen, making the Peninsula an island, with beaches at Tokai. Sand dunes and dune seas have migrated over the Cape Flats during the last 5 million years, depositing marine sand from shells, and reworked sediment – mainly sands from the sandstone and granite. Through time, with rain, the alkaline elements (shells and lime) have dissolved, leaving acid sands (although nearer the sea the alkaline sands are continually replenished by the south-easter – the nearest of these are at Zandvlei and Heathfield, and bear Strandveld vegetation). The lower portion of Tokai is covered by these flattened and leached dune and beaches. This acid, infertile sand extends from a few centimetres to over 40 m deep on the Cape Flats, although at Tokai it probably seldom exceeds 10 m depth. It too, like the sandstone soils, is nutrient poor and supports a special Fynbos type: Cape Flats Sand Fynbos.



## TOKAI FYNBOS – WHY IS IT SO SPECIAL?

Much fuss is made about the Fynbos at Tokai. Why is it special? After all no one bothered about it as recently as 1998! Surely it did not suddenly change?

Tokai is part of the Cape Peninsula centre of endemism of the Cape Floristic Region. With over 9000 species of plants the Cape Flora is by far the richest temperate flora on earth, earning itself the status of one of the 6 Floral Kingdoms on earth. Thus this minute area has half of all the plant species in South Africa, and 20% of the flora of Africa!

With over 2500 indigenous plant species the Peninsula is exceptionally rich even by Cape Floral standards. By comparison, the United Kingdom has 1200 species of plants, the Kruger National Park has about 1980 species and Namibia has 3960 species.

There are four national vegetation types at Tokai:

- The Afrotropical Forest is by far the rarest and belongs to the Forest Biome. Potentially it is the climax vegetation type over most of the Peninsula, but it cannot cope with fire. Consequently it is confined to a few fire-safe kloofs at Tokai, minute pockets compared to the larger expanses in Orangekloof and Kirstenbosch. As forests go, Afrotropical is the richest forest in temperate regions, however, its species richness pales into insignificance compared to Fynbos: barely 20 species of tree occur naturally in these forests. Animals, mainly insects, abound in these forests and their species diversity is extraordinary given their area. There are only three small patches of Forest at Tokai, and their species have not been well documented.

- Peninsula Sandstone Fynbos occurs on the uppermost slopes of Constantiaberg and Vlakkenberg. It is confined to the sandstone geology, which weathers to a coarse sand. The soil is exceptionally poor in nutrients and the carrying capacity for supporting animals is very low. Animals do occur, but at extremely low densities. The most common vertebrates are sunbirds and sugarbirds, subsided by nectar provided by plants. But in terms of plants this veld type is extremely rich: based solely on the large number (64) of threatened species, this veld type is classified as Endangered. Some 140 species of plant are categorized as endemic to this vegetation type – they occur nowhere else on earth! This high richness can be explained by the topography (greater relief means more habitats), the proximity to the sea (which limits the variation in climate, so that species occur in narrower zones on the mountain, thus packing more communities and species into the same altitudinal range), and the long isolation of the Peninsula mountains from the other mountains (so that fewer species are shared with neighbouring mountains at Kogelberg, Hottentots Holland and Piketberg, resulting in more unique species).



*Peninsula Granite Fynbos recovering; C3; Nov 2006.*

- Peninsula Granite Fynbos, occurs at the base of the mountain. It forms the roots and foundation for the sandstone, and benefits from the moisture caught by the sandstone ramparts. It is a relatively fertile soil, and consequently the vineyards and most expensive real estate in the city occurs on what used to be Granite Fynbos. Because of its high carrying capacity, this is where the large herds of game, predators, and baboons used to occur historically in the southern Peninsula. Silver Tree groves, lush riverine corridors and fertile, well-watered soils are in especial short supply along the west coast, and Constantia was one of the first farms developed by Europeans, and converted from nature to man's dominion. About one-third remains, and much that does is poorly managed, even by SANParks, who because of safety and fire concerns, prefer to manage it as degraded incipient forest than as rich Fynbos. Some 24 IUCN Red List species occur, and 9 species are endemic or near-endemic to the type. It is classified as Endangered.



*Cape Flats Sand Fynbos recovering; A17, Nov 2008*

- Cape Flats Sand Fynbos is the most threatened vegetation type at Tokai. Only 11% of this veld type is left. Less than 1% is conserved at present, making Tokai the most important nature reserve for this veld type. The veld type currently contains 108 IUCN Red List species (92 threatened with extinction, 4 already extinct, and 12 other species of conservation concern). It thus qualifies nationally as Critically Endangered, both on account of its destruction and its high numbers of threatened species. The sudden change in status of Tokai is not due to anything at Tokai itself, it is due to the rapid loss of Cape Flats Sand Fynbos elsewhere in Cape Town. Projections of urban growth predict that unless something is urgently done, all remaining veld will be lost by 2020, leaving Tokai as the biggest reserve of this veld type. The City of Cape Town has targeted the Blouberg area as a priority conservation area to try and save a representative portion of this veld type. This is a dry region (rainfall 410 mm per year) - Tokai represents the wettest examples of this veld type, with almost double (190%) the average rainfall for this veld type.

Tokai is also special in that we know what used to occur here. About 100m to the east, on the border of the Tokai Park is Bergvliet Farm. In 1917-1919 William Purcell retreated to Bergvliet to convalesce after an illness, and used the time to make a herbarium collection of the species on the farm. He collected almost 600 plant species. Interestingly, he also collected 74 alien species, but virtually no Wattles, and no annual grasses (today over 10 species each of wattle and grass are invasive in the area), and his 6 species of alien Evening Primrose were never appreciated until the last decade. This comprehensive list for a small area, so early is unique. We thus know that Tokai is special for its geophytes or bulbs, with Sorrel *Oxalis* (18 species), Uintjies *Moraea* (13

spp), and *Gladiolus* (11 spp) being among the richest genera. Heaths *Erica* (14), Ragworts *Senecio* (14), Stonecrops *Crassula* (12), Everlastings *Helichrysum* (11) and Geraniums *Pelargonium* (10) are also specious in the area.

Clearly, Tokai Park has a special and important flora. All in all, over 680 plant species have been identified in the Sand Fynbos around Tokai. [The entire Kalagadi Transfrontier Park has about 600 plant species]. No one has yet enumerated the plant species in the Granite Fynbos (which is still largely under pine plantations) or the Sandstone Fynbos. These may well bring the species tally in the Tokai Park – less than 1% of the area of the Table Mountain National Park to well over 1000 plant species. Truly phenomenal!

This high species richness brings with it some serious management and conservation problems.

The first is the issue of core area and edge. There is a minimum area that Fynbos requires in order to maintain itself. Data are sparse, but 6 ha appears to be the minimum area. This 6 ha must be “core” – it must exclude edge effects, paths and fire belts. These edge effects erode the core, resulting in lowered survival, less pollinators and seed dispersal, bringing in aliens, and must be added to the 6 ha as a 50-100m wide zone of “edge.” The area required to conserve Fynbos as a natural unit entirely on its own is about 600 ha. Tokai is too small! But by linking it to the Table Mountain National Park with a corridor of natural vegetation through the Granite Fynbos it is hoped that ecosystem processes can be sustained. This places limitations on paths and access to the Fynbos, while at the same time requiring fire belts and clear zonation of access.

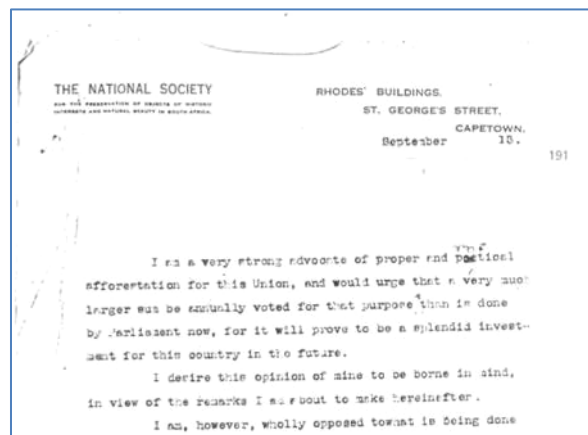
Ecosystems must function properly to conserve species. But for species conservation we also need “Minimum Viable Populations” or MVPs. Simply saving a few plants is not enough. Populations must be viable, and as subpopulations become extinct elsewhere on the Cape Flats the opportunities to rescue or save inviable populations is fast becoming impossible. How big is a viable population? It varies, theoretical studies suggest a minimum of 2500 individuals, slightly more if the sex ratio is skewed, and perhaps as few as 1000 if the plants are able to survive fires and grow to hundreds of years old (such as the Common Sunshine Conebush or King Protea). How much space do we need for 2500 plants? We don't know – it depends on the habitat conditions and how dense and how extensively they occur in the area. It could be a few hectares, or dozens of hectares. And with almost 60 threatened Red List species of plant at Tokai, each with their own habitat requirements, this is quite a difficult question to answer. Important too, it that we also need to conserve MVPs for the pollinators and seed dispersers, and keep them safe from aliens, such as the Argentine Ant that kills the indigenous ants that disperse plant seeds and keep Copper and Blue Butterflies safe from fire and predation.

We also need “Wildlife Safe Areas.” These are areas in which the Porcupines, Caracals, Otters, Cape Fox and other top predators feel safe from humans and can survive to help manage the ecosystems of pollinators, dung beetles, seed dispersers, diseases, frogs, fungi that act as roots for most plant species, and their predators, parasites and prey. The food web is complex. Fortunately, these bigger animals can move around in the Table Mountain National Park and the Constantia Greenbelts, so that it is not necessary to conserve MVPs for them exclusively within the Tokai Park, but they do need refugia and safe places, and Tokai is the lowermost safe place in lowlands of Cape Flats.

## History

Here a copy of a letter written by Henry Cloete in 1913, the owner of the historic Farm Alphen, which is now the Alphen Hotel. The letter affords us a view of the Constantia valley almost a hundred years ago when the first plantation trees were reaching maturity. The letter is one of bitter complaint as to how the plantations had destroyed his farm, the valley and the view. I find the letter fascinating reading and an inspiration to every lover of the Mountain and its acclaimed fauna and flora.

James Forsyth



I am a very strong advocate of proper and practical afforestation for this Union, and would urge that a very much larger sum be annually voted for that purpose than is done by Parliament now, for it will prove to be a splendid investment for this country in the future.

I desire this opinion of mine to be borne in mind, in view of the remarks I am about to make hereinafter.

I am, however, wholly opposed to what is being done by afforestation at present on the slopes of Table Mountain, except perhaps on such barren spots as those facing Cape Town and elsewhere – where no indigenous growth will thrive – for the following reasons:-

Whilst admitting that afforestation on a fairly level ground will increase the water supply, by reason of the soaking into the ground of the rain and consequent evaporation, I maintain that this is not applicable to afforestation on steep slopes like those of Table Mountain, where all the rain which falls is immediately drained off and runs into the sea, unless checked by thick indigenous undergrowth.

(2)

Before the afforestation took place on the slopes of Table Mountain there were silver trees, proteas and much indigenous undergrowth, which prevented the rain falling there from running off at once, and the water percolated for hours through this undergrowth before it ran off, and the consequence was a plentiful feeding of the springs along the ravines and kloofs. Now – where afforestation has taken place, - there are no Silvertrees, proteas or undergrowth, all being destroyed by the plantations – The droppings of the gum and pine variety of trees are washed away, and the ground is left practically bare, and the rain which falls runs off like that from a corrugated iron roof – with what results? –

(1) As I have already stated the water does not soak into the ground like it did before – feeding the springs. –

(2) That an enormous amount of damage has been, and is being, done to the landed proprietors below. –

Speaking for myself – and I have no doubt other proprietors will confirm me as being their experience also – I say thousands of tons of most valuable soil, even portions of my vineyard, have been washed out and carried to the sea. –

My waterworks – which had been there from time immemorial, and which will cost me some £500 to replace – have also been not entirely washed away.

At Alphen – my property – there is a stream running through the whole length of it. The channel of this, I remember as a boy – now nearly 60 years ago, - was about 12 feet wide and 8 feet deep, and carried off all the rain

(3)

and other water. It was of about the same dimensions before afforestation was started, and was sufficient for all purposes, because the water that fell on the Mountain, percolating as it did for hours, did not reach us before most of the water which had fallen below the Mountain had had an opportunity of being carried off by this channel. Now, the rush from the Mountain is so sudden, that the water from this combines with the water below, and the old channel has been washed out some 100 feet wide and 50 deep, doing enormous damage in consequence.

The rare, beautiful indigenous Silver Tree, under which all kinds of undergrowth will thrive, has been ruthlessly uprooted and replaced by hideous gums and useless pines, which destroy every other bit of vegetation.

Why not, again, propagate the Silver Tree, preserve the undergrowth and the erstwhile magnificent flora of Table Mountain; also plant the Wild Olive, Hard Pear, White Pear, Assegai wood, White and Red Elms, and the innumerable other beautiful indigenous trees and shrubs, which I remember as a youth, climbing Table Mountain, passing through and growing in great profusion in and along the ravines and kloofs of the Mountain. In that direction I would say lies practical, sane and proper afforestation of Table Mountain – which would have the effect of conserving the water which falls on the slopes of the Mountain for the Summer supply – which it is badly needed; stop the damage being done to the Flora of the Mountain; and the property of the owners below, and moreover beautify the Mountain.

(4)

There would then be no necessity to disfigure our beautiful Mountain by cutting it into squares, make it resemble a Chess-board, more than anything else – and which is such an abomination in my sight, that now, I invariably turn my back on what formerly I used to look at for hours in contemplation – with admiration and delight.

I would also like to point out – and in this my fellow farmers in the Constantia area will also confirm me – that successful viticulture is being jeopardized, for, by planting the slopes of Table Mountain with Gums and Pines, a certain amount of humidity in the atmosphere, especially in the Springtime (no actual increase in the supply of available irrigable water results) which now that we have to rely on the American Stocks, for the reconstitution of our vineyards – is giving much trouble in containing Anthracnose, <??> and other fungoid diseases, in our vines and orchards, which never previously affected them to the extent it does now, and retards the due ripening of our grapes, always a somewhat difficult result to achieve, from vines grafted on American Stocks. – Further, these Gums and Pines planted, often, along the kloofs and ravines, where our usual Summer water supply of water flows through – drink it up, at a time, we want it most. – The Mountain water supply on my estate during Summer months – and I know this has been the experience of all owners at the foot of the Mountain, has materially decreased since the afforestation of it.

(5)

I cannot give you the exact sum, which can easily, however, be obtained from the Public Works Department, but I know it is a very material sum which the Government has spent in augmenting, by building reservoirs, the falling water supply at the Porter Reformatory and Tokai, where there always was a magnificent supply of water for

irrigation and other purposes on the farm, previous to the planting of the forests on the slopes of the Mountain. The nett result, therefore, of the afforestation of the Mountain, is that when we do not want it we get too much water and moisture damaging our property and crops, and when we do want it, badly, our water supply is destroyed by it.

Then, further, as I have said at the outset – afforestation, on a fairly level ground, and near a Railway, where a Siding can be put in, will be a great Commercial Asset to the Union, but can this be said of planting, practically on accessible mountain slopes? Why! to get poles down from the slopes to an available railway, to transport them, say, to the mining centres, where there is a market for them, it will cost almost as much, as the poles will realize. As a commercial proposition therefore afforestation on Table Mountain slopes must prove hopeless as a remunerative investment for the Government.

The above facts and arguments must convince any reasonable person that the present mode of afforestation of Table Mountain, from an atheistic, beneficial, economic and useful – in fact from any point of view, except that of the Forestry Department – is a fiasco, most objectionable,

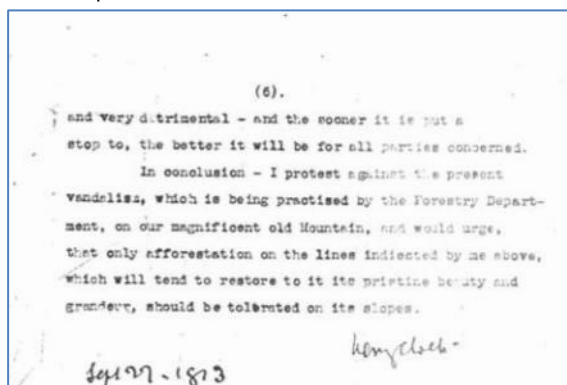
(6)

and very detrimental – and the sooner it is put a stop to, the better it will be for all parties concerned.

In conclusion – I protest against the present vandalism, which is being practiced by the Forestry Department, on our magnificent old Mountain, and would urge, that only afforestation on the lines indicated by me above, which will tend to restore to it its pristine beauty and grandeur, should be tolerated on its slopes.

<signed> Henry Cloete

Sept 27 1913



Tokai before the pines: who? when?

## Species Lists

Lists of species from Tokai (from the entire Tokai Park, not just the lower section below the picnic area) are included here. The lists are by their nature never complete, but may contain inaccuracies and rare records. Having been accumulated over many decades by different reserve managers, authentication is problematic. Corrections, additions and comments will be appreciated.

### BIRDS

→ migratory; 🚚 recent colonizers; 🦹 aliens; ? suspect records

- |   |  |
|---|--|
| <p>58 Reed Cormorant<br/>62 Grey Heron<br/>63 Black-head Heron<br/>71 Cattle Egret<br/>76 Black-crown Night Heron<br/>81 Hamerkop<br/>83 White Stork<br/>91 (African) Sacred Ibis 🚚<br/>94 Hadedea Ibis 🚚<br/>102 Egyptian Goose<br/>104 Yellowbill Duck<br/>105 African Black Duck<br/>112 Cape Shoveler<br/>116 Spurwing Goose<br/>126b Yellowbill Kite →<br/>127 Blackshoulder Kite<br/>130 European Honey Buzzard<br/>131 Black Eagle (= Verreauxs Eagle)<br/>133 Steppe Eagle ?<br/>136 Booted Eagle →<br/>148 African Fish Eagle<br/>149 Steppe Buzzard →<br/>150 Forest Buzzard<br/>152 Jackal Buzzard<br/>155 Rufouschest Sparrowhawk (= Redbreast)<br/>158 Black Sparrowhawk 🚚<br/>160 African Goshawk<br/>161 Gabar Goshawk<br/>169 Gymnogone (= African Harrierhawk)<br/>171 Peregrine Falcon<br/>172 Lanner Falcon<br/>173 Eurasion Hobby (European Hobby Falcon)<br/>181 Rock Kestrel<br/>190 Greywing Francolin<br/>195 Cape Spurfowl (= Cape Francolin)<br/>203 Helmeted Guineafowl 🚚<br/>221 Stripe Flufftail<br/>208 Blue Crane<br/>255 Crown Lapwing (was Plover)<br/>258 Blacksmith Plover 🚚<br/>297 Spotted Thickknee (= Dikkop)<br/>315 Greyhead Gull<br/>348 Rock Dove (Feral Pigeon)<br/>349 Speckled Pigeon (= Rock Pigeon)<br/>350 (African) Olive Pigeon (= Rameron Pigeon)<br/>352 Redeye Dove<br/>354 Cape Turtle Dove<br/>355 Laughing Dove<br/>360 Lemon Dove (= Cinnamon Dove)<br/>370 Knysna Turaco (<i>escape! 1994</i>; = Loerie)<br/>377 Redchest Cuckoo<br/>385 Klaas's Cuckoo<br/>386 Diederik Cuckoo<br/>391 Burchell's Coucal<br/>392 Barn Owl<br/>394 African Wood Owl<br/>401 Spotted Eagle Owl<br/>405 Fieryneck Nightjar<br/>411 Common Swift (= European Swift) →<br/>412 (African) Black Swift →<br/>418 Alpine Swift<br/>417 Little Swift<br/>415 Whiterump Swift →</p> | <p>424 Speckled Mousebird<br/>429 Giant Kingfisher<br/>431 Malachite Kingfisher<br/>451 African Hoopoe<br/>478 Brownback Honeybird (= Slenderbill Honeyguide)<br/>480 Ground Woodpecker<br/>488 Olive Woodpecker<br/>529 Rock Martin<br/>536 Black Sawwing Swallow<br/>518 Barn Swallow (= European Swallow) →<br/>520 White-throat Swallow →<br/>526 Greater-stripe Swallow →<br/>530 (Common) House Martin →<br/>538 Black Cuckooshrike<br/>541 Forktail Drongo 🚚<br/>548 Pied Crow<br/>550 Whiteneck Raven<br/>566 Cape Bulbul<br/>572 Sombre Greenbul (= Bulbul)<br/>577 Olive Thrush<br/>581 Cape Rock Thrush<br/>596 (African) Stonechat<br/>589 Familiar Chat<br/>601 Cape Robinchat (= Robin)<br/>638 Little Rush Warbler (= African Sedge Warbler)<br/>640 Knysna Warbler<br/>661 Cape Grassbird<br/>669 Greyback Cisticola<br/>681 Neddicky<br/>686 Karoo Prinia<br/>690 (African) Dusky Flycatcher →<br/>700 Cape Batis<br/>710 (African) Paradise Flycatcher →<br/>713 Cape Wagtail<br/>732 Fiscal Shrike (= Common Fiscal)<br/>736 Southern Boubou<br/>746 Bokmakierie<br/>757 Common Starling (= European Starling) 🦹<br/>769 Redwing Starling<br/>773 Cape Sugarbird<br/>775 Malachite Sunbird<br/>777 Orangebreast Sunbird<br/>783 Southern Doublecollar Sunbird<br/>792 Amethyst Sunbird 🚚<br/>796 Cape White-eye<br/>801 House Sparrow<br/>803 Cape Sparrow<br/>804 (Southern) Grey-head Sparrow<br/>813 Cape Weaver<br/>827 Yellow Bishop (Yellowrump Widow)<br/>846 Common Waxbill<br/>868 Common Chaffinch 🦹<br/>872 Cape Canary<br/>874 Cape Siskin<br/>885 Cape Bunting</p> |
|---|--|

The bird list now stands at 118 species.

Source: Chris Botes, many birders and lists, esp. John Graham.

## MAMMALS

Names follow Skinner & Chimimba, except for bats which follow Monadjem et al.

☠ - alien invasive; ♻️ reintroduced † globally extinct

### The following species have been recorded at Tokai

- Golden Mole Family
  - Cape Golden Mole *Chrysochloris asiatica*
- Dassie Family Rock Hyrax *Procavia capensis*
- Molerat Family (Rodent Order)
  - Cape Dune Molerat *Bathyergus suillus*
  - Cape Molerat *Georynchus capensis*
- Porcupine Family (Rodent Order)
  - Porcupine *Hystrix africaeaustralis*
- Rat Family (Rodent Order)
  - Cape Spiny Mouse *Acomys subspinosus*
  - Brants Climbing Mouse *Dendromus mesomelas*
  - Pygmy Mouse *Mus minutoides*
  - Vlei Rat *Otomys irroratus*
  - Four-stripe Grass Mouse *Rhabdomys pumilio*
  - Grey Squirrel *Sciurus carolinensis* ☠
- Monkey Family Chacma Baboon *Papio hamadryas*
- Shrew Family Forest Shrew *Myosorex varius*
- Cat Family (Carnivore Order)
  - Caracal *Caracal caracal*
  - Domestic Cat *Felis domestica* ☠
- Genet Family (Carnivore Order)
  - Small Spot Genet *Genetta genetta*
- Mongoose Family (Carnivore Order)
  - Cape Grey Mongoose *Galerella pulverulenta*
- Dog Family (Carnivore Order) Cape Fox *Vulpes chama*
- Otter Family (Carnivore Order)
  - African Clawless Otter *Aonyx capensis*
- Buck Family
  - Sambar *Cervus inicolor* ☠
  - Cape Grysbok *Rhaphicerus melanotis*

### The following species may occur at Tokai

- Elephant Shrew Family
  - Cape Rock Elephant-shrew *Elephantulus edwardii*
- Rat Family
  - Grey Climbing Mouse *Dendromus melanotis*
  - Cape Short-tail Gerbil *Desmodillus auricularis*
  - Hairy-foot Gerbil *Gerbillurus paebe*
  - Gerbil Mouse *Malacothrix typica*
  - Namaqua Rock Mouse *Micaelamys namaquensis* (was *Aethomys*)
  - House Mouse *Mus musculus* ☠
  - Verreaux Mouse *Myomyscus verreauxii*
  - White-tail Mouse *Mystromys albicaudatus*
  - House Rat *Rattus rattus* ☠
  - Norwegian Rat *Rattus norvegicus* ☠
  - Krebbs Fat Mouse *Steatomys krebsii*
  - Cape Gerbil *Tatera afer*
- Shrew Family
  - Red-grey Musk Shrew *Crocidura cyanea*
  - Greater Red Musk Shrew *Crocidura flavescens*
  - Lesser Dwarf Shrew *Suncus varilla*
- Fruit Bat Family
  - Egyptian Rousette Bat *Rousettus aegyptiacus*
- Sheath-tail Bat Family
  - Mauritian Tomb Bat *Taphozous mauritanus*
- Free-tail Bat Family
  - Egyptian Free-tail Bat *Tadarida aegyptiaca*
- Vesper Bat Family
  - Long-tail Serotine Bat *Eptesicus hottentotus*
  - Natal Long-finger Bat *Miniopterus natalensis* (was *M. schreibersii*, but now separate)
  - Temminks Hairy Bat *Myotis tricolor*
  - Cape Serotine Bat *Neoromicia capensis*
- Slit-face Bat Family
  - Egyptian Slit-face Bat *Nycteris thebaica*

- Horseshoe Bat Family
  - Cape Horseshoe Bat *Rhinolophus capensis*
  - Geoffroy's Horseshoe Bat *Rhinolophus clivosus*
- Genet Family Large Spot Genet *Genetta tigrina*
- Mongoose Family Marsh Mongoose *Atilax paludinosus* (= Water Mongoose)
- Buck Family
  - Klipspringer *Oreotragus oreotragus* ♻️
  - Steenbok *Rhaphicerus campestris*
  - Common Duiker *Sylvicapra grimmia*

### The following species are extinct at Tokai

It is highly unlikely that verifiable records of these species from Tokai will ever be found. However, these species did occur in the vicinity and probably occurred historically in Tokai.

- Aardvark Family Aardvark *Orycteropus afer*
- Elephant Family African Elephant *Loxodonta africana*
- Rabbit Family
  - Cape Hare *Lepus capensis*
  - Scrub Hare *Lepus saxatilis*
- Hyaena Family (Carnivore Order)
  - Spotted Hyaena *Crocuta crocata*
  - Brown Hyaena *Parahyaena brunnea*
  - Aardwolf *Proteles cristata*
- Cat Family
  - African Wild Cat *Felis silvestris*
  - Cape Lion *Panthera leo capensis* †
  - Leopard *Panthera pardus*
- Dog Family
  - Black-back Jackal *Canis mesomelas*
  - Bat-ear Fox *Otocyon megalotis*
- Otter Family Honey Badger *Mellivora capensis*
- Rhino Family Black Rhinoceros *Diceros bicornis*
- Horse Family Cape Mountain Zebra *Equus zebra zebra*
- Pig Family Cape Warthog *Phacochoerus aethiopicus* †
- Hippo Family Hippopotamus *Hippopotamus amphibius*
- Buck Family
  - Red Hartebeest *Alcelaphus buselaphus*
  - Grey Rhebok *Pelea capreolus*
  - Eland *Tragelaphus oryx*

Source: Chris Botes, Alanna & Alex Rebelo, Smithers, Monadjem et al. (bats)

Brants Climbing Mouse (Apr 2009, Block C3)



Tony Rebelo



## REPTILES

### Snakes

- Earth Snake Family  
 Pink Earth Snake *Typhlops lalandei*  
 Thread Snake Family  
 Thread Snake *Leptotyphlops nigricans*  
 True Snake Family  
 Cape Many-spot Snake *Amplorhinus multimaculatus*  
 Herald Snake *Crotaphopeltis hotamboeia*  
 Egg-eating Snake *Dasypeltis scabra*  
 Boomslang *Dispholidus typus*  
 Spotted Harlequin Snake *Homoroselaps lacteus*  
 Common Slugeater *Duberria lutrix*  
 Aurora House Snake *Lamprophis aurora*  
 Brown House Snake *Lamprophis fuliginosus*  
 Olive House Snake *Lamprophis inornatus*  
 Brown Water Snake *Lycodonomorphus rufulus*  
 Cross-mark Snake *Psammophis crucifer*  
 Whip Snake *Psammophis leightoni leightoni*  
 Rhombic Skaapsteker *Psammophylax rhombeatus*  
 Mole Snake *Pseudaspis cana*  
 Cobra Family  
 Rinkhals *Hemchatus haemachatus*  
 Cape Cobra *Naja nivea*  
 Viper Family  
 Puff Adder *Bitis arietans*  
 Berg Adder *Bitis atropos*

### Lizards

- Marble Leaf-toe Gecko *Afrogecko porphyreus*  
 Cape Legless Skink *Acontias meleagris meleagris*  
 Southern Rock Agama *Agama atra atra*  
 Cape Dwarf Chameleon *Bradypodium pumilium*  
 Black Girdle Lizard *Cordylus niger*  
 Cape Crag Lizard *Pseudocodylus microlepidotis microlepidotis*  
 Shortleg Seps *Tetradactylus seps*  
 Cape Skink *Trachylepis capensis*  
 Redside Skink *Trachylepis homalocephala*

### Tortoises:

- Angulate Tortoise *Chersina angulata*  
 Common Padlooper *Homopus aerolatus*

### Possibilities:

- Cape Grass Lizard *Chamaesaura anguina anguina*  
 Sand Snake *Psammophis leightoni*  
 Variegated Skink *Trachylepis variegata*

Source: Chris Botes, Alex Rebelo

## AMPHIBIANS

### Recorded:

- Cape River Frog *Amieta fuscigula*  
 Western Leopard Toad *Amietophrynus pardalis*  
 Cape Rain Frog *Breviceps gibbosus*  
 Arum Lily Frog *Hyperolius horstockii*  
 Banded Stream Frog *Strongylopus bonaespei*  
 Clicking Stream Frog *Strongylopus grayii*  
 Cape Sand Frog *Tomopterna delalandii*  
 Common Platanna *Xenopus laevis*

### Possibilities:

- Cape Peninsula Moss Frog *Arthroleptella lightfootii*  
 Sand Rain Frog *Breviceps rosei rosei*  
 Cape Caco *Cacosternum capense*  
 Flat Caco *Cacosternum platys*  
 Roses Mountain Toadlet *Capensibufo rosei*  
 Painted Reed Frog *Hyperolius marmoratus* ☠  
 Cape Sand Toad *Vandijkophrynus angusticeps*

### Locally Extinct:

- Microfrog *Microbatrachella capensis*  
 Cape Platanna *Xenopus gillii*

Source: Chris Botes, Alex Rebelo



Cape Dwarf Chameleon

Alex Rebelo



Marble Leaf-toe Gecko

Alex Rebelo



Western Leopard Toad toadlet

Alex Rebelo

## INVASIVE ALIEN PLANT SPECIES AT TOKAI

(In rough order of abundance in lower Tokai)

### Extremely abundant:

Quaking Grass *Briza maxima* (Grass Family)  
Hairy Wild Lettuce *Hypochaeris radicans* (Daisy)  
Garden Route Ragwort *Senecio pterophorus* (Daisy)  
Monterrey Pine *Pinus radiata* (Pine)  
Port Jackson Wattle *Acacia saligna* (Pea)  
Bangalay *Eucalyptus botryoides* (Gum)  
Kikuyu *Pennisetum clandestinum* (Grass)  
Longleaf Wattle *Acacia longifolia* (Pea)  
Golden Wattle *Acacia pycnantha* (Pea)  
Black Wattle *Acacia mearnsii* (Pea)  
Blackwood *Acacia melanoxylon* (Pea)  
SoboSoba Nightshade *Solanum retroflexum* (Potato)  
Stinkbean *Paraserianthes lophantha* (Pea)  
Pussy Willow *Salix caprea* (Willow)  
(Not included - lots of annual grasses: *Lagurus*, *Lolium*,  
*Avena*; lots of annual peas: *Medicago*, *Lotus*, *Lupinus*, *Vicia*).

### Common:

Various Gums *Eucalyptus spp* (Gum Family)  
French Broom *Genista monspessulana* (Pea)  
Australian Cheesewood *Pittosporum undulatum* (Cheesewood)  
Camphor *Cinnamoni camphoratus* (Avocado)  
Pampas grass *Cortaderia jubata* (Grass)  
Crofton Weed *Ageratina adenophora* (Daisy)  
Woolly Plectranthus *Plectranthus comosus* (Mint)  
Greater Periwinkle *Vinca major* (Milkweed)  
White Ash *Fraxinus americanus* (Olive)  
English Oak *Quercus robur* (Oak)  
Inkberry *Phytolacca octandra* (Belhambra)  
Spanish Broom *Spartium junceum* (Pea)  
Screwpod Wattle *Acacia implexa* (Pea)  
Sesbania *Sesbania punicea* (Pea)  
Black Locust *Robinia pseudoacacia* (Pea)  
Brazilian Pepper *Schinus terebinthifolius* (Mango)  
Bugweed *Solanum mauritanum* (Potato)  
Purpletop *Verbena bonariensis* (Verbena)  
Outeniqua Yellowwood *Podocarpus falcatus* (Yellowwood)  
Thatching Reed *Thamnochortus insignis* (Reed)  
Tecoma capensis Cape Honeysuckle (Snapdragon)

### Sparse:

Chinese Privet *Ligustrum sinense* (Olive Family)  
Hedge Hakea *Hakea salicifolia* (Protea)  
Kraal Aloe *Aloe arborescens* (Aloe)  
Madeira Vine *Anredera cordifolia* (Madeira Vine)  
Beefwood *Casuarina equisetifolia* (Beefwood)  
Cape Ash *Ekebergia capensis* (Mahogany)  
Morning Glory *Ipomoea indica* (Morning Glory)  
Weeping Willow *Salix babylonica* (Willow)  
Crack Willow *Salix fragilis* (Willow)  
Paperbark *Melaleuca styphelioides* (Gum)  
Swamp Cypress *Taxodium distichum* (Swamp Cypress)  
Australian Myrtle *Leptospermum laevigatum* (Gum)  
American Bramble *Rubus cuneifolius* (Rose)  
Potato Creeper *Solanum seforthianum* (Potato)  
Cherry Pie *Lantana camara* (Verbena)  
Poplar *Populus X canescens* (Willow)  
Agapanthus *Agapanthus praecox* (Agapanthus)

### Rare:

Wild Iris *Dietes sp* (Iris Family)  
Baileys Wattle *Acacia baileyana* (Pea)  
Pearl Wattle *Acacia podalyriifolia* (Pea)  
Peppertree Wattle *Acacia elata* (Pea)  
Flowering Gum *Corymbia ficifolia* (Gum)  
Prickly Pear *Opuntia ficus-indica* (Cactus)  
Syringa *Melia azedarach* (?)  
Rooikrans Wattle *Acacia cyclops* (Pea)  
Moth Catcher *Araujia sericifera* (Milkweed)  
Yucca *Yucca sp* (Yucca)

Inkberry Cestrum *Cestrum laevigatum* (Potato)  
Silky Needlebush *Hakea sericea* (Protea)  
Rock Needlebush *Hakea gibbosa* (Protea)  
Cluster Pine *Pinus pinaster* (Pine)  
Wild Tobacco *Nicotiana glauca* (Potato)  
Guava *Psidium guajava* (Gum)  
Date Palm *Phoenix reclinata* (Palm)

Source: Chris Botes, Tony Rebelo

## FUNGI

This list is far from comprehensive, focussing on the edible mushrooms and their dangerous lookalikes.

Many fungi are poisonous: they are eaten at your own risk.

Learn the species with an old tutor before trying any.  
(☠ poisonous, ☠ alien)

### Agaric Family

Field Mushroom *Agaricus campestris* (was *Psalliota*) ☠  
Horse Mushroom *Agaricus arvensis* (was *Psalliota*) ☠

### Amanita Family

Blusher *Amanita rubescens* (☠ raw) ☠  
Death Cap *Amanita phalloides* ☠ ☠  
Fly Agaric *Amanita muscaria* ☠ ☠  
Panther Cap *Amanita pantherina* ☠ ☠

### Boletus Family

Boletus *Suillus bellini* ☠  
Cow Boletus *Suillus bovinus* ☠  
Stone Mushroom *Boletus edulis* ☠

### Ink Cap Family

Shaggy Ink-Cap *Coprinus comatus* ☠

### Parasol Family

White Parasol *Lepiota zeyheri* ☠

### Polypore Family

Sulphur Shelf *Polyporus sulphureus* ☠

### Russula Family

Cape Russula *Russula capensis*  
Pine Ring *Lactarius deliciosus* ☠  
Purple-stemmed Russula *Russula drimeia* ☠



Quaking Grass the commonest Alien at Tokai

## INDIGENOUS TREES FOUND IN TOKAI

This list includes only the indigenous trees that occur naturally in the Tokai area. Many other trees alien to Tokai, were planted in the Tokai Arboretum and elsewhere. Where invasive these are listed under invasives. The official tree number is given and used to sort the species.

### Found in forest:

- 18 Real Yellowwood *Podocarpus latifolius* (Yellowwood Family)
- 39 White Stinkwood *Celtis africana* (Elm)
- 118 Stinkwood *Ocotea bullata* (Bay)
- 140 Red Alder *Cunonia capensis* (Wild Alder)
- 224 Cape Rattlepod *Crotalaria capensis* (Pea)
- 397 Cape Holly *Ilex mitis* (Holly)
- 398 Silky Bark *Maytenus acuminata* (Spike Thorn)
- 414 Cape Saffron *Cassine peragua* (Spike Thorn)
- 418 Spoonwood *Cassine schinoides* (Spike Thorn)
- 422 White Pear *Apodytes dimidiata* (White Pear)
- 451 Cat-thorn *Scutia myrtina* (Buckthorn)
- 513 Hard Pear *Olinia ventosa* (Hard Pear)
- 570 Assegai *Curtisia dentata* (Dogwood)
- 578 Cape Beech *Rapanea melanophloeos* (Myrsine)
- 611 Bladder Nut *Diospyros whyteana* (Ebony)
- 615 Fine-leaf Ironwood *Chionanthus foveolatus* (Olive)
- 618.2 Ironwood *Olea capensis subsp. macrocarpa* (Olive)
- 670 Tree Fuchsia *Halleria lucida* (Snapdragon)
- 710 Rock Alder *Canthium mundianum* (Onionwood)

### Found in Fynbos:

- 20 Mountain Cedar *Widdringtonia nodiflora* (Cedar Family)
- 72 Wild almond *Brabejum stellatifolium* (Sugarbush)
- 77 Silvertree *Leucadendron argenteum* (Sugarbush)
- 78 Peninsula Conebush *Leucadendron strobilinum* (Sugarbush)
- 84 Green Tee Pincushion *Leucospermum conocarpodendron subsp. viridum* (Sugarbush)
- 86 Wagontree *Protea nitida* (Sugarbush)
- 90.5 Black-beard Sugarbush *Protea lepidocarpodendron* (Sugarbush)
- 91.1 Green Sugarbush *Protea coronata* (Sugarbush)
- 94.2 Common Sugarbush *Protea repens* (Sugarbush)
- 99 Cape Sumach *Osyris compressa* (Sandalwood)
- 221 Blossom Tree *Virgilia oroboides subsp. oroboides* (Pea)
- 225 Water Blossom Pea *Podalyria calyptata* (Pea)
- 225.8 Leafless Fountainbush *Psoralea aphylla* (Pea)
- 302.1 September Butterflybush *Polygala myrtifolia* (False Pea)
- 377.1 Lance-leaf Taaibos *Searsia angustifolia* (Mango)
- 383.2 Blue Kunibush *Searsia tomentosa* (Mango)
- 385.2 Glossy Currant *Searsia laevigata* (Mango)
- 388.1 Glossy Currant *Searsia lucida forma elliptica* (Mango)
- 394 Wild Currant *Searsia tomentosa* (Mango)
- 398 Mountain Maytenus *Maytenus oleoides* (Spike Thorn)
- 399 Common Spike Thorn *Gymnosporia buxifolia* (Spike Thorn)
- 453.1 Box Hardleaf *Phyllica buxifolia* (Buckthorn)
- 494 Wild Peach *Kiggelaria africana* (Wild Peach)
- 565 Coast Cabbage Tree *Cussonia thyrsiflora* (Cabbage Tree)
- 572 Water Heath *Erica caffra* (Heath)
- 603.1 Blueberry Bush *Diospyros glabra* (Ebony)
- 616 Cape Ironwood *Olea capensis subsp. capensis* (Olive)
- 627 Wild Olive *Olea europaea subsp. africana* (Olive)
- 733a Camphor Bush *Tarchonanthus littoreus* (Daisy)
- 736.1 Bush Tick-berry *Chrysanthemoides monilifera* (Daisy)

## DRAGONFLIES AND DAMSELFLIES

There is no official list: these species are suspected of perhaps occurring in the area, with records from the Cape Peninsula and Cape Flats. It would be nice if someone could survey the species in the area.

### Dragonflies:

- Clubtail Family
  - Rock Hooktail *Paragomphus cognatus*
- Cruiser Family
  - Chestnut Cruiser *Syncordulia venator*
- Hawker Family
  - Friendly Hawker *Aeshna miniscula*
  - Stream Hawker *Aeshna subpupillata*
  - Blue Emperor *Anax imperator*
  - Orange Emperor *Anax speratus*
- Skimmer Family
  - Broad Scarlet *Crocothmis erythraea*
  - Little Scarlet *Crocothmis sanguinolenta*
  - Blacktail Skimmer *Nesciothemis farinosa*
  - Strong Skimmer *Orthetrum brachiale*
  - Twostripe Skimmer *Orthetrum caffrum*
  - Epaulet Skimmer *Orthetrum chrysostigma*
  - Julia Skimmer *Orthetrum julia*
  - Alto Rouge *Orthetrum rubens*
  - Nomad *Sympetrum fonscolombii*
  - Redvein Dropwing *Trithemis arteriosa*
  - Dorsal Dropwing *Trithemis dorsalis*
  - Navy Dropwing *Trithemis furva (= risi)*

### Damselflies:

- Bluet Family
  - Swamp Bluet *Africallagma glaucum*
- Bluetail Family
  - Common Bluetail *Ischnura senegalensis*
- Citril Family
  - Common Citril *Ceriagrion glabrum*
- Malachite Family
  - Conspicuous Malachite *Chlorolestes conspicuus*
  - White Malachite *Chlorolestes umbratus*
- Sprite Family
  - Springwater Sprite *Pseudagrion caffrum*
  - Mountain Sprite *Pseudagrion draconis*
  - Cape Sprite *Pseudagrion furcigerum*
  - Kerstens Sprite *Pseudagrion kersteni*
- Stream Damsel Family
  - Goldtail *Allocnemis leucostricta*
- Threadtail Family
  - Sooty Threadtail *Elatoneura frenulata*

Source: Tarboton<sup>2</sup>

## BUTTERFLIES

→ vagrants; ♀ aliens

### Acraea Family

Garden Acraea *Acraea horta* 20

### Brown Family

Table Mountain Beauty *Aeroptes tulbaghia* (= *Meneris*) 8

Rainforest Brown *Cassionympha cassius*

Cape Autumn Widow *Dira clytus clytus*

Sand Dune Widow *Tarsocera cassina* 15

### Copper Family

Aranda Copper *Aloeides aranda*

Streaked Copper *Aloeides pierus* 154

Mountain Copper *Aloeides thyra thyra* 148

Common Hairtail *Anthene definita definita* 129

Topaz Blue *Azanus jesous jesous* 144

Dicksons Bronze *Cacyreus dicksoni*

Bush Bronze *Cacyreus lingeus lingeus* 133

Geranium Bronze *Cacyreus marshalli* 134

Water Bronze *Cacyreus palemon palemon*

Mocker Bronze *Cacyreus virilis*

Orangeband Protea *Capys alphaeus* 124

Cape Blue *Eicochrysops messapus messapus* 141

Longtail Pea Blue *Lampides boeticus* 138

Cottrells Brown Blue *Lepidochrysops variabilis* 162

Common Pea Blue *Leptoles pirithous*

Western Sorrel Copper *Lycaena orus*

Foxtrot Copper *Phasis thero thero* 126

Dark Opal *Poecilmitis nigricans* 160

Water Opal *Poecilmitis palmus*

Sooty Blue *Zizeeria knysna*

Gaika Blue *Zizula hylax* 146

### Monarch Family

African Monarch *Danaus chrysippus* 1

### Painted Lady Family

White-barred Charaxes *Charaxes brutus natalensis* ♀

Common Diadem *Hypolimnas missipus* 61 →

Painted Lady *Vanessa cardui* (= *Cynthia*) 77

### Skipper Family

Common Hottentot *Gegenis niso niso* 232

Dark Hottentot *Gegenis pumilio*

Barbers Ranger *Kedestes barberae* bunta

Grassveld Sylph *Metisella malgacha malgacha*

Goldspott Sylph *Metisella metis metis* 226

Blackbrand Swift *Pelopidas mathias*

Whitebrand Swift *Pelopidas thrax inconspicua*

Asterodia Sandman *Spialia asterodia*

Common Sandman *Spialia diomus ferax*

Dwarf Sandman *Spialia nanus*

Mountain Sandman *Spialia spio* 225

Palm-tree Nightfighter *Zophopetes dysmephila* ♀

### Swallowtail Family

Citrus Swallowtail *Papilio demodocus demodocus* 213

### White Family

Brownvein White *Belenois aurota* 198 →

African Clouded Yellow *Colias electo electo* 170

African Migrant *Catopsilia florella* 171

Brown Playboy *Deudorix antalus* 97 (= *Virachola*)

Common Dotted Border *Mylothris agathina*

Cabbage White *Pieris brassicae* ♀

Meadow White *Pieris helice helice* (= *Pontia*) 206

Possibilities (not found at Tokai, but in surrounding Peninsula areas):

### Brown Family

Table Mountain Brown *Pseudonympha hippia*  
(= *Cassionympha*)

Silverwash Brown *Pseudonympha magus*

### Copper Family

Tintinkie Blue *Brepiduim metophis*

Cape Blackeye *Gonato myrina* (= *Leptomyrina lara lara*) 122

Monkey Blue *Lepidochrysops methymna methymna*

Trimens Blue *Lepidochrysops trimeni*

Cape Black-eye *Leptomyrina lara*

Dwarf Blue *Oraidium barberae* 145

Vivid Blue *Tarucus thespis*

Peninsula Skolly *Thestor yildizae*

### Skipper Family

Dickson's Sylph *Tsitana dicksoni*

Tulbagh Sylph *Tsitana tulbaghia*

Source: Eugene Conradie, Chris Botes, Claasens, Migdoll, Pennington, Claasens & Dickson, SABCA.

## SCORPIONS

At this stage only the Cape Creeping Scorpion is recorded from Tokai: the others are possibilities.

### Stinger Family Buthidae

Cape Thicktail Scorpion *Parabuthus capensis*

Killer Thicktail Scorpion *Parabuthus granulatus*

Narrow Thicktail Scorpion *Uroplectes lineatus*

Dappled Thicktail Scorpion *Uroplectes variegatus*

### Crusher Family Ishnuridae

Cape Creeping Scorpion *Opistacanthus capensis*

### Burrowing Family Scorpionidae

Cape Hissing Scorpion *Opisthophthalmus capensis*

Mace Hissing Scorpion *Opisthophthalmus macer*

It may be worthwhile looking in the kloof forests for Newlands Thicktail Scorpion *Uroplectes insignis*, a Peninsula endemic, currently known only from Kirstenbosch and Newlands.



Felicity Grunhling

Western Sorrel Copper

## THREATENED PLANT SPECIES OF SAND FYNBOS

This is not a complete list, only those species on the IUCN Red List of plants threatened with extinction that are known from the Cape Flats within 2 km of the Tokai in Sand Fynbos are listed here. This list excludes species of the Sandstone and Granite Fynbos sections of the Tokai Park.

### Extinct in the Wild (and re-established at Tokai)

Showy Heath *Erica turgida* (Heath Family)  
Whorled Heath *Erica verticillata* (Heath)

### Critically Endangered with Extinction

Woolly Arctotis *Arctotis angustifolia angustifolia* (Daisy Family)  
Flats Silkybush *Diastella proteoides* (Sugarbush)  
Flats Conebush *Leucadendron floridum* (Sugarbush)  
Cape Flats Conebush *Leucadendron levisanus* (Sugarbush)  
Acacia-leaf Conebush *Leucadendron macowanii* (Sugarbush)  
Rib Clockflower *Moraea angulata* (Iris)  
Rondevlei Spiderhead *Serruria foeniculacea* (Sugarbush)  
Trident Spiderhead *Serruria trilopha* (Sugarbush)  
Shy Watsonia *Watsonia humilis* (Iris)

### Endangered with Extinction

Slack Buchu *Agathosma glabrata* (Buchu Family)  
Hairy Bobbejaantjie *Babiana villosula* (Iris)  
Iron Heath *Erica ferrea* (Heath)  
Cinnamon Sambreeltjie *Hessea cinnamomea* (Amaryllis)  
Creeping Brightfig *Lampranthus reptans* (Vygie)  
Peninsula Ganna *Lebeckia meyeriana* (Pea)  
Sand Ganna *Lebeckia plukenetiana* (Pea)  
Heartleaf Cattailbush *Microcodon capitatus* (Scroph)  
Shorthorn Muraltia *Muraltia brevicornu* (Falsepea)  
Ruby Storksbill *Pelargonium ellaphieae* (Geranium)  
Fascicle Fountainbush *Psoralea fascicularis* (Pea)  
Longflower Button *Senecio foeniculoides* (Daisy)  
Wynberg Spiderhead *Serruria cyanooides* (Sugarbush)  
Cape Star *Spiloxene canaliculata* Channell (Cape Star)  
Flats Wingstyle *Stylapterus fruticosus* (Penny)

### Vulnerable to Extinction

Bolus Cinderella Orchid *Acrolophia bolusii* (Orchid Family)  
Purple Disa *Disa atrorubens* (Orchid)  
Shy Satinflower *Geissorhiza humilis* (Iris)  
Flats Satinflower *Geissorhiza tenella* (Iris)  
Clay Indigo *Indigofera psoraloides* (Pea)  
Yellow Soldier *Lachenalia reflexa* (Daffodil)  
Lanky Stringbark *Lachnaea capitata* (Stringbark)  
Loneflower Stringbark *Lachnaea uniflora* (Stringbark)  
Twotone Brightfig *Lampranthus bicolor* (Vygie)  
Threadleaf Brightfig *Lampranthus filicaulis* (Vygie)  
Hairless Brightfig *Lampranthus glaucus* (Vygie)  
Orange Mountain Dahlia *Liparia splendens splendens* (Pea)  
Head Blombos *Metlasia capitata* (Daisy)  
Marsh Pagoda *Mimetes hirtus* (Sugarbush)  
Sticky-stem Uintjie *Moraea elsiae* (Iris)  
Midday Clockflower *Moraea versicolor* (Iris)  
Thistle Sugarbush *Protea scolymocephala* (Sugarbush)  
Cluster Spiderhead *Serruria glomerata* (Sugarbush)  
Flat Leaffig *Skiatophytum tripolium* (Vygie)  
Lax Bloodroot *Wachendorfia brachyandra* (Bloodroot)

### Data Deficient: taxonomy uncertain

Largewing Brightfig *Lampranthus aduncus* (Vygie Family)

Source: Purcell, Pat Holmes, Sybill Morris, IUCN Red List.

## Profile: Chris Botes Manager Tokai



**ABRAHAM CHRISTOFFEL BOTES**, born in Gboko district north of Kano in Northern Nigeria on 26 February 1947.

Married to Daleen Botes in Nov 1981;  
4 children and 6 grandchildren.

School years: Matriculated at Langenhoven Hoerskool in Riversdale in 1964. Previously also at Vaalheuwel Farm School (near Steinkopf, Namakwaland) in 1953, then Springbok (1954-6), Albertinia (1957-8) and then Riversdale (1959-1964).

Army training in Oudtshoorn and Walvis Bay in 1965.

### Career:

Joined the Department of Forestry in 1966 at Sabie in the regional office;  
1967 Student forester for practical plantation work, Dept of Forestry at Sabie and Witklip Plantation (near White River, Mpumalanga);  
1968-9 Saasveld Forestry College for a Forestry diploma;  
1970-1 Tokai State Forest as assistant Forester;  
1971-4 Cecilia State Forest as Forester in Charge;  
1975-9 Swellendam State Forest;  
1980 Nyalazi State Forest;  
1981-3 Nelshoogte State Forest as Silviculture Forester;  
1984-6 Brooklands State Forest near Sabie;  
1986-90 De Hoek State Forest as Forester in Charge;  
1991-3 Long Tom State Forest;  
1993-8 Tokai Plantation as SAFCOL Plantation Manager;  
1999-2005 Ecotourism Manager for SAFCOL / MTO;  
2005- Senior Section Ranger for SANParks on 1 April 2005 when Tokai and Cecilia plantations were incorporated into the Table Mountain National Park.  
Must retire from SANParks in February 2012.

Has a keen interest in trees, birds, insects and scorpions.

Loves touring in Northern Cape (especially Richtersveld and Namaqualand) and in Namibia. Should love to tour through Morocco again, as well as for the first time through Israel, Afghanistan and Pakistan.

**ANIMAL SPOOR:**

**GETTING TO KNOW THE INHABITANTS OF TOKAI**

The sandy soils of lower Tokai are ideal for deciphering animal tracks. Unfortunately, horses and cycles disturb any tracks, so the best time for seeing spoor (and indeed their creators) is the early morning after rains. Dry soils do not retain a good impression.

Naturally the first thing to learn is how to identify dog spoor. This will be by far the majority of tracks that you will encounter. And as they will be cast by Jack Russells and Great Danes and everything between, they will also be the most variable of the spoor and scats that you will encounter.

Dog tracks have four toes and a single indent (two basal lobes) at the base of the print, with claws clearly visible. Smaller dogs are easily confused with Porcupines, mongeese and the Cape Fox.

Cat tracks have four toes, with two indents (three basal lobes) and claws not visible. Unfortunately, domestic cats confuse the issue, otherwise it would be relatively easy to distinguish Caracal from Small Spot Genets, based on size alone.

Cape Clawless Otters and Baboons have 5 pads, and relatively long prints, often described as hand-like.

Only the small buck known from Tokai is the Grysbok, but look out for the other buck, which are dealt with elsewhere in this issue. The only other buck known is the Sambar, which has much bigger prints.

Digging is usually by Porcupine or Baboons. Beare though that dogs often dig where Mole Rats have been active, and some species like Jack Russells dig everywhere. Porcupines leave pointy scratch marks, whereas baboons seldom leave claw marks. Baboons prefer Wild Hairy Lettuce and Suurings, whereas Porcupines appear particularly fond of Bloodroot and other bulbs – look out for the plant remains. Consequently, Baboons leave large areas “rotovated”, whereas Porcupines are far more targeted, making small holes along a run. Porcupines often leave quills behind, although quills are avidly collected so that they are seldom found in Tokai.

Golden Moles leave runs of raised soil, whereas Cape Dune Molerats leave large mounds of sand lozenges, and never cause raised runnels. Whereas moles eat insects and worms, molerats eat bulbs and roots, browsing plants from below ground and dispersing bulbils.

**Tips for General Spoor identification.**

**Padded (4 or 5 toes and one base) with claw marks visible, 2 basal lobes**



- Spoor large (>60mm):
- Spoor medium (40-65mm)
- Spoor medium small (20-45mm)
- Spoor small (5-30 mm)

**Dog Family, Hyaena Family, Mustelid Family (Otters, Honey Badger, Weasel) or Viverid Family (Mongeese) + Cheetah + Porcupine**  
 Hyaenas, Cheetah, Wild & Domestic Dog  
 Mustelids, Porcupine, Foxes & Jackals  
 Mongeese, Suricate, Weasel, Polecat  
 Mice, Rats, Squirrels, Shrews, Hedgehog

**Padded (4 toes and one base) with no visible claw marks, 3 basal lobes**



- Spoor large (>90mm)
- Spoor medium (40-65mm)
- Spoor medium small (20-45mm)

**Cat Family + Viverid Family (Genets)**  
 Lion, Leopard  
 Caracal, Serval  
 Wild & Domestic Cats, Genets

**Padded (3 thin toes)**

Spinghare + Aardvark

**Hands & feet (large palm with fingers/toes)**

Primate Family + Cape Clawless Otter + Dassies

**Hooves – cloven (= 1 pair) – Artiodactyl Family (Cows, Buck, Camel, Pigs, Giraffe)**



Hoof large (> 80mm)

Hoof medium (40-70mm)

Hoof small (20-45mm)

Giraffe, Camel, Cow, Buffalo, Eland, Hartebeest, Tsesebe, Roan, Sable, Gemsbok, Wildebeests, Waterbuck, Sitatunga, Bushpig, Warthog, Rhebuck, Reedbucks, Lechwe, Sheep, Goat, Impala, Gazelles, Springbok, Bushbuck, Kudu, Nyala, Blesbok, Bontebok, Duikers, Grysbok, Steenbok, Klipspringer, Oribi, Suni, Dikdik.

**Hooves – single – Perissodactyl Family (Horses, Donkeys and Zebras)**



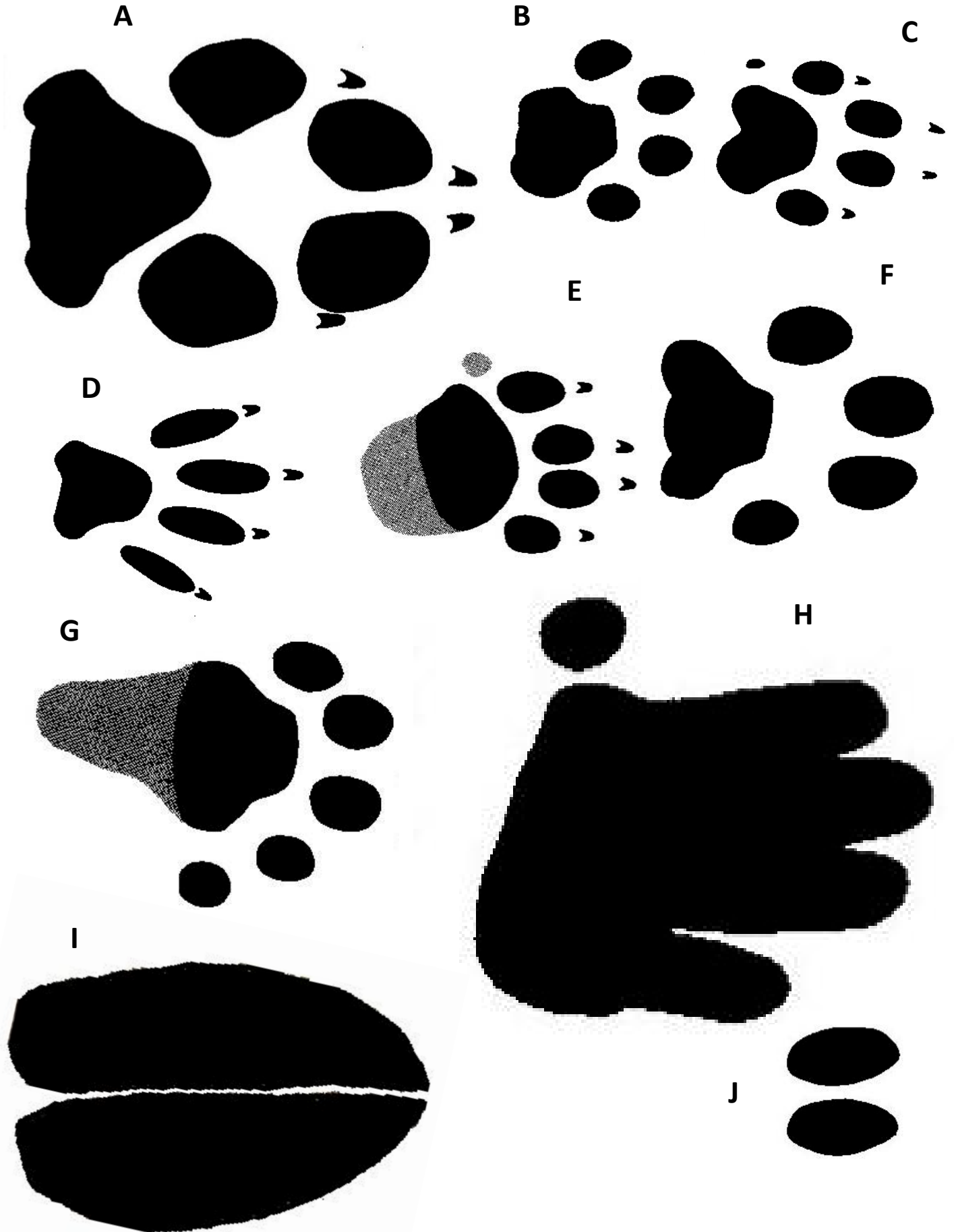
**LARGE GAME (>250mm) - pad plus:**

- 0 toes = **Elephant**
- 3 toes = **Rhinos** (Perissodactyl)
- 4 toes = **Hippo** (Artiodactyl)

*(Beware young animals have smaller prints!)*

COMMON SPOOR AT TOKAI (life size)

A - Dog (Labrador); B - Lesser Spot Genet; C - Cape Grey Mongoose; D - Water Mongoose; E - Porcupine (front foot);  
F - Caracal; G - Cape Clawless Otter; H - Baboon (front foot); I - Sambar; J - Klipspringer



## IDENTIFICATION TIPS

### SMALL BUCK

Four small buck are regularly seen on the Peninsula, and walkers should be on the lookout for them at Tokai. To date only the Grysbok has been recorded at Tokai, but the other species will probably colonize the area in the future.

Much is made about identifying buck from the horns, the curvature of the back, and the hair colour. However, one seldom gets a chance to observe the species closely: usually all one sees is a glimpse of a backside. Fortunately, that is all that you need to identify the species, as most buck use their rear ends for signalling, both to mates and young, and also to predators.

In all our species, only the males have erect, straight horns. In all cases, faeces are cylindrical pellets with rounded and pointed opposite ends, (round pellets are probably hares.) Recent pellets are smooth and black or dark brown, becoming paler and more fibrous with age.

Let us first exclude the **Klipspringer** from the remainder. These buck are found in rocky areas and typically stand around observing people from rocky perches where they feel relatively safe, often quite close by. They are especially shy when dogs are around and are unlikely to be seen when you are walking your dogs. You are likely to first notice them by their loud high-pitched alarm call, which they make to advertise to predators that they are being observed. They move around in pairs, often with 1-2 young. The spoor are pairs of oval impressions, unique and easy to identify – beware of walking sticks, but these are never paired. Latrines are large, up to 1.5 m across, and 20-30mm deep. They often have midden plants (Solanum, Mesembryanthemum, and others) associated with them.

Please report sightings of Klipspringer to park rangers.

The other three buck are usually seen in flight. The Duiker has two black, vertical stripes alongside its tail. The Steenbok has a reddish back, bum, but the undersides are pure white and the tail hardly noticeable. The Grysbok has a uniformly reddish brown back, bum, bushy tail and a slightly paler underside. So if you see a buck and it is not uniformly red-brown, then you have made a new record: please kindly inform the reserve manager.

All three species are extremely tolerant of people and dogs. Their first reaction is to freeze and squat, but they will escape by running with a zig zag motion and dropping suddenly into a squat when pursued. If not followed they will stop at intervals and watch over their shoulders.

The **Steenbok** is the smallest buck, although not much different from the Grysbok. They are solitary animals. They browse (70-99%) and graze (1-30%), being very selective feeders, occ. digging bulbs. Both urine and faeces are covered over with sand, and thus middens are rarely encountered: they tend to be made on the edges of territories. The large ears have dark interior "fingers". The eyes have white rings - the dark marks in front of the eyes are pre-orbital glands used for marking. When flushed they dash off with head at shoulder height, zig-zagging with great bounds every few strides, before dropping into cover.

**Grysbok** have coats with long white hairs, giving a grizzled appearance. They are solitary or in pairs, being predominantly browsers, but are fond of vines, Karee-rhus and Wattles. They defecate in exposed middens, up to 1 m across and 100 mm deep, usually in or near dense cover, and shared by all individuals in the area. The large ears have pale interior "fingers". The eyes have dark, hairless rims, extending to the pre-orbital glands. The hind legs are long, giving a hunched appearance. When flushed they dash off with head lower than shoulder height, without bounding and with minimal zig-zagging, before dropping into cover. Apart from extending into the eastern Cape grasslands, it is almost a Fynbos endemic.

The **Common Duiker** is the same height as the previous two species, but twice as heavy. It is usually solitary, but seen in pairs around mating time. They are almost exclusively browsers, as well as digging for bulbs (and eating small animals!); they eat many timber and alien plant species, including 'horrible' species such as Bugweed and Bramble. Latrines are not maintained, with droppings spread out throughout the territory, although most common around resting sites. The forehead is darker than the rest of the body, with the black nose extending to between the eyes, culminating in a black tuft of hairs between the ears. The front of the forelegs are dark. The back is level.

Tracks of the three species are very similar, being rounded behind with a pointed front, about 25-35 mm long, reaching 40 mm in the Common Duiker. Steenbok tracks are the same size, but narrower with very much more pointed tips.

All species mark bushes with black resin from eye glands – these are territory markers.

Some time in the future **Grey Rhebuck** may recolonize Tokai (they have been reintroduced onto the Peninsula at Cape of Good Hope in 2009), but they are usually quite shy of people and the Tokai area is too full of paths. They are usually first noticed by their shrill alarm call, and are usually observed in the distance bounding away with a bouncy ("rocking horse") gait, with their white fluffy under-tails held high. They typically move around in family herds of one horned male and several hornless females. They are grazers – eating grass – and do not browse.

Hopefully we will never encounter the **Himalayan Tahr**. Only the **Sambar**, from India, is present, but being nocturnal and extremely shy. Only spoor is normally encountered. They rest during the day in thick bush in the wetlands, and I have yet to meet anyone who has seen a live one at Tokai.

Quick Key to the small Buck on the Peninsula. Apart from mass (in kg), all measurements are mm.

	Klipspringer	Steenbok	Grysbok	Duiker
<i>Height</i>	550	560	570	560
<i>Mass</i>	10-18	9-13	10-14	15-21
<i>Rear view</i>	Uniformly grey	Reddish, white below	Uniformly grey-red	Two black stripes outside tail
<i>Footprint: shape</i>	Oval	Narrow, sharply pointed	Narrow, heart	Heart
<i>Length</i>	15-20	28-38	25-35	25-40
<i>Pellet length</i>		10	10	10-12
<i>Latrines</i>	Yes	No, buried	Yes	No, scattered



Anton Pauw Table Mountain A natural history



## Aliens of Tokai:

# French Broom *Genista monspessulana* (Pea Family)

**Also:** Soft Broom, Canary Broom, Montpellier Broom

**Synonyms:** *Cytisus canariensis*, *C. candicans*,  
*C. monspessulanus*, *C. racemosus*, *Teline monspessulana*

**Diagnostic features:** **A yellow pea flower with trifoliolate leaves.** An upright, evergreen shrub, to 3 m tall. Stems round, covered with silvery, silky hair. Leaves usually with 3 blades, 10-20 mm long, sparsely hairy. Flowers yellow, pea-like, clustered in heads of 4-10, standard hairless, keel thinly hairy. Pods 30 mm long, shaggy hairy and compressed between seeds, dark when mature. Seeds black with a small cream ant-fruit.

Occasionally confused with indigenous peas with trifoliolate leaves, viz *Crotalaria* (which has sepals with equal calyx teeth) or *Lotononis* (which has 1 long and 4 sepals joined with short teeth), but with the 3 front sepals united except for their tips, it is quite different from other erect Peninsula peas with united stamens. It is quite distinct from and unrelated to Spanish Broom, the other serious pea invader.

Flowering is from September to December, commencing at 2-3 years of age when plants are about 0.5 m tall. Fruit ripen in December to February. Growth is from October to December. Resources move up to the tips from September to November, and down to the roots from November to February.

**Found:** Newlands, Kirstenbosch, Orangekloof, Klein Constantia. A serious problem in California, Australia and New Zealand.

**Found at Tokai:** In sand: Scattered plants in A15, A14c and A18. Very dense stand over 10X10m in extent in A13a. On granite: Common in southwest yard of the Manor House.

In California, it is common on coastal plains, mountain slopes, and in disturbed places such as river banks, road cuts, and forest clearcuts, but it also colonizes grassland and open canopy forest. It grows in varied soil moisture conditions, prefers sandy soils, but is happy on alkaline soils (pH 8). Seedlings are not very tolerant of frost.

**Origin:** Native to Mediterranean countries and the Azores. Introduced as an ornamental. It spreads via prodigious seed production - over 8,000 seeds a year. Pods open explosively, flinging seeds to 4 m distant, with seeds further dispersed by ants, birds, mammals, water and maintenance machinery. It coppices readily from the rootstock after cutting and after cooler fires.

**Why is it a problem?:** It displaces native plants. It is a strong competitor and can dominate a plant community, forming dense, monospecific stands. It grows rapidly: in California it has overwhelmed plantation pines.

The foliage (especially when young) and seeds contain a variety of quinolizidine alkaloids, which are toxic. Ingestion by livestock can cause staggering followed by paralysis; in horses it can cause digestive disorders. In California it is believed to be responsible for reducing arthropod populations by one-third in infested areas.

It burns readily, increasing both the frequency and intensity of fires. It establishes a dense (460-6700 seeds per m<sup>2</sup>), medium-lived (5 years) seedbank, making eradication difficult.

**Control:** Resprouting must be controlled, survival is highest in wetter seasons. Seedbanks require monitoring, and annual follow-up control for 10 years, followed by every two-years afterwards, less frequently in natural areas with intact vegetation.

Work from less dense to most dense infestations. Hand weed light infestations keeping natural plants intact. Dense stands and larger areas require fire and chemical control to augment or replace hand pulling.

Weed wrenches are effective where inexpensive, long-duration labour is dedicated to broom removal. However, soil



Tony Rebelo

disturbance tends to increase germination and requires monitoring.

For cutting plants, timing and height of cutting are critical. Cutting must be at ground level to limit resprouting.

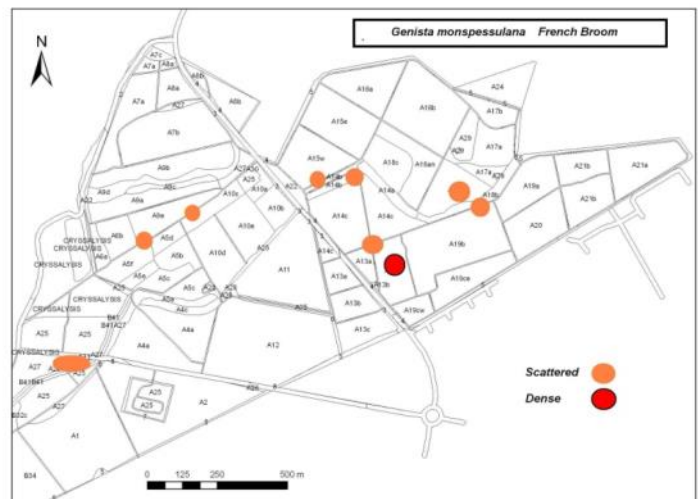
Mulching suppresses seedlings germination in disturbed areas.

Prescribed burns are effective if reburning to kill coppice and seedlings is done within 2-4 years. A propane torch or flame thrower is effective on seedlings up to 0.2m tall. A hot, but not flaming, setting that causes scorching without burning, results in death.

A solution of 3 percent glyphosate, with surfactant, sprayed on foliage until wet is effective, but resprouting is common. Triclopyr ester (25 percent), in oil (75 percent) as a low-volume basal bark application with a wick is effective: a spot on the main stem of 2 or 3 drops, within 80 mm of the ground gave 99% percent kill. Chemical methods should be used during periods of active growth after flower formation but before seed release.

Insect biocontrol agents have been tested for use on Scotch broom in Australia and New Zealand, but most also feed on Lupins so are unsuitable for release. Goats have been successfully used (heavy grazing for 5 years) in New Zealand.

At Tokai, pulling is easy in the sands. Plants are pulled before they set seed. Following the burn, hundreds of seedlings per m<sup>2</sup> emerged from the dense clump in A13.



Flora of Tokai:  
**Whorl Heath *Erica verticillata***  
(Heath Family)

**IUCN Red List Status: *Extinct in the Wild***

The Whorl Heath occurred naturally on the Cape Flats, from around Black River, Wynberg, Kenilworth and Zeekoevlei. Its habitat was seasonally damp, acidic, sandy soils near rivers and wetlands. It flowered during January to March, when little else flowers on the Cape Flats.

It was wiped out by agriculture in its wetlands, urban development that canalized and developed the wetlands, and collecting as a cut flower. By the 1950s, it was extinct in the wild. The last herbarium specimen was collected from the wild in 1908. It therefore probably went extinct during this period.

*Erica verticillata* is a strong growing, hardy shrub reaching up to 3 m tall (1.5m tall at 10 years). Mauve-pink, tubular flowers are on the sturdy branches. These are arranged in neat ranked whorls that form attractive flowerheads. It attracts sunbirds. Flowering is during late summer and autumn. Its diagnostic features are tubular flowers, 15-20 mm long, mauve-pink and finely hairy, with flowerheads made up of many short side-branches each bearing 4 flowers.

In the 1980s Deon Kotze, an *Erica* horticulturist at Kirstenbosch, tried to find remnant populations. He made photocopies of herbarium sheets, to help him in the field. A Kirstenbosch scholar, David von Well, recognised a plant growing at Protea Park in Pretoria in 1984 from these sheets, the lone survivor of a stand thought to be planted in the 1940s. Dr Ted Oliver at the Compton Herbarium confirmed it to be *Erica verticillata*. David Cooke, temperate house manager and *Erica* enthusiast at Kew Royal Botanical Gardens, London, reported in 1984 that Kew had some collections (some had been "discontinued") grown from seed sent to them by Mr. Harry Wood, curator of Fernkloof Nature Reserve in 1961, who had a plant in his garden. Some of these lines have since been found to be sterile hybrids.

In 1990, Adonis Adonis, a foreman at Kirstenbosch, found a large, mature specimen growing in a clearing in the Braille Trail. This was probably a remnant seedling from the old *Erica* collections that were grown on terraces nearby.

On proofing a report on the progress of establishing these "lines" at Kirstenbosch, Ted Oliver mentioned that he had seen it growing in 1967 in the botanical gardens at Belvedere Palace Gardens in Vienna. Contact was made with Dr. Michael Kiehn, a researcher at the University of Vienna. After much red tape, samples of two different clones ("red, lax" and "pink") arrived in the diplomatic bag from Austria. These were probably collected between 1786 and 1799, by two gardeners, Francis Boos and George Scholl, who collected many Cape plants for Emperor Joseph. They survived the bombing of Belvedere Palace during the Second World War, possibly because plants were overwintered in an underground "Erdhouse", but also because duplicate collections were maintained.

There are thus five clones, but three of these appear to be sterile. More plants have been traced to the Tresco Botanical Gardens, commercial nurseries in Germany and California and the British Heather Society. However, some of these may be duplicates or hybrids and genetic work is being undertaken.

All these clones have been successfully propagated from cuttings at Kirstenbosch and sold from the Garden Shop and at the Plant Fair. *Erica verticillata* is one of the easiest ericas to grow. Plants are reproduced from cuttings as they do not readily produce seed in the gardens.

In 1994 Dalton Gibbs, Rondevlei Reserve Manager, planted 10 plants of the Pretoria clone in the reserve. Because its correct habitat was not known these were spread out: one survived, and more plants were established in similar sites.

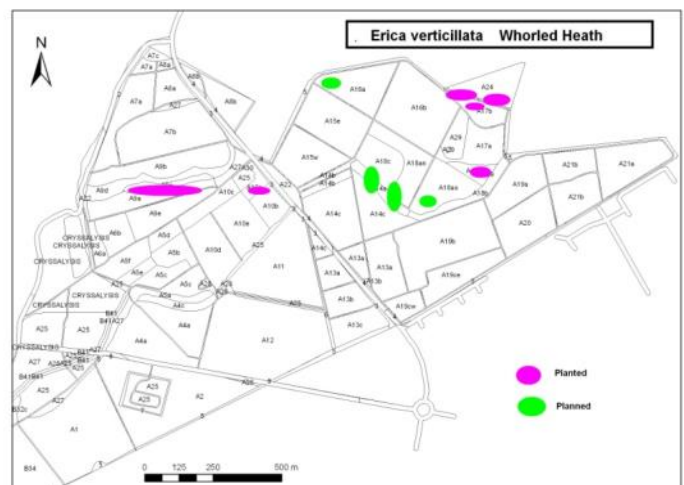


Although visited by Southern Double-collar Sunbirds, Carpenter Bees and Hawk Moths, they did not set seed. When the Kirstenbosch line was also planted, seed was set.

The species has since been introduced into both Kenilworth and Tokai. At Tokai initial plantings in the Soetvlei Valley were in areas too wet and were unsuccessful. They have done very well in the Palmiet Wetland, despite a fire belt having twice been put through the stand, killing many plants. Trials are underway in the Prinskaasteel Wetland to establish ideal habitat needs: Kirstenbosch, Vienna and Pretoria clones are growing well, apart from a mishap where alien spraying killed lots of plants in 2010. They have also been introduced to the Semple Wetland.

Under IUCN standards, the plants will have to survive in the wild for three generations before being taken off the "Extinct in the Wild List". As a generation is about 15 years in Fynbos, we can expect – if all goes well – this in 2054.

Source: [www.plantzafrica.com](http://www.plantzafrica.com), A. Hitchcock, Veld & Flora



Fauna of Tokai:

## Caracal *Caracal caracal* (Cat Family)

Also: African Lynx, Caracal Lynx, Red Lynx, Rooikat

Synonyms: *Felis caracal*

The "African Lynx" is easily identified among southern African cats by its tufted ears. It is a reddish-tan colour, with long legs, and a relatively short, bushy tail, tinged black. Southern forms have more guard hairs, giving the coat a greyish sheen. The back of the ears are black. The young are paler with faint spots.

Caracal is thought to derive from the Turkish *garah-gulak* – "black ear." There are two subspecies: the nominate occurs on the Peninsula, and subsp. *damarensis* occurs from Angola to northern Cape and Botswana.

Mass is 12-20 kg for males, 8-13 kg for females; Length is 610-910 mm (head and body), with a 260-340 mm long tail; Height at shoulders is 400-450 mm. Some 1-4 kittens, born in summer in nest of hair and feathers, after 62-81 day gestation, eyes open at 8 days, ears folded back for 14-30 days, lactation 4 months. Toothless at birth, all teeth are present at 50 days, and adult dentition starts at 4 months. Maturity is at 7-10 months. May live for 19 years.

Guard hairs are twice as long in winter as in summer.

In the Cedarberg Caracals are the same size as the Leopards. On the Peninsula it is the largest remaining predator (the last Leopard was seen in 1937 by Daniel Bosman on Little Lions Head, the last Cape Lion recorded before 1700).

Mainly nocturnal, and often active at twilight, but also seen during the day. Hot weather is avoided. Solitary and territorial, with male and female territories overlapping. Territories range from 6-310 km<sup>2</sup>., typical values being 6-12 for grasslands, 11-27 in Renosterveld, 7-27 for Strandveld, 65 for Fynbos, and 310 for Arid Savanna.

Fast over short distances, moving in long bounds. Capable of jumping vertically to over 4 m from standing. An agile climber, scaling smooth tree trunks. Capable of easily killing animals up to 40 kg, using suffocation with a neck bite. Smaller prey are killed with a bite to the neck, with hind feet raking if death is not instant. Birds are regularly taken from their nests, including up trees. Prey is stalked, cat-like, with a fast final rush to seize or slap down prey.

Small birds are eaten whole, larger birds are plucked and guts, primaries, skull and lower legs left uneaten. For mammals the guts are not eaten, and fur of larger mammals is left behind. Larger mammals are eaten via the anus, with hindquarters preferred and forequarters next; little more is usually eaten as the by the time the limbs are consumed (2-3 meals) the meat is starting to decay and is not eaten, especially in areas where they are hunted. About 0.3-0.6 kg of meat is required per day. Although most prey is very small, the larger prey items account for most of the meat consumed. Carrion is occasionally scavenged.

Prey includes anything from Duiker to small rodents, including birds and reptiles and insects. Animals up to young kudu and incubating ostriches have been recorded. Most prey is in the hare-size range, and other predators such as jackals and mongeese are taken. It will prey on sheep.

Tracks are similar to the leopard, but smaller. Typical of cats it has a doubly indented back edge on the main pad and four round pads without claw marks. Tracks measure 50-55 mm for fore feet and 45-50 mm long and 42-48 mm wide in the hind feet, the hind foot partly covering the fore track. Walking stride is 60-80 mm. The front foot has five paws, but the dew claw is well back and does not leave an imprint, although it does have a strong, heavy claw.

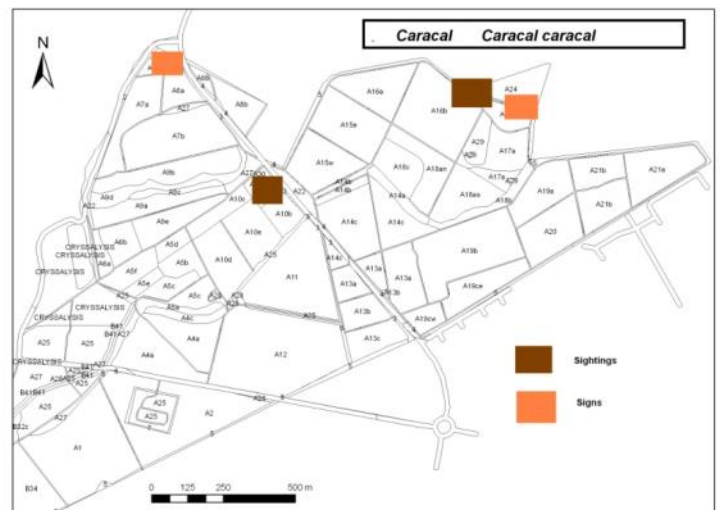


Leopard Conservation Trust

Scats are about 60 mm long, 15 mm wide, rounded at one end and pointed at the other, in boli of 10-20 mm, usually with traces of hair and fine bone fragments, occasionally turning white.

Skulls are cat-like, with large canines and few, sharp-edged cheek teeth, and a prominent crest on top of the skull towards the back. The dental formula is 3 incisors, 1 canine, 3 premolars upper jaw and 2 lower, and 1 molar. The upper molar is a minute peg. The check teeth are designed for cutting, and meat is not chewed.

At Tokai it is occasionally seen. They have been seen at the Palmiet and Semple Wetlands, and remains of kills have been found in the Stone Church Wetlands. The predominance of wetland records is probably related to lack of suitable cover in other parts of the lower Tokai. In 2010 a female raised at least two young in the Soetvlei Valley Wetlands, both ended as road kills: one in Sweet Valley Road and one on the M3.



# Application to Join or Renew Membership of Friends of Tokai Park: 2010

*For Family Membership only*

Name: \_\_\_\_\_

E-mail: : \_\_\_\_\_

Cell: : \_\_\_\_\_

Phone: : \_\_\_\_\_

& _____
& _____
& _____
& _____

Address:

I/We agree to abide by the constitution of the Friends of Tokai Park

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

- I enclose my R100 annual subscription fee
- I enclose a family annual subscription fee of R150 (2 votes)
- I enclose a Corporate Member annual subscription fee of R500

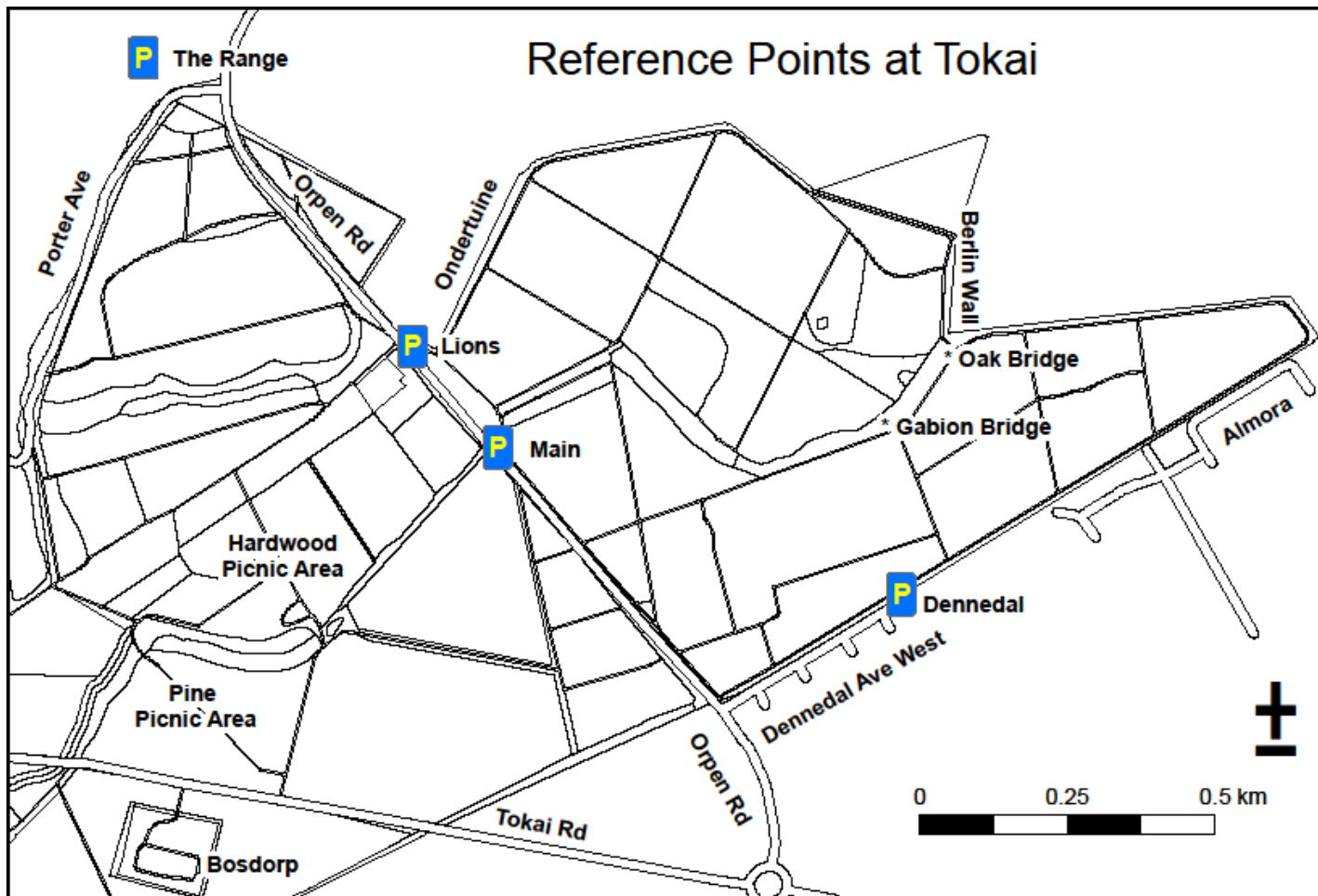
I am interested in helping with:

- |   |   |
|---|---|
| <input type="checkbox"/> Alien hacking (chainsaw, poisoning, dense infestations)                          | <input type="checkbox"/> Nursery (plants for shade, arboretum, etc.)        |
| <input type="checkbox"/> Alien pulling (light work & infestations)  | <input type="checkbox"/> Path, road, fence & signage maintenance            |
| <input type="checkbox"/> Arboretum maintenance & development  | <input type="checkbox"/> Picnic Area maintenance and education              |
| <input type="checkbox"/> Baboons  | <input type="checkbox"/> Pine plantation maintenance                        |
| <input type="checkbox"/> Education outreach   | <input type="checkbox"/> Species surveys and photography                    |
| <input type="checkbox"/> Events: Organizing and managing  | <input type="checkbox"/> TMNP Liaison                                       |
| <input type="checkbox"/> Fund raising and special projects  | <input type="checkbox"/> TMNP Visitor Assistance (admin, gates, patrolling) |
| <input type="checkbox"/> Fynbos restoration and maintenance   | <input type="checkbox"/> Transformation/Development                         |
| <input type="checkbox"/> Heritage   | <input type="checkbox"/> Wetland maintenance                                |
| <input type="checkbox"/> Newsletter and publications (brochures, maps, field guides, notice boards, etc.) | <input type="checkbox"/> Other: _____                                       |

I principally use Tokai for:

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Dog walking   | <input type="checkbox"/> Picnicking   |
| <input type="checkbox"/> Bird watching | <input type="checkbox"/> Mushrooming  |
| <input type="checkbox"/> Horse riding  | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Cycling       |                                       |
| <input type="checkbox"/> Hiking        |                                       |
| <input type="checkbox"/> Botanizing    |                                       |

I wish to make a donation of R\_\_\_\_\_ for \_\_\_\_\_



The main reference points for the Lower Tokai Park are shown above. These are primarily for arranging meeting and for access into the area. There are four main parking areas, although one can also park in Westridge Circle on the north side of the Cycle Track (not shown, but to the east) of the map above.

Parking along the roadside in Orpen Road and Tokai Road is not encouraged. It is especially important not to park near the pedestrian and horse crossings as parked vehicles obscure the view, resulting in a high risk to both those crossing the road and the vehicles travelling along it. Please only use the marked parking areas for access into the park.

Activities are unrestricted east of Orpen Road, but dogs and cycling are not allowed west of Orpen Road, with the exceptions of :

- Porter Avenue for cyclists and dog walkers, and
- Orpen Road from the Lion Parking to The Range for dog walkers.
- The southern boundary from Orpen Road to the Bosdorp, which will in time be gravelled allowing cyclists thoroughfare to the Arboretum.

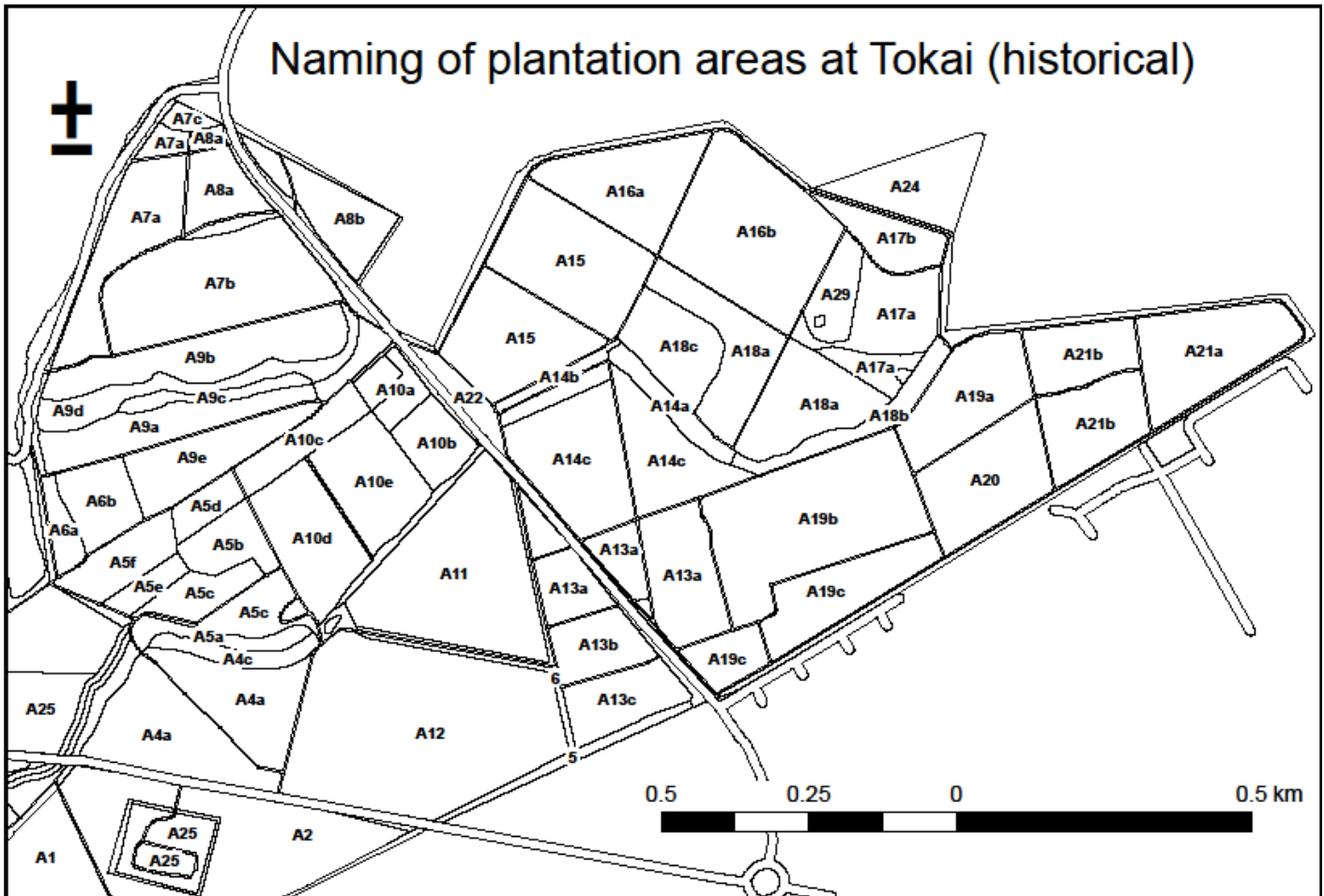
Bicycles are restricted to the gravel tracks: the main cycling areas start at the Arboretum, with the Orpen area functioning as a thoroughfare for cyclists on their way to the main area. The area is ideal for to learning to ride, but budding cyclists must remain on the gravelled pathways and central road. Off road and mountain biking are not permitted in Lower Tokai. Cyclists who wish to run their dogs must refrain from driving on the paths.

Horses are confined to the firebelts and roads, and may not use the interior paths. Horse hooves cause significant damage to paths and result in areas of loose sand that cannot enjoyably be used by hikers and dog walkers. Horses also result in significant alien weed seeds being introduced into the area and thus are not permitted to walk in Fynbos or on the internal Fynbos paths.

Dog walkers are welcome on the designated paths, and hikers and their dogs must remain out of the Fynbos vegetation. All poops must be picked up and removed, but this has not been enforced as suitable bins have not yet been provided.

Please note that dogs and wildlife tend not to be compatible. If your dog kills or attacks, or is attacked or killed, by a wild animal, it is your responsibility. Do not walk your dogs near baboons: they usually want to play with baboons, who do not usually want to play. Your dog must be under control at all times: you must be able to reign in and stop your dog from chasing or attacking wildlife for it to be under control. Dog etiquette, as set out in the "Walking with Dogs EMP," should be followed.

All hikers, dog walkers, cyclists and horse riders visiting Tokai must be in possession of their Wild Cards. All access is at your own risk, and you are responsible for your safety and well being.



Although the pines are being removed and the old pine blocks are no longer relevant in many areas, historical species lists by Morris and Holmes & Morris refer to them. They are also important for determining indigenous seed banks and the effects of past management practices in the area.

### Areas still under pines

The youngest compartments are A19 and A20 which were planted in 1996. Other young compartments are:

- A21b (1994);
- A13c (1993); &
- A21a (1990).

These will only be harvested after 2020.

The oldest pine compartments are A4 and A12, which are 83 years old (planted in 1927). Most of the trees are nearing the end of their lifespan, and the danger of falling branches is very high. They will be cleared as soon as possible, according to the schedule for the development of the Tokai braai area. These are the only stands of Cluster Pine, all other stands at Tokai are Monterey Pine. The next oldest plantation in lower Tokai is A9e, planted in 1977, and due for harvesting according to the current schedule in 2012.

Harvesting schedules for Tokai are published each year for public information, and will be included in future editions of *The Tokai Manner*. However, schedules are tentative and subject to market prices of timber, seasonal demand, competition with timber being harvested elsewhere in the Western Cape, and unplanned events, such as veld fires.

### Areas under other trees

The Camphors in A10c were planted in 1901, before it became illegal to plant in wetlands. The hardwoods in the picnic area (A10d) were planted in 1969: these comprise a mix of indigenous and alien species (including alien "indigenous" Outeniqua Yellowwood & Cape Plum, that are alien to Tokai), and unfortunately some invasive species (Paperbark, Brazilian Pepper, Gums) which will need to be removed.

### Areas being restored to Fynbos

#### Unburned areas

- A14c was harvested in 2004, and is thus 6-years old.
- Parts of A17a & A17b, cleared in 2005, were not burned due to time constraints: stack burns of slash were done.
- A1, A8a & A13b were cleared in 2006, and are 4-years old. Stack burns in A8a were done in May 2009, and a weak fire put through: many plants survived. A13b refused to burn in May 2009 as conditions were too wet..
- A7a was cleared in 2009 and is thus 1-year old.

#### Burned areas

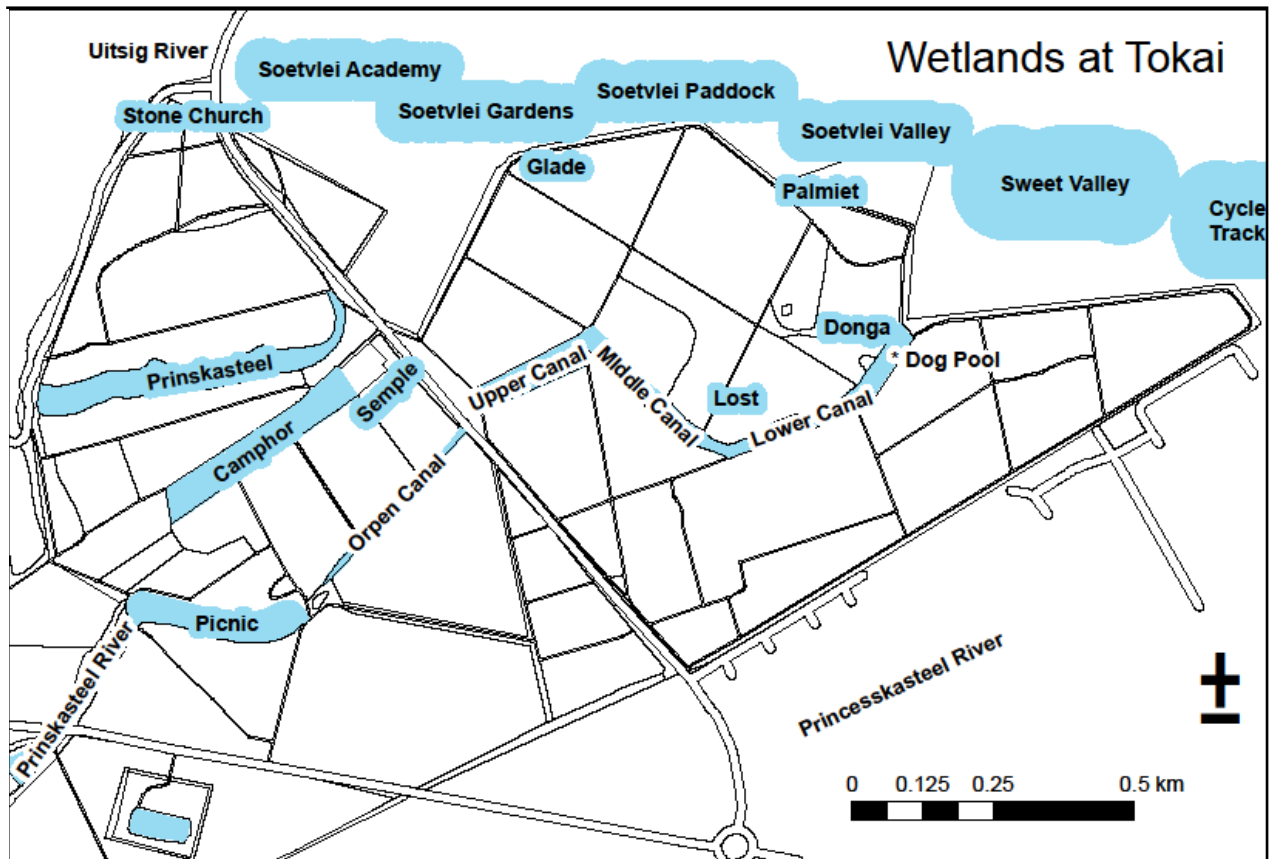
- Compartment A29 was accidentally burned in 1998 as a pine plantation, and resulted in the realization that the Fynbos seed banks were present.
- Part of A17a was cleared in 2005 & burned in April 2006.
- A10b, A11 & A13a were cleared in 2009 & burned in April 2010.
- A15, A16a, A16b, A17a (east), A17b (east), A18a & A18c were cleared in 2010 and are due for burning in 2011.

#### Unplanted areas

The following areas (both wetlands) were never planted:

- A9c and A9d: *Prinskasteel Wetlands* - heavily invaded with Pussy Willow that was cleared in 2008; and
- A24: *Soetvlei Valley Wetlands* - heavily invaded on edge with Black Wattle that was cleared in 2005.

# Tokai Wetlands



One of the effects of plantations is to use more water: wetlands and rivers dry up, or change from perennial to seasonal. A common misconception is that removing plantations will result in floods. In fact, what happens is that the winter flood peaks are reduced as there are more low plants to slow down water and allow percolation into the soil, but water tables are raised and rivers flow for longer periods of the year. This is already apparent at Tokai: the Glade and Lost wetlands are appearing in areas that have not been wet for the last decade: presumably other wetlands will also appear.

The Donga wetlands are an interesting phenomenon: it is not known if they are caused by the natural seepage of ground water from the upper flats over a long period, or are the recent result of floods spilling over from the canal.

The canal (strictly a channel to engineers, who regard canals as concrete structures), was constructed in the 1890s to deliver water to the lower *Ondertuine* (near the Cycle Track). This has been poorly documented, and if anyone has information about the canals it will be appreciated! In areas the channel has eroded almost 3 m below the soil level, effectively lowering the summer water table and allowing better pine growth.

The Glade and Palmiet wetlands are fascinating for containing nice stands of Palmiet: the only places on the Cape Flats where this species still survives: an idea of what might have been can be seen west of Greyton in the Riviersonderend River, where huge expanses of Palmiet wetland still survive. These areas will need boardwalks if paths through them are to be passable now that the pines have been removed.

The Soetvlei Wetlands are the largest wetland in the area. Heavily invaded by Gums, Long-leaf Wattle and Black Wattle, not to mention dozens of other invasive plant species, the area will be cleared to its pristine state by TMNP and Working for Wetlands over the next few years. According to folklore the wetlands were a series of pools and Phragmites Reed in the 1900s. Today due to eutrophication (nutrients from fertilizers and soakaways) and sedimentation (mainly from the vineyards), the Bulrush has become dominant. It is not clear if the Phragmites Reed and pools can be restored: the problem of the eutrophication will have to be solved first. The bulk of the water for the Soetvlei Wetland comes from the Uitsig River.

*Prinskasteel Wetland 2009*

The exact course of the Prinskasteel River is in dispute. At the picnic site the river has been diverted to the canal. Some think it used to run into the Camphor Wetlands, but there is a hill in the way that prevents this. Most likely it ran alongside the canal, bending north to partially flood both the Camphor and Semple wetlands before joining the Prinskasteel Wetlands just west of Orpen Road. The Semple Wetland appears to be an overflow area of the original Prinskasteel River.

The Camphor wetland arises from an eye near the stables. It has been suggested that the Constantiaberg River used to enter the top end of the Camphor River, before it was diverted into its present course. However the topography does not agree with this. It is possible that the Elephants Eye River used to enter this area, but was rerouted to establish the Academy.

The Prinskasteel Wetlands is an unfortunate name in that it is not fed by the Prinskasteel River, but by the Porter River, arising on the border of the TMNP and Uitsig wine farm. The lower end of the Wetland is the confluence of the Prinskasteel, Constantiaberg and Porter Rivers. Unfortunately, when the Orpen Road was built the canal was regarded as the main river and the culverts beneath Orpen Road prevent the restoration of the rivers to their original course. Working for Wetlands have removed the dense Pussy Willows that had invaded the wetland and it is recovering spectacularly.

The Stone Church Wetland is a very small wetland without much of a feeding river. It appears to get much of its water underground from the area around The Range.



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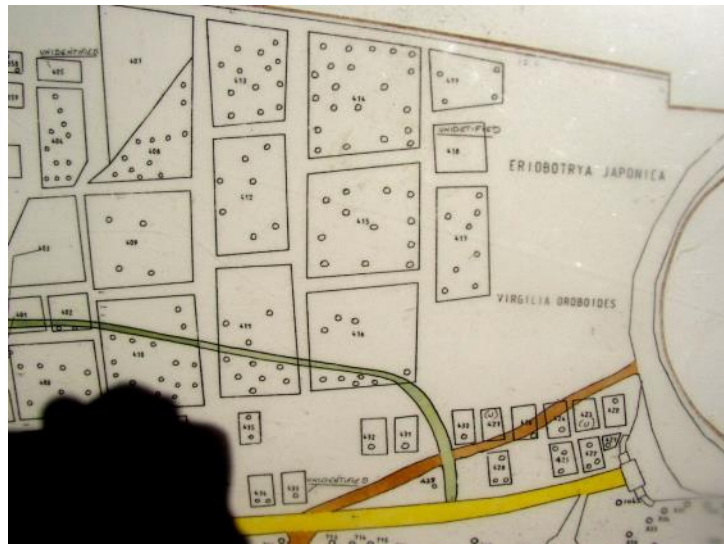
# The Tokai Manner

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The *Diastella* Patch: October 2004 - 6 years old! The start of the Fynbos Restoration Programme.



Arboretum has trees of 300  
The original trees are mapped  
cation.

Perhaps the most exciting walk at Tokai – the Upper Contour Path follows the original upper edge of the plantations. Allow 3-4 hours from the Arboretum via the Elephant Eye trail.



TMNP Emergency Call Centre Number

**086 110 6417**