



Grand old trees of the garden

At the Natal National Botanical Garden we have many old and wonderful trees. To share their stories, we've marked some of the more interesting ones. Look for signs like this that tell you more about the 'Grand old trees of the garden.'

For interested visitors, the scientific name of each tree is included on the signs.



Grand old trees of the garden

The Natal NBG is an established garden with many old stately trees. Few visitors fail to admire their tremendous size and beauty. This inspired the theme 'Grand old trees of the garden'. Small temporary signs were used to highlight some of their interesting stories. Some of these signs still looked clear and professional 20 months after they had been put up. Signs in the shade lasted longer than those in full sun.

A5 signs. Made of paper which has been plastic laminated.



Poisonous oil nuts!

The seeds from this Tung-nut tree yield valuable oil, used in making varnishes and paint. Don't eat the Tung-nuts please. All parts of this tree are highly poisonous.

Aleurites sp.



Grand old trees of the garden



Lightning strike

In 1996 a bolt of lightning struck this Tulip tree. Naturally found in North America, these trees are named for their tulip-like flowers.

Liriodendron tulipifera



Grand old trees of the garden

Welcome to the Fynbos Walk

This path will take you through a unique type of vegetation called fynbos which is found only in the Cape province of South Africa. Fynbos plants are tough; they survive long dry summers, strong winds and grow on infertile soil. How do they survive? What makes fynbos so special? Follow the yellow brick path to find out.

Die Fynboswandelpad

Hierdie pad neem jou deur die fynbos, daardie unieke plantegroei wat slegs in die Kaapprovinsie van Suid-Afrika voorkom. Fynbosplante is taai; hulle oorleef die lang droë somers, sterk winde en groei in arm grond. Hoe oorleef hulle? Wat maak hulle so besonder? Volg die geel baksteenpadjies om uit te vind.

Wankelekele kwiNdlledlana yefYnboos

Le rilledlana iya kwakulekelela kwazibhona ezimfano iyodisa ezibhona ngokuba yifynbos. Zibhonzulu kugqibela kwipondo lesoloni ezizantsi Afrika, kimpelo ezifynbos zomelele kubhulor. ziyakusazi ubumalana nobhona kwazibhonyeni neminyaka emikhulu loonye nkhuba lomimihlaba emqanyabango. Ziphila njani kwazi mkoqo yintsoni le yenza nazi zibhona ziyifynbos zibe nomfano epholile? Landela kwindlelana yobhona ebalulekile uzo kubononela ngokwakho.

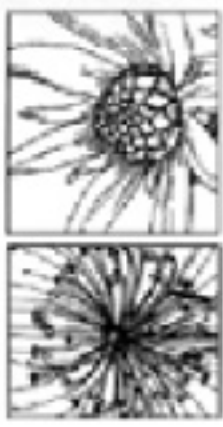


Fynbos for People
Fynbos is used for food, drink, medicine and shelter. Find out about its many uses in the Useful Plants Garden.



Fynbos is exceptionally diverse. There are over 8000 Fynbos plant species and many of these occur nowhere else on earth.

Fynbos needs Fire!
Discover how fynbos is adapted to survive bush fires.



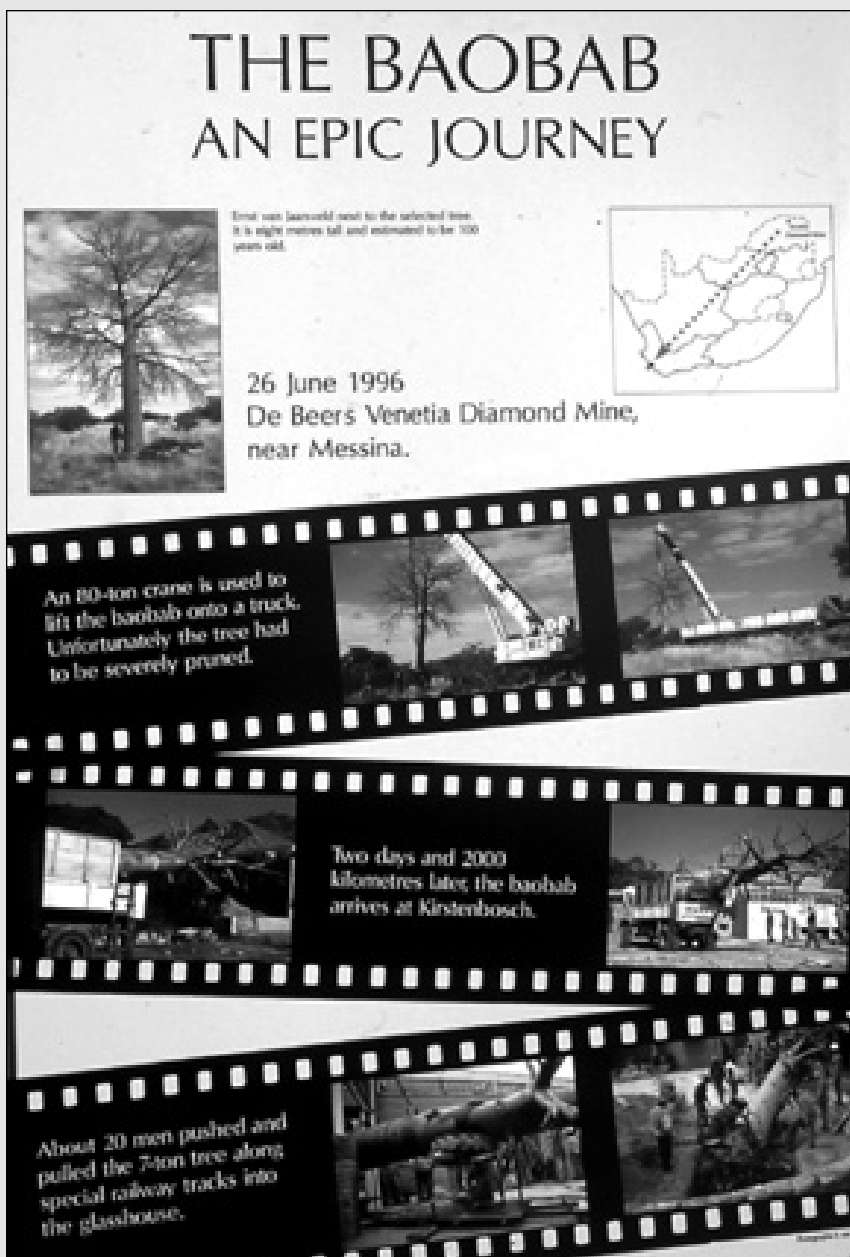
Detail and diversity
Many Fynbos treasures are small and easily overlooked. Look closely and you will discover a world of subtle colours, textures and intricate designs.

Gardening with Fynbos
Visit the Fynbos Demonstration Garden for practical tips and inspiration for your home garden.



This introductory sign explains briefly what fynbos is, and introduces some of the themes which will be interpreted along the walk. Notice how unanswered questions have been used to stimulate curiosity and encourage people to find out more along the trail.

300 x 600 mm aluminium sign. Single colour (black).



The Conservatory at Kirstenbosch NBG features a large baobab tree standing over 8 metres high. This poster explains how the baobab was transported from the Northern Province of South Africa and planted in the glasshouse. Notice how little text there is and how pictures have been used in a photo frame format to tell the story.

800 x 540 mm, full-colour, designed on computer and digitally printed at a specialised printing bureau.

A Built-in Sunscreen

This desert plant has a silvery covering on the outside of its leaves. This reflects heat in the hot climate where it lives. The cover also prevents excessive water loss.

Underneath the silvery layer the plant is green and can therefore make its own food.

Good design, don't you think?



The restaurant at the Natal NBG is one of the most busy and popular parts of the garden. John Roff (Interpreter) recognised this as a captive audience for interpretation, so he constructed a shelf with a pin-board near the entrance to the restaurant. He uses the shelf to feature interesting specimens from the nursery (in pots), and interprets the display with a temporary sign. Notice how everyday items like 'file' and 'sunscreen' have been used in the titles. These words attract interest because they are not usually associated with plants. It also makes it easy for people to identify with and understand the subject.

A4 paper signs

Why does this succulent feel like a file?

This aloe relative grows in the hot dry valleys of northern KwaZulu-Natal. Its thick fleshy leaves store water. This helps the plant survive long periods of drought.

Rub a *Gasteria batesiana* leaf. The rough texture stops animals from eating the plant, thus keeping its stored water safe.

Gasteria batesiana

This is an example of a 'work in progress' sign. It informs visitors about a proposed new development called the Fynbos Demonstration Garden. Notice how the purpose of the development and the mission of the organisation have been included on the sign.


A3 temporary sign.
A single colour photocopy (black) which has been coloured in with pencil crayon.

What's happening here?

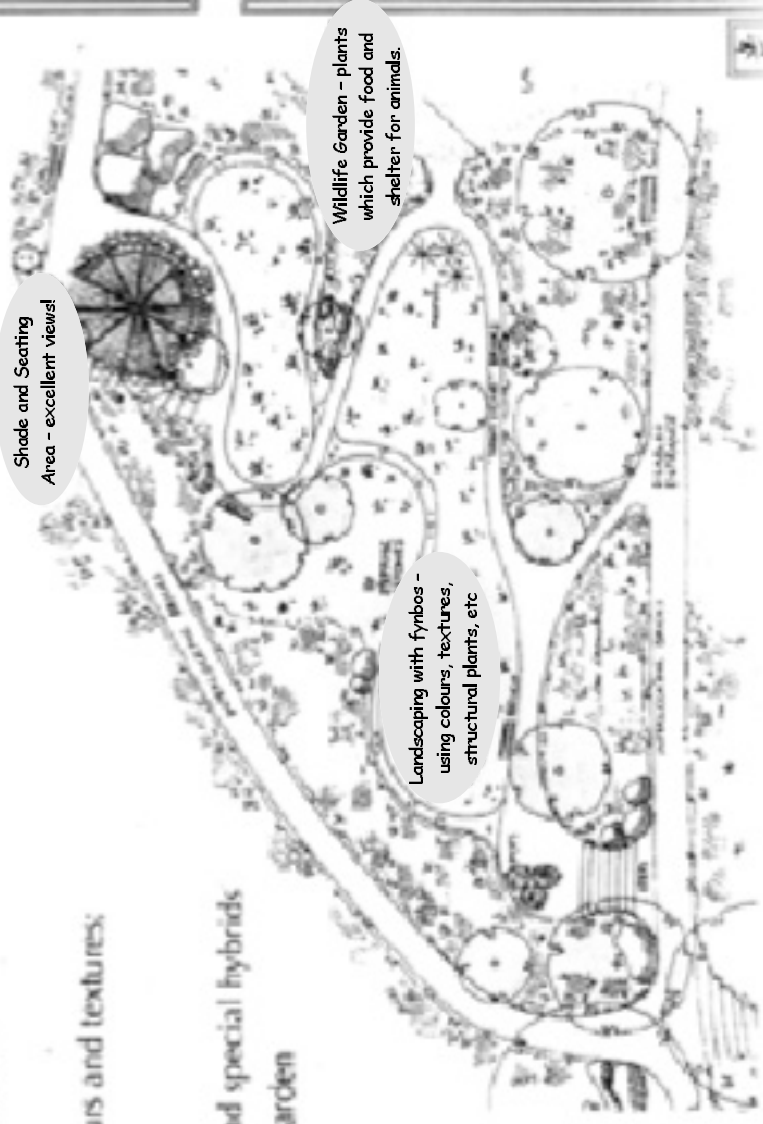
We're in the process of developing this area into a **Fynbos Demonstration Garden**. It will show you how to garden with fynbos, and tell you about:

- fynbos growing requirements
- using plants with different colours and textures: structural plants and 'fillers'
- the correct planting distances
- some hardy fynbos favourites and special hybrids
- how to attract wildlife to your garden

Come back to see how the garden progresses. We will complete the hard landscaping and planting plan this year, and plant up the garden next autumn.



Part of the mission of the National Botanical Institute is to promote the use of indigenous plants. We hope this demonstration garden will inspire you to create your own fynbos garden.



Shade and Seating Area - excellent views!

Wildlife Garden - plants which provide food and shelter for animals.

Landscaping with fynbos - using colours, textures, structural plants, etc

Welcome to a Fledgling Forest

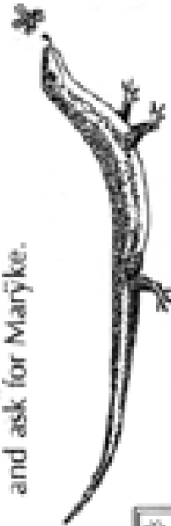
We are in the process of creating a forest. Dozens of trees and shrubs have been planted, mainly from the warmer subtropical parts of South Africa. To create shade and shelter for these tender species, we have used fast-growing pioneer trees.

The forest is still a bit patchy. You'll be able to feel the contrast between open, sunny spaces and the cool shade found under a closed forest canopy. These different habitats provide food and shelter for a variety of animals and makes it a good place for bird watching.

As you walk through this young forest, try to imagine what it will look like in ten years time. Come back and see how it is growing from time to time.

Please help us name this forest

We need a name for this area! On the Plant Records map it is simply marked as Section Q. If you can think of a descriptive name, please give us a call at tel 762 1166 and ask for Maryke.



How do you create a forest?
Enter this area to find out!



Part of the mission of the National Botanical Institute is to grow and display plants. This garden section forms part of our collection of subtropical trees.

This sign was placed at the entrance to 'Section Q' at Kirstenbosch NBG - an area which was being developed as a forest but didn't yet have a name. The sign invites visitors to suggest a name for the area. The response was small and mainly from children, but the suggestions were good. The area has now been officially named the 'Enchanted Forest'.

A3 temporary sign. Single colour (black).

This sign invites visitors to look out for wildlife in and around a pond in the Pretoria NBG. Notice the absence of scientific jargon and how simple words have been used to explain the ecology of ponds.

A3 temporary sign.
Single colour (black).

Ponds attract wildlife!

What living creatures can you see? How many birds' nests can you identify? A successful pond should abound with wildlife: fish, birds, tadpoles, frogs, insects ... and of course, plants. For it to flourish the balance of plants and animals must be just right.

Why do ponds need plants?

Plants provide oxygen, shade and shelter for fish and other animals. Waterlilies should cover at least one-third to half the pond surface to cut out the amount of sunlight penetrating the water. This helps reduce the oxygen-hungry green algae.

Fish eats fish ... and other things!

Look for the tadpoles. They provide food for many creatures, and are also preyed on by children! Some fish feed on mosquito larvae; others eat algae or other fish. Certain birds eat fish, so remember to provide rocks or plants for the fish to hide under!

Coffee!



Tasty Treasure

Africa is the home of coffee, though more now grows in Brazil. The bushes in front of you are *Coffea arabica*, the most common commercial species. Its attractive white flowers and colourful (caffeine-rich) seeds make this a true treasure bush.



There are twenty species of coffee. Commercial plantations use only two of these.

African Coffee!



Coffee grows naturally on the shady rain forest floor. Other well-known shade lovers from the forest are impatiens and the African violet.

Notice the illustration which has been placed centrally on this sign. Most people can relate to a big mug of steaming coffee, so this makes the subject very accessible. The main text is short and concise (42 words), and extra bits of information are given in the captions.

A3 temporary sign. Single colour (black).

Helmeted Guinea Fowl—pest-controllers not on the payroll!

Helmeted Guinea fowl keep this Garden pest-free by eating termites and other insects—don't feed them, or they will get lazy and won't do their job.

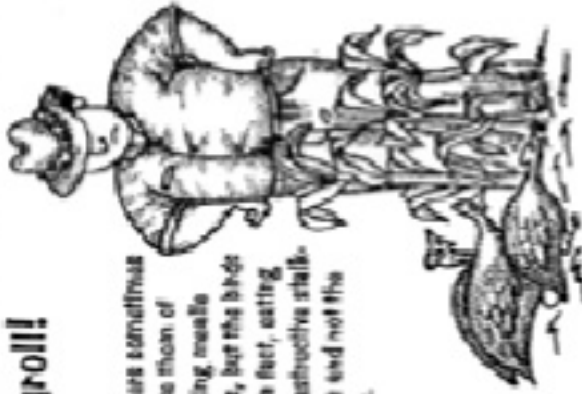
They breed only in good rainfall years when the males become extremely aggressive and chase and annoy one another.

Six to eight well-concealed eggs are laid in a grass-lined hollow in the ground. The parent bird will remain stubbornly sitting on its eggs, no matter what! Look out for chicks in summer.

Kgala e dina gore tshengwana ye e dula e se na dilomani ka go ja masekale le dibumbuwano tse dingwe — o eka wa di fa dilo, di ka thoma go tshela gomme tla se dina molomo wa tsona.

Di aama fela ka sehla seo di pula di nago kudu go ditona di tshelanya kudu di tshelanya le go ramolana.

Wae a tshela goba a senwani a beshwa ka molomong woo o ditloghwago ka tjang. Nonyana ye e lego molomedi e tla eula godimo go mas a yona ka tjang — le go go ka direga eng!



Fatnus tshelthusa aozoa thosa of breaking mesalla plants, but the birds are, in fact, eating the destructive stalk-borers and not the seeds.

Gewone Terentiale hoo Hentlie Tuin vry van plaa, want hulle vreet termiete en ander insekte—moet hulle aasblief nie voor nie, anders word hulle te lui om self kos te soek.

Hulle boei net in goeie reinjare. Die mannetjies raak dan baie aggressief en jaag en treiter mekaar gedurig.

Die goed weggesteekte boeke in die grond waarin ses tot agt eiers geleë word, word met gras uitgevoet. Die ouer sal op die nes by sit en versig om jod te ges, wat ook al geblaar! Wees op die waarskynlik vir kuiseis in die somer.

Humour has been used in the title to catch people's attention. The theme of the sign (Guinea-fowl help to control pests) helps visitors to understand the request not to feed these birds. The text (font size) is rather small.

A3 temporary sign. Single colour (black).

Adapted for Survival

If you look up to the mountain, you can see fynbos growing wild on the steep upper slopes. Fynbos plants are tough; they survive long dry summers, strong winds and grow in sandy infertile soil. Look out for some of the ways in which fynbos plants are adapted to survive these harsh conditions.

Aangepas vir Oorlewing

Kyk na die berg. sien jy hoe groei die fynbos wild teen die steil hange? Fynbos is taai: hulle oorleef die lang, droë somers en stormwinde, en groei in arm sandgrond. Kyk of jy kan uitvind hoe fynbosplante aangepas is om in hierdie stranne toestande te oorleef.

Iyakwazi ukumelana neemeko ezinzima

Ukuba ngaba unolujonga phaya phezulu entabeni uya kukumisa ukuba kukho izityalo zifynbos ezizihla emioetlukeni yamathambeka. Izityalo zefynbos zomelele kukhule ziyakwazi ukumelana nokoma kwasehlotyeni neminyaka emihlanu kwaye zizihla kwimihlaba ebuntlabathi engqityanga. Qwalasela ezinye zemilela ezikulangilelwe ngazo ezi ziyabo ukumelana nezid meko zinzima.

Water waders
Many shrubs have tiny leaves. This minimises the leaf surface area from which water is lost by transpiration.

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Many shrubs have tiny leaves. This minimises the leaf surface area from which water is lost by transpiration.

Proteas have leathery leaves
which are covered by a thick cuticle (skin). This helps to reduce water loss.

Internal support
Many fynbos plants such as restios have special strengthening cells which prevent the plant from wilting.

Hiding underground
Many bulbous plants escape the dry season by going dormant (surviving in a resting state) during summer.

thick, waxy epidermis
ring of strengthening cells

The title of this sign says it all: it summarises the theme. Plants are adapted for survival. Notice how the first line establishes a link between plants in the garden and those growing wild on the mountain. The horticulturist was asked to plant examples of the four types of adaptations within a few metres of the sign.

300 x 600 mm aluminium sign. Single colour (black).

No fire = No fynbos

Fire keeps fynbos alive. It returns valuable nutrients to the soil and clears old vegetation to make space for new growth. However, if fynbos burns too often, plants do not have a chance to produce seed. Less to fifteen years between fires usually gives fynbos plants enough time to build up a seed reserve.

Geen Veldbrande = Geen Fynbos

Nous verstaan fynbos as voorsienbaar. Dit wil sê dat die natuurlike voedselkringloop sê dat die grond as gewoonlik, na hoër as om die tyd te maak vir nuwe groei. Maar te veel veldbrande verhoed plante om seed te vorm. In tydperk van vyftien tot vyftien jaar tussen veldbrande gee fynbosplanten genoeg tyd om seedreserwe te bou.

Ukungabikho komlilo = Ukungabikho kwefynbos

Umlilo ulondolo ekuqaleni kwefynbos. Ukuqalala emahlaba kanti-sonde, zamhamba ezimbini, wenza ukuba izinyo ezizela zivulele umoya ozokhulayo. Kumbi ke si fynbos isoba cho loo nto-canza izinyo zingabi nakukwazi ukunika imibono, izithaba zamagulu ehlukum elinebuleni okanye elinebuleni phantsi kokuba kuqhindele kuthi siba ngokunika izinyo zezinyo: izitha elandelayo kokuphelela imibono ngokwazi kwefynbos.

Plants that are killed by fire must regrow from seed. Many seeds only germinate when stimulated by smoke or the heat of a fire.

Some plants can regrow after fire from an underground bulb or rootstock.

NBI Scientists make a major discovery!

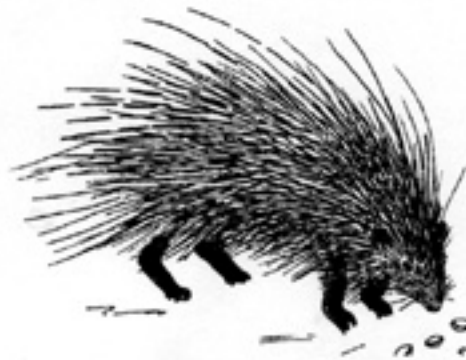
In 1990 researchers at the National Botanical Institute discovered that many fynbos seeds need smoke to germinate. A special smoke extract has now been developed to enable gardeners and nurseries to propagate fynbos plants from seed.

Bulbs such as the Fire Lily flower immediately after a fire.

The theme of this sign is that fynbos vegetation needs occasional fires. The main text is short and concise (58 words), and additional information is given in the illustrations and captions. Notice the reference to an exciting discovery made by scientists from the organisation. It is good to inform visitors about the importance and relevance of your organisation's achievements.

300 x 600 mm aluminium sign. Single colour (black).

A Porcupine was Here!



Porcupines come
at night and dig
for juicy bulbs,
roots and tubers.

'n Ystervark was hier!



Porcupines are regular visitors at Kirstenbosch NBG. They come at night and dig for juicy bulbs and roots, leaving untidy holes where they have been. A simple plant label has been used to explain the presence of these holes and dug-up bulbs.

100 x 150 mm aluminium label on a galvanised steel peg. Single colour (black).



Focus rings can be attached to interpretive labels to draw attention to something small or difficult to see. In the Desert Botanic Garden (Phoenix, USA) they have used a focus ring to draw attention to a small cactus growing in the shade and shelter of a bigger bush. Notice that both the label and the subject are close to the path, where it's easy to read and see.



Telescopes help visitors to focus on far-away subjects. In the Desert Botanic Garden (Phoenix, USA) they have used a simple metal tube to frame the subject of the sign – viz. a bird nest in a barrel cactus. It was not necessary to have a glass eyepiece in the tube because you can easily see the nest with the naked eye. Telescopes are provided at two heights – one for adults and one for children.

USEFUL RESOURCES

Books

Filmer, Rob and Julie (1998). *Giving people with disabilities the opportunity to enjoy our natural heritage*. Eco-Access publication. (address below)

Ham, Sam (1992) – *Environmental Interpretation – a practical guide for people with big ideas and small budgets*, North American Press, USA.

Leadlay, Etelka and Greene, Jane (Eds.) (1998) – *The Darwin Technical Manual for Botanic Gardens*. Botanic Gardens Conservation International (BGCI), London. This manual contains an excellent chapter on interpretation in botanical gardens.

Roff, John (1995) – *Making Meaning – trail tips for environmental educators*, Share-Net. (contact details below)

Ryan, Tom (1995) – *Connecting with Visitors*, Douglas/Ryan Communication, 2153 48th Avenue, San Francisco, CA 94116, USA.

Van Wyk, Ben-Erik and Gericke, Nigel (2000) – *People's Plants – a guide to useful plants of southern Africa*, Briza Publications, PO Box 56569, Arcadia, 0007, Pretoria, South Africa.

Van Wyk, Ben-Erik, Van Oudtshoorn, Bosch and Gericke, Nigel (1997) – *Medicinal Plants of South Africa*, Briza Publications, PO Box 56569, Arcadia, 0007, Pretoria, South Africa.

Organisations

Eco-Access – Rob and Julie Filmer, PO Box 1377, Roosevelt Park, 2129, South Africa. Tel: +27 (0)11 477 3676, fax: +27 (0)11 447 3675, website: <http://www.linx.co.za/eco-acc>, email: eco-acc@cis.co.za. Eco-Access is an organisation which aims to create sustainable links between people with disabilities and the natural environment.

Environmental Education Association of Southern Africa (EEASA) – PO Box 394, Howick 3290 South Africa. Tel +27 (0)33 330 3931, Fax +27 (0)33 330 4576, email: eeasa@futurenet.co.za, website: www.info-net.net/eeasa

National Association for Interpretation (NAI) – website <http://www.interpnet.org>, email: naiexec@aol.com.

Rhodes Environmental Education Unit – Rhodes Department of Education, PO Box 94, Grahamstown, 6140, South Africa. Tel: +27 (0)46 603 8389, fax: +27 (0)46 636 1495.

Share-Net – Wildlife and Environment Society of South Africa, PO Box 394, Howick, 3290, South Africa. Tel: +27 (0)33 330 3931, email: sharenet@futurenet.co.za. A wide range of inexpensive environmental education resources are available through Share-Net. These materials are available copyright-free to support the local adaptation and development of educational materials.

SADC Regional Environmental Education Programme – Tel: +(0)33 330 3931, email: sadc-reec@futurenet.co.za. Supports training, educational resources and networking processes in the SADC (Southern African Development Community) region.