

FYNBOS FORUM

PROGRAMME

Theme : Fynbos Forum 21 Years On

22-24 APRIL 1998
DIE HERBERG, WÆNHUISKRANS
ARNISTON

Organised by the Inland Resources Programme of the
Sustainable Environment Theme of the Foundation for Research Development

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PROGRAMME

Wednesday, 22 April 1998

- 15:00 Arrive at Die Herberg & registration
 15:00 - 18:00 Posters to be put up and authors to stand with their posters for viewing session!
 19:00 Cocktails at Die Herberg (Cash Bar will be available)

Thursday, 23 April 1998

- 07:45-08:15 Late Registration
 08:15-08:20 Welcome - *Christo Marais*
 08:20-08:35 Opening address - guest to be announced
 08:35-08:55 Keynote address - **21 Years of the Fynbos Forum** - *Charlie Boucher & David McDonald*
 08:55-09:15 Actions speak louder than words: Lessons from the past and ideas for the future for the Fynbos Biome - *Ian MacDonald*

ECOTOURISM - Chair : Maryke Middelmann

- 09:15-09:35 Can Ecotourism save the Cape Floral Kingdom? - *Penny Mustart*
 * 09:35-09:55 Is tourism compatible with the conservation of the African Black Oystercatcher? - *Ann Scott & Mike Scott*
 09:55-10:15 Making Fynbos pay : Grootbos Private Reserve - A Case Study of Fynbos Ecotourism at Work - *Sean Privett*
 10:15-10:40 TEA / COFFEE
 10:40-11:00 "Are we killing the goose that lays the golden egg?" The art of marrying tourism and regional planning with the natural environment - *Andrew West* CNC George

- * ✓ 11:00-11:20 A preliminary check list of taxa along the Garden Route, Southern Cape, with relevance to human impact - *Nicholas Cole & Gavin Hellstrom*
Coordinator Curator Herbarium Southern Cape
REHABILITATION - Chair : Jessica Kemper
- 11:20-11:40 Advances in Fynbos restoration ecology research - *Pat Holmes*
- * ✓ 11:40-12:00 Reflections on Fynbos rehabilitation in Du Toitskloof 1993-1997 : A Practical perspective - *Micky Levitt*
- 12:00-12:10 **Poster** - Some autecological aspects about *Acacia meurnsli* along the Moolenaars River, Du Toitskloof, and the implications for restoration - *Eugene Pienaar*
- 12:10-12:30 The biological control agent, *Melanterius acaciae*, on *Acacia melanoxylon* and *Acacia cyclops* - *Di Donnelly*
- 12:30-13h30 LUNCH
- 13:30-15h00 Annual general meeting and discussion
- FYNBOS ECOLOGY & REPRODUCTIVE BIOLOGY - Chair : Kristal Maze**
- 15:00-15:20 Keynote address - **Fire and Fynbos: Retrospective** - *William Bond*
- 15:20-15:40 Fynbos Ericas : Where are the resprouters? - *Fernando Ojeda*
- 15:40-15:50 **Poster** - A preliminary analysis of the flora of the Hermanus area - *Richard Knight & PB Drew*
- 15:50-16:10 Progress towards a molecular phylogeny of the genus *Disa* - *Dirk Bellstedt & Eric Harley*
- 16:10-16:35 TEA / COFFEE Bio-chemistry gene-transfer

**ALIEN MANAGEMENT & REHABILITATION /
RESTORATION – Chair : Pat Holmes**

- 16:35-16:55 Aliens in the fynbos – what can we expect in the future? –
Dave Richardson
- 16:55-17:15 Economic empowerment through Contractor Development
Alien Clearing in the Working for Water Programme – A Case
Study - *Gary de Kock*
- ✓ 17:15-17:35 Developing a formal Environmental Technical Services
Market (ETSM) for the Fynbos Biome and its Macro Economic
Consequences - *Christo Marais, Jerry Eckert,
Bertie van Hensbergen, William Bond & Desmond Stevens*
- 17:35-17:55 Using LANDSAT imagery to map alien trees in the fynbos –
Neil Fairall & Wendy Lloyd
- 17:55-18:15 Woody alien invading plants in the Western Cape: how much
has been invaded and what are the impacts? –
Dave Le Maitre, Dirk Versfeld & A Chapman
- 18:15-18:25 **Poster** - An approach to mapping woody alien plant
distribution and density in the Cape floristic region using
remote sensing and GIS - *Wendy Lloyd & Elna van den Berg*
- 18:25-19:00 Free Time!
- 19:00 Social Function – Dinner, Wine Tasting and Guest Speaker –
Paul Britton

Friday, 24 April 1998

CULTIVATION – Chair : Ernst Baard

- 08:00-08:20 Genetic diversity for the plant breeder - *Gail Littlejohn*
- 08:20-08:40 Technology transfer in Fynbos - It works both ways –
Emmy Reinten, Gail Littlejohn & Cobus Coetzee
- *✓ 08:40-08:50 **Poster** - Conservation of Buchu through cultivation –
Elton Jefthas & Louisa Blomerus

*I am
discussion re
Solva*

ECOPHYSIOLOGY – Chair : Ernst Baard

- 08:50-09:10 Keynote address - **Plant physiological ecology in the
Fynbos : 21 years on!** - *William Stock*

**CONSERVATION PLANNING & INITIATIVES –
Poster Session – Chair : David McDonald**

- 09:10-09:20 **Poster** - The Use of Landsat Images to quantify Coastal
Fynbos - *Ian Kotze*
- 09:20-09:30 **Poster** - Water resources of the Eastern Overberg
Coastal Zone - *Jean Tukker & W Stadler*
- *✓ 09:30-09:40 **Poster** - Rare floral beauty of the Kogelberg Biosphere
Reserve - *Mark Johns & Ruida Pool*
- 09:40-09:50 **Poster** - A preliminary assessment of the success of the
Protea Atlas project - *Tony Rebelo* *IVAN MASSEYN.*
- 09:50-10:00 **Poster** - Cape Nature Conservation's rare and threatened
plant species programme – *Gerhard Gerber*
- 10:00-10:10 **Poster** - Impact of urban development on the flora of
Mossel Bay - *Nicholas Cole & Sandra Falanga*
- 10:10-10:30 TEA / COFFEE
- 10:30-12:30 **Field trip** - Denel Site/Waenhuiskrans cave
- 12h30-13:30 LUNCH
- Chair : Tony Rebelo**
- 13:30-13:50 Keynote address – **Fynbos Forum – next 21 years –**
Richard Cowling

**CONSERVATION PLANNING & INITIATIVES –
Paper Session**

- 13:50-14:10 The Kogelberg Biosphere Reserve: Quo vadis –
Ruida Pool
- 14:10-14:30 A reserve complex in an urban context : a reserve system
for the Cape Flats, Cape Town - *Janice Golding*

- 14:30-14:50 Filling the Titanic's lifeboats : A management tool for rare plant conservation on the Cape Flats - *Julia Wood*
- ✓✱ 14:50-15:10 "The peel is mightier than the banana" - Reality and the act – *Annelise Schutte-Vlok & Andrew West*
- 15:10-15:30 TEA / COFFEE
- 15:30-15:50 Banana peels for the Red Queen - *Jan Vlok*
- 15:50-16:10 The Botanical Society and the Fynbos Biome – *Bruce McKenzie, Kristal Maze & Jessica Kemper*
- 16:10-16:30 The potential role of Biosphere Reserves in rural development and the Conservation of Natural Resources - *Peter Adams*
- 16:30 **Summary - Brian Huntley**
Prize Giving & Close

PAPER

AND

POSTER

ABSTRACTS

21 YEARS OF THE FYNBOS FORUM

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CLAREMONT
7735

The activities in the Fynbos Biome research programme and the Fynbos Forum over the last 21 years are reviewed. Major events are highlighted. The contribution by participants to these programmes to the conservation of fynbos are evaluated.

It is concluded that this forum has been very successful not only in bringing fynbos orientated researches, managers and industry together to the advantage of the community as a whole, but has also made major contributions toward understanding Mediterranean Ecosystems on a global scale.

CAN ECOTOURISM SAVE THE CAPE FLORAL KINGDOM?

P Mustart

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The practice of ecotourism has long been heralded as a potential saviour of the fynbos, or more explicitly as a means of generating income for, and interest in, conservation of the biodiversity of the Cape Floral Kingdom (CFK). How much advance has been made towards this objective?

This talk outlines the progress of the flora-based ecotourism industry in recent years. It highlights the achievements, and also attempts to elucidate further developments that are needed for ecotourism to fulfil its role in conservation of the CFK. The road ahead to the "pot-of-gold" requires continued initiative and hard work. In particular, it is stressed that wide-based, careful planning is required such that ecotourism is both effective (by satisfying local

community and conservation needs, and by providing worthwhile experiences for the ecotourist) and sustainable (by appropriate tour operations that do not damage the environment). Initial financial input will be required in order to reach the objective of a long-term, viable ecotourism industry.

IS TOURISM COMPATIBLE WITH THE CONSERVATION OF THE AFRICAN BLACK OYSTERCATCHER?

A Scott & M Scott

Overberg Conservation Services
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GANSBAAI 7220

The African Black Oystercatcher is South Africa's rarest endemic coastal bird, with a world population of less than 5 000. The species is facing a conservation crisis due to increasing human pressure on its coastal habitats, and has been rated as an International Red Data Book species. Oystercatchers feed on mussels and limpets in the intertidal zone. The birds are longlived and highly territorial. The breeding season stretches from November to February, when human disturbance on mainland beaches is at its greatest. The main breeding success is on off-shore islands. A survey of breeding success in March 1997 yielded some alarming results: recruitment in parts of the West Coast was barely one tenth of that needed to maintain a healthy population, and even lower in parts of the Eastern Cape. A three-year national Oystercatcher Conservation Programme was therefore initiated in 1998.

The De Hoop Nature Reserve boasts the highest densities of African Black Oystercatchers recorded on the mainland of Southern Africa. The declaration of a marine reserve in March 1986 offered increased protection to the species. Numbers of tourists visiting the area have increased steadily, and coastal utilization by tourists reaches a peak in summer, when the oystercatchers are breeding. An intensive research project was carried out on the oystercatchers from 1984 to 1990, followed by an ongoing monitoring programme. The results are now being written up, in conjunction with a detailed investigation into the effects of human disturbance.

Some preliminary results are presented together with a draft conservation strategy with management options, which is open for discussion. Regardless of which management approach is adopted, the best strategy will make people part of the solution. The utilization of coastal areas for tourism should therefore take place in conjunction with an intensive extension programme during the oystercatcher breeding season, true "ecotourism" is thus preferable to mere tourism. It is imperative that oystercatcher populations are monitored, so that adjustments may be made to conservation strategies as necessary. Conservation activities should dovetail with the national Oystercatcher Conservation Programme.

MAKING FYNBOS PAY : GROOTBOS PRIVATE NATURE RESERVE - A CASE STUDY OF FYNBOS ECOTOURISM AT WORK

S Privett

Grootbos Nature Reserve

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Grootbos is a 1200 hectare private fynbos nature reserve situated on the coast between Hermanus and Gansbaai. Five luxury cottages and a lodge provide accommodation and hotel facilities for twenty four guests. Activities offered include botanical walks and 4x4 drives, horse riding tours through the Fynbos, beach walks, visits to archeological sites, whale watching during season, mountain biking and boat tours. Guests are accompanied on all activities by professionally trained guides. Throughout the development and marketing of the lodge emphasis has been placed on fynbos as a major drawcard and attraction of the area. This paper explores whether this form of fynbos based ecotourism is economically and ecologically sustainable when compared with other land use systems in the area.

"ARE WE KILLING THE GOOSE THAT LAYS THE GOLDEN EGG? THE ART OF MARRYING TOURISM AND REGIONAL PLANNING WITH THE NATURAL ENVIRONMENT"

A West

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GEORGE 6530

Environmentally insensitive developments along our coastline and also further inland are threatening the Cape Floral Kingdom and the whole concept of ecotourism. Regional Planners need to be aware of environmental issues and consultants must "apply their minds" when advising prospective developers. There is now more than ever, pressure on the Provincial Conservation Body to manage and control the whole Development and Planning process.

After all we don't want a Natal South Coast ribbon development along our Western Cape Coastline.

PRELIMINARY FLORA CHECKLIST FOR THE GARDEN ROUTE

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The Garden Route of South Africa is situated along the southern Cape coast extends from the Gourits River in the west to the Klip River in the east, from the coast to the ridge of the coastal mountains. This region is experiencing unprecedented growth in urban and recreational developments along the coast as well as pressure from agriculture and afforestation along the coastal plateau. This development and land

transformation as well as the influx of people into the region is putting mounting pressure on the natural environment.

To date no check list of the flora for this region has been drawn up. The objective of this paper is to draw up a taxon list calculating family/genus/species ratios for this area then evaluating this list. This analysis will be compared with similar works in other regions of the Cape Floral Kingdom. The analysis will focus on the Garden Route as floristic region. The list will be used to assess the conservation status as well as Red Data status of taxon within the region as well as a list of species to be collected for incorporation into the Southern Cape Herbarium.

The data has been drawn from several sources including the Southern Cape Herbarium collection, Cape Nature Conservation Reserve lists, collection lists of several local botanists and amateur botanists. List annotations include collector/literature reference, map number and area.

ADVANCES IN FYNBOS RESTORATION ECOLOGY RESEARCH

PM Holmes

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Worldwide, the field of restoration ecology research is rapidly growing as it is seen as a necessary complement to conservation biology research, in order to combat the increasing problem of transformed land and the dwindling extent of natural ecosystems. South Africa faces similar pressures on natural ecosystems and in response to this, and to the impetus provided by the RDP "Working for Water" programme in clearing alien plants from mountain catchments, a new wave of research has recently been initiated. In this paper I summarize the main findings of fynbos restoration research and identify some gaps in our knowledge which should be priorities for future research. Finally, I suggest that by working together,

practitioners and ecologists can both improve restoration efficiency and advance our knowledge of fynbos ecology.

* ✓ REFLECTIONS ON FYNBOS REHABILITATION IN DU TOITSKLOOF 1993-1997: A PRACTICAL PERSPECTIVE

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The paper, illustrated with slides, will focus on practical considerations and challenges which occurred when given the task of plant rescue and propagation for the road construction project, as prescribed in the Environmental Management Plan. Emphasis will be on a horticultural viewpoint in relation to that of the botanists and engineers., ie: as experienced through the eyes of the nursery manager in the field.

SOME AUTECOLOGICAL ASPECTS ABOUT ACACIA MEARNsii ALONG THE MOOLENAARS RIVER, DU TOITSKLOOF, AND THE IMPLICATIONS FOR RESTORATION

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Large parts of riverine systems in South Africa are invaded by *Acacia mearnsii*, an exotic Australian invasive species. This study assesses (1) the effectiveness of Garlon 4, a

towards the mediterranean, strongly seasonal northwestern CFR and the non-seasonal eastern CFR and summer rainfall area outside the CFR has been identified. The number of resprouter species reaches a maximum in the eastern CFR and is lower in the southwestern CFR despite the overall higher concentration of species in this subregion.

Summer drought strongly influences the effectiveness of post-fire regeneration and growth (i.e. new recruits plus survivors) of *Erica* species, and is the major selective force accounting for the pattern of distribution of seeders and resprouters in the CFR. A mild mediterranean climate with reliable autumn-winter rains and a short summer drought, typical of the mountain areas of the southwestern CFR, seems to be more limiting for recruitment of resprouters than of seeders. Resprouter species would persist and become dominant under harsh conditions for recruitment (severe summer drought) and would coexist with seeders under situations of no summer stress.

Diversification is associated with seeder lineages. Hence, number of seeder species will be higher than number of resprouters, especially in the southwestern CFR, where favourable conditions for recruitment allow a massive concentration of seeder species, many of them narrow endemics.

A PRELIMINARY ANALYSIS OF THE FLORA OF THE HERMANUS AREA

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Active herbarium collection has been ongoing in the Hermanus area since the early 1980s. In effect three separate collections exist representing the Fernkloof Municipal Nature Reserve

(mixed Mountain Fynbos with some coastal flora), Vogelgat Private Nature Reserve (mostly Mountain Fynbos) and the coastal areas and commonages of greater Hermanus (areas <80m altitude). The Fernkloof collection amounts to more than 1000 angiosperm species collected from 1446 ha, the Vogelgat collection includes almost 800 species collected from 602 ha and in the coastal areas more than 900 species have been collected (collection area not determined). Fernkloof Nature Reserve has received the greatest intensity of collection (> 4000 specimens) through the Hermanus Botanical Society. The Vogelgat collection was primarily undertaken by Dr I Williams, whereas the coastal area was undertaken by the late Mrs S Williams. Although a computerized species data base exists for the Fernkloof Nature Reserve (Jessop 1996) at the beginning of 1998 a start was made at updating a database that consolidated all three collections that had been established by Knight and Drew in 1988. Preliminary analyses of this database show that the Hermanus area has an extremely rich flora with more than 1500 species. This is a similar number of species to that reported for the Arniston-Breede region and more than that reported for the Cape Hangklip, both of which cover a much greater area. Even Fernkloof Nature Reserve on its own has a similar number of species to the Cape of Good Hope Nature Reserve yet occupies an area less than one-fifth.

The proportions of species in the larger families are compared to those reported for the Cape Peninsula, Agulhas Plain and Humansdorp districts.

PROGRESS TOWARDS A MOLECULAR PHYLOGENY OF THE GENUS *DISA*

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Many genera that are represented by a smaller number of species in the rest of Africa and the world are represented by an overwhelming species diversity in the fynbos

biome. Genera such as *Erica* and *Protea* immediately spring to mind. For this reason, the fynbos biome has been of great interest to plant systematists for many years. However, the delineation of separate taxa and the relation of these taxa to each other by means of the classical systematic approaches based on plant morphology alone are often problematical, particularly in closely related taxa. Recently, molecular systematic approaches have contributed very meaningfully to resolving relationships between closely related taxa but these have not been used very frequently to resolve the relationships between closely related taxa occurring in the fynbos biome.

In 1996, we initiated a molecular systematic study of the Genus *Disa*, which also has the very high typical species diversity within the fynbos biome, with a view of augmenting the classical phylogenetic studies on the Genus by authors such as Linder and Kurzweil. Our approach was to amplify the intervening regions of the chloroplast tRNA genes (the tRNAL intron and the tRNAF-tRNAL spacer) by PCR and to subsequently determine the sequences by automated sequencing. The sequences of the different species were aligned and analysed by means of parsimony and distance analysis. The results of the study to date, which includes some 28 species and subspecies will be presented. We have found that the results are in broad agreement with the classical phylogeny, but that there are certain important differences as well. The detection of simple repeats within the tRNAL intron may have interesting implications for phylogenetic studies at the population level.

This presentation also illustrates the utility and relative ease of application of molecular techniques to SA botanical problems.

ALIENS IN THE FYNBOS – WHAT CAN WE EXPECT IN THE FUTURE?

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Issues relating to the ecology and management of invasive aliens (especially plants) have featured prominently in the proceedings of every Fynbos Forum meeting.

Good progress has been made in understanding how the aliens manage to do so well in fynbos (for some species we now have the basis for a good predictive understanding). The Working for Water programme and related projects are also making great strides towards clearing fynbos areas of alien trees and shrubs. Things are looking good, but can we afford to be complacent?

I propose to take a look at some "curve-balls" that could hit us in the future and which may force us to search for new ways of living with aliens. I will also try to relay some perspectives on this topic from other parts of the world, and suggest where we can learn from what's happening elsewhere, and where they can learn from us.

"ECONOMIC EMPOWERMENT THROUGH CONTRACTOR DEVELOPMENT"

ALIEN CLEARING IN THE 'WORKING FOR WATER' PROGRAMME - A CASE STUDY

G de Kock

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The process of controlling alien plants creates an opportunity to train and develop people in a range of skills including technical, supervisory, managerial and entrepreneurial. The goal is to empower members of disadvantaged communities to form viable business units that would allow them to tender for other economic opportunities through having developed generic and entrepreneurial skills and experience.

20 people from 4 communities (3 informal settlements, 1 sub-economic), with some existing contractor capacity (ie. Some experience of running a small business or who had shown leadership and management ability) underwent two weeks of training in

preparation to contracting. Each subsequently selected and managed their own teams of 13 people.

Selection occurred through a participatory process that involved the whole community. Alongside the contractors, one person from each community was selected as a trainer. The trainer's role was to assist the contractor in training staff and provide ongoing support. Trainers were mentored by supervisors to enable them to later contract their training skills to the project. The presentation covers the Social Ecology mentoring and support functions, lessons learned and way forward.

DEVELOPING A FORMAL ENVIRONMENTAL TECHNICAL SERVICES MARKET (ETSM) FOR THE FYNBOS BIOME AND ITS MACRO ECONOMIC CONSEQUENCES

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It is two years after the inception of the Fynbos Working for Water Project (FWWP). A number of lessons were learnt and a vision for the future developed. The viability of invasive alien plant clearing programmes amongst others depends on the productivity and management efficiency of individual projects. As with the clearing operation itself, the empowerment processes also needs follow up. The FWWP addresses the development of the ETSM not only to ensure that invasive alien plants in the Fynbos Biome is brought under control but also to ensure sustainable management of natural areas in the biome with all aspects of natural resource management taken into account. We look at the development of this market and the macro economic effects of the development process on the Western Cape Economy, as well as the possible future funding sources to sustain the ETSM. The development process is aimed at enhancing the sustainable management of natural resources and economic empowerment of people from previously disadvantaged communities.

Aspects addressed in the paper are the development processes, the possible components of an ETSM, employment, redistribution of income and contribution to government revenue.

USING LANDSAT IMAGERY TO MAP ALIEN TREES IN THE FYNBOS

N Fairall

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The suitability of using Landsat imagery to identify alien invasives of different species was tested at different levels of density.

Positive results were obtained and will be discussed together with conditions where this technique is unsuitable.

WOODY ALIEN INVADING PLANTS IN THE WESTERN CAPE: HOW MUCH HAS BEEN INVADED AND WHAT ARE THE IMPACTS?

D le Maitre / D Versfeld / A Chapman
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A recent survey of the extent and impacts of invading alien (exotic) plants has shown that about 10.1 million hectares have been invaded to some extent. More than 1/3rd of this

invaded area is situated in the Western Cape Province, making it the most extensively and densely invaded of all the provinces. About 2.3 million ha (63%) of the invaded area is found in the coastal lowlands and mountain ranges from the Berg River to the Breede River, where the invaded area amounts to more than half the total land area. Much of the invaded area is situated in the montane catchments but extensive areas of the lowlands, particularly on sandy soils have been invaded by *Acacia cyclops* and *A. saligna*. These species both feature in the top 10 invaders country wide and have invaded about 1.5 million ha, mainly on the lowlands. The next most important species are *Pinus pinaster* (0.8), *Hakea sericea* (0.7) and *A. mearnsii* (0.6 mainly in along rivers) and *P. radiata* (0.5 million ha). *Eucalyptus* species have invaded a large area mainly in the Olifants, Berg and Breede River systems. The river systems of the Western Cape yielded, under the pre-settlement conditions, about 6 555 million m³ of water per year, with most of this coming from the montane areas. Invasions by woody alien plants have reduced the annual runoff by about 17.8% compared with about 9% for the whole RSA. This is equivalent to a reduction of 187 mm per year in the runoff from areas with 100% cover of alien trees. The worst affected catchments are those of the West Coast lowlands from the Sandveld northwards, where there is a very low natural runoff and the invaders probably depend on groundwater (and moisture from fog north of St Helena Bay). The impacts on biodiversity have not been properly quantified yet but the remaining areas of lowland vegetation, notably sand-plain fynbos, are generally invaded to some degree and highly likely to be lost unless effective control measures are implemented. If all these invading plants could be cleared completely (including follow-up) within a year, this would cost about R2.9 billion. A more realistic programme would require about 20 years and cost some R6.0 billion or about R400 million per year for 20 years.

- The DEM, satellite image, stripped geology coverage an borehole coverage were used in conjunction to delineate areas for which potential groundwater resources were quantified.

THE RARE FLORA OF THE KOGELBERG BIOSPHERE RESERVE

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The Kogelberg Biosphere Reserve is one of the botanical treasure chests in the Fynbos biome, with over 1600 plant species of which approximately 77 are endemic. The Kogelberg is regarded as a centre of endemism where roughly a fifth of all fynbos species are known to occur. The area has many rare and threatened species listed in the Red Data List. Some of these showpiece species include the Marsh Rose, (*Orothamnus zeyheri*) and the Matchstick Pagoda, (*Mimetes hottentoticus*).

The vegetation of the Kogelberg has been well documented by various botanists. The distributions and exact localities of most endemic taxa are on record and populations of prominent species are being monitored regularly.

The Kogelberg Nature Reserve forms part of the primary core area of the Kogelberg Biosphere Reserve. Some of the aspects that will get further attention within the Biosphere Reserve concept, are inventories, monitoring of rare plant populations, information distribution and ecotourism. Within this framework, the floral beauty of the Kogelberg will be used to increase awareness of the conservation significance of the Biosphere Reserve, whilst protecting sensitive habitats.

The summarised information of 10 special plant species will be represented as a photographic poster.

CAPE NATURE CONSERVATION'S RARE AND THREATENED PLANT SPECIES PROGRAM

G Gerber
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To accomplish Cape Nature Conservation's mission of conserving the natural heritage of the Western Cape, one of our goals is conserving genetic diversity. CNC thus dedicates itself to the preservation of rare and threatened plant species.

CNC has been dealing with issues regarding rare and threatened plant species in the Western Cape for the past 20 odd years, but the study and conservation of rare and threatened plant taxa is such a vast field that no organization could attempt to tackle this daunting task on its own. A concerted effort by and shared responsibility between all organizations working in this field is necessary.

In order to be more effective, Cape Nature Conservation (working in liaison with the National Botanical Institute and the Botanical Society of South Africa) are changing their approach when it comes to the study and conservation of rare and threatened plant species in the Western Cape.

The poster will provide summarized information on three projects for this year.

AN RESERVE COMPLEX IN AN URBAN CONTEXT: A RESERVE SYSTEM FOR THE CAPE FLATS, CAPE TOWN

J Golding

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The fundamental aim of this project is to design an explicit system of nature reserves and urban open spaces for the Cape Flats. Against a national and global backdrop, the Cape Flats flora is a major 'hotspot' of plant biodiversity in that it has a rich and endemic flora that is fast-tending to increased extinction risk. Locally, it represents a huge potential for eco-educational and recreational public amenities. As we approach the 21st century, there is no doubt that existing prime areas will soon be encroached by the pressures of urbanisation and other developments. In an attempt to minimise these impacts, key fragments which function together as a biological system need to be planned for in advance. Various conservation goals are explored:

1. Conserve all plant species at least once
2. Conserve all habitats at least once
3. Conserve biodiversity
4. Conserve all large tracts of land
5. Conserve the least politically/legally problematic areas
6. Conserve vulnerable ecosystem processes

Under these goals, isolated land fragments are selected so that they function interdependently as a protected system to ensure the long-term survival of their biota.

"THE PEEL IS MIGHTIER THAN THE BANANA" – REALITY AND THE ACT

A Schutte-Vlok & AG West
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GEORGE 6530

Cape Nature Conservation (CNC) has been tasked to administer the Environment Conservation Act, 1989 (Act No. 73 of 1989) in the Western Cape. The plight of a Botanist in the world of developers, planners, engineers, environmental consultants, local authorities, various legislations, different government departments, NGO's etc. is discussed and illustrated.

"BANANA-PEELS FOR THE RED QUEEN"

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From ecological theory we know that "it takes all the running you can do merely to stay in the same place". I will discuss the present day factors which I believe are "banana-peels" on the road of the "Red Queen". In other words, those factors which I believe are now hampering conservationists to conserve the fynbos vegetation in a rapidly changing South Africa.

THE BOTANICAL SOCIETY AND THE FYNBOS BIOME: RECENT ACTIVITIES

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The Botanical Society of South Africa has been involved in conservation issues in the Fynbos Biome since its establishment in 1913. Over the years the focus changed from only supporting Kirstenbosch Gardens to being involved in broader conservation activities. It is really in the last 20 years that there has been significant input into the conservation of the Fynbos flora.

In terms of public interest, the Society's Cape-based membership has increased from 400 in 1925 to over 11000 in 1998. Five of the twelve Society branches are based in the confines of the Fynbos Biome. Further public interest is shown by the fact that we have produced eight wild flower guides in the region since 1982 and sold over 80 000 copies. In the same period, the Flora Conservation Committee has been responsible for producing 22 reports which together cover some 45% of the lowland areas of the Fynbos Biome. Activities have been unfairly biased towards the Cape Metropolitan Area with over 37% of our reports and 54% of our inputs into IEM procedures focused on this area. The FCC's activities over the next few years are to focus on the West Coast, north of the Cape Metropole and the South East Coast.

In addition, there have been other activities such as our annual poster series (Fynbos: 1997), and initiation of programmes on waterwise gardening and employing people to clear alien plants. These have now become national projects.

THE POTENTIAL ROLE OF BIOSPHERE RESERVES IN RURAL DEVELOPMENT AND THE CONSERVATION OF NATURAL RESOURCES

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If our natural resources, including biodiversity, are to be protected and used sustainably, it is important that the rural areas, where they are mostly situated, are kept in a healthy state. One of the main causes of rural disintegration is seen as urban primacy. Ways of counteracting this are examined and include bioregional planning and the development of Biosphere Reserves.

Apart from human causes, climate change is seen as the greatest potential danger to the Western Cape ecosystems. Planning to alleviate the affects must be done on a regional scale and in co-ordination with the tourist industry.

A suitable structure is required to encompass the diverse initiatives presently being mounted to develop or maintain rural areas. Biosphere planning principles appear to offer a suitable structure to fulfil this role and should be further investigated. A study project is suggested to examine this.

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