

What about planting a tree?

The idea for Arbor Day originally came from Nebraska. When visiting the state today one would not find evidence that the area was once a treeless plain. Yes it was a lack of trees there that led to the founding of Arbor Week in the 1800s.

Arbor Day in South Africa

Historically, South Africa did not have a culture of tree planting and it was in the 1970's that a real need to promote tree planting was recognised.

The concept of National Arbor Day ensued from the 1973 Green Heritage Campaign.

National Arbor Week

Forests and Water



Following requests from various organisations and institutions, the former Department of Forestry obtained approval in 1982 to celebrate National Arbor Day from 1983. In 1996, the Minister of Water Affairs and Forestry, emphasising the importance of tree planting in South Africa extended Arbor Day from one day to week. It has since been celebrated in South Africa from 1-7 September annually.

Arbor Week is a national campaign initiated to celebrate South Africa's trees and to raise awareness about their importance. The theme for Arbor Week 2017 is "Forests and Water" - The theme is retained from last years theme because South Africa has not escaped the effects of drought. This year the department would like to ask you to:

Protect our indigenous forests; help prevent veld and forest fires; plant a tree to green our country, mitigate against climate change; plant indigenous trees that save water; use water conserving methods when planting trees and integrate fruit trees into your food gardens.

How can you help to protect our indigenous forests?

Our forests are under threat from people who are careless with our heritage. Never cut down a tree in a natural forest and do not remove an animal or living plant without permission. Explain to others the importance of protecting our natural places.

How can you help to prevent forest fires?

Each year veld and forest fires destroy thousands of hectares of trees and grasslands. Many people are injured and even killed. Animals are endangered and people's livelihoods are destroyed. These fires also damage our economy by destroying valuable assets.

Do not light fires in the open air during winter time when it is dry. Do not be careless with flammable material. Report fires to your fire brigade or police station as soon as possible. Never drive or walk into an area that is on fire. If you are a landowner, it is recommended that you become a member of the local Fire Protection Association. Ask your local forestry office for details.

What about planting a tree?

Many places in South Africa are barren and lifeless because they do not have trees, gardens or plants. In the past, trees were not planted in township areas while suburbs have usually had trees growing for many years. We have to plant trees in every town, city and school in South Africa.

We need to plant a tree with every new home. We need to ensure that every clinic has trees. You can help by planting trees at home or working with your school, church, or local government to plant trees. Integrating fruit trees in your food garden can address household food security. Remember we are a water-scarce country, so use methods that conserve water to irrigate your trees.

National Arbor Week serves to promote awareness for the need to plant and maintain indigenous trees throughout South Africa, especially for the many disadvantaged communities who often live in barren and water stressed areas. It further intends to:

Raise awareness of South Africa's urban and rural greening initiatives. Promoting better understanding of trees, particularly indigenous trees and fruit trees.

Highlight the important role trees play in sustainable development and the livelihoods of people and their environment.

Encourage communities to participate in various greening activities within their own surroundings.

Furthermore, the aim is to encourage people to plant trees at various places so that they are not lost to us and future generations. Indigenous trees are a heritage to our society. They serve various purposes in our lives and in the lives of other living organisms. They provide important habits for survival of bird, animal and insects. Our indigenous trees form an important part of the tourist attraction areas of South Africa.

The following are some of the benefits derived from trees:

Trees benefits our lives, we may consider a number of products that we derive from trees such as building materials, paper, fibre, oils, gums, syrups, pharmaceutical products, fruit and nuts. We also recognise the visual benefits we reap from trees as leaves change colour from season to season, and small trees grow into larger trees.

Trees provide more than just products and ornamental beauty; they offer an almost endless list of environmental and economic benefits, some of which are crucial to our well-being.

Trees produce oxygen while using up carbon dioxide. Some scientists contend that the over-abundance of carbon dioxide in the earth's atmosphere will lead to the "greenhouse effect". Smog can be filtered by trees, ash, pollen and dust maybe trapped by a tree's foliage.

Soil is conserved by trees; falling leaves and needles decompose providing rich nutrients for the soil. The roots of trees prevent soil erosion and tree canopies reduce flooding and rainfall run-off. A tree's various parts absorb sound waves, deflect the waves in different directions, and thereby reduce the sound's intensity.

Properly placed evergreen trees act as a windbreak and an insulator.

In the winter, this can translate into lower home heating. Deciduous trees will if strategically placed provide shade to a home's roof and outside walls, can help reduce air conditioning costs in the summer.

Property values are enhanced by the beauty and charm of the landscape offered by trees. They break up the monotony of masonry, cement, metal and glass along city streets and sidewalks. Areas with trees often attract more people (e.g. tourists, customers). Recreational places benefit from the presence of trees.

Trees are a valuable resource providing both environmental and economic benefits. By planting even a single tree, or million trees the country can make a difference.

Each tree will help to contribute to cleaner air, lower energy costs, greater protection of our soil and water supplies, reduced noise levels, contribute to food security and a more ambient environment in which to live.

In addition to the planting of trees, emphasis is made to highlight the need for the conservation of forests and in particular indigenous trees that are threatened by extinction. To this end, the Arbor Week campaign will promote planting of two indigenous species that have been identified and named as trees of the year.

These trees are selected from commonly found trees and the rare tree species.

For 2017 the following two tree species have been selected as trees of the year:

Ziziphus Mucronata; Buffalo thorn (Common name: English).
This tree has been selected from the list of common species.

Euclea pseudobenus; Black Ebony (Common name: English).
This tree has been selected from the list of rare species.

Champion Trees Project

The purpose of the Champion Tree Project is to identify and protect trees that are of national importance and worthy of special protection, due to their remarkable size, age, aesthetic, cultural, historic or tourism value. Similar projects have been established in several other countries, but this is the first of its kind in Africa.

Nomination forms with guidelines for the nomination process are available from the DAFF. Every nomination cycle starts on 1 August each year, and ends on 31 July the following year. Seventy five trees and groups of trees have been declared by the department as Champion Trees, based on criteria such as size, age and historical value.

More trees have been shortlisted, and will be declared during 2017.

These trees are all protected under the National Forests Act of 1998.

They include the Tsitsikamma Big Tree along the Garden Route, the Post Office Milkwood tree of Mossel Bay, the Sagole Baobab tree in Limpopo and Camphor trees planted at Vergelegen Estate in the Western Cape three centuries ago.

The oldest planted tree in South Africa is a Saffron pear, brought from the Netherlands and planted in the Dutch East India Company's gardens in Cape Town more than three centuries ago.

Historic trees include a Poplar tree, which served as a landmark for refugees during the apartheid regime who found a safe haven in the Johannesburg house of Ruth Fischer, the daughter of Bram Fischer, who was a founding member of the South African Communist Party.

A group of international and local tree climbers has visited and climbed the champion trees around the country, contributing to more accurate height measurements, and installing nesting boxes for the rare Cape Parrot in some of the large champion trees that occur in natural forests.

All the trees were also visited by a professional photographer, to create a proper photographic record of the trees, which will also be used for the publication of a book on the champion trees within a year.

Trees and climate change

It is now well known that global climate is changing and that it is likely to continue changing for many years to come. Climate change brings about unusual weather, droughts, floods, melting of the permanent ice of the north and south poles as well as rising ocean levels. All this is the result of air pollution caused by human activities.

One of the main pollutants responsible for this phenomenon is the greenhouse gas Carbon Dioxide (CO₂). Greenhouse gasses have the ability to trap the sun's heat in the atmosphere and so prevent the earth from cooling down. This is referred to as the greenhouse effect, which is important for maintaining life on earth, but which is also very dangerous when it is enhanced beyond the delicate balance that is required for life on earth as we know it. Carbon Dioxide is emitted when most materials burn and when living creatures breathe.

Green plants are a vital defence against climate change because they have the natural ability to remove CO₂ from the atmosphere and store the carbon as biomass. Trees are especially valuable because they produce wood, in which large quantities of carbon is locked up for many years. To put this into perspective; one hectare of forest growing at the rate of producing 10m³ of wood per year will be removing carbon to the equivalent of 14 million m³ of air. One can visualise this as a column of air 1.4 km deep over an area of forest the size of two soccer fields.

Do keep in mind that trees do not all grow equally fast, and all forests are not equally productive as carbon sinks. Trees in urban environments and commercial forestry plantations are generally quite fast growing and are therefore active carbon sinks. Under favourable conditions some plantations can achieve average annual growth rates of 20m³ per hectare.

Forests and the Economy

According to Forestry South Africa, forestry is estimated to contribute about 146 000 jobs, predominantly in rural areas where there are high levels of unemployment. This translates to about 11.5% of job losses in the sector due to factors of production affecting profitability throughout the value chain. The contribution to the economy is estimated at R 45.5 billion. This translates to 7.7% of Manufacturing GDP and 25.5% of Agricultural GDP, including Pulp and Paper. It is through commercial plantations that timber is produced for construction, mining, furniture, paper production and other beneficial timber related enterprises.

THEME: FORESTS AND WATER

Forests filter and purify water. The leaves and root systems of trees can trap or convert harmful toxins, helping to prevent impurities from entering water systems. Continuous development and urbanization in South Africa will eventually mean that this role played by trees is reduced, if reforestation measures are not put in place. Forests also control sedimentation, which can cause water pollution, destroy habitats and fill up reservoirs and trees help stabilise sediments. Forests also protect habitat through tree cover which serves to shelter breeding ground for aquatic species, providing them with nutrients whilst cooling the water temperature - reducing the need for chemicals in aquaculture.

Forests and Water Quantity

Forests form an important part of the water cycle, they increase rainfall through evapotranspiration from the plant leaves as water is transferred into the atmosphere and then expands cloud cover which increases rainfall overtime. Forests also increase vegetation density, and the tree canopy can block rainwater from reaching the ground. This can be both good and bad depending on the soil, vegetation types, climate, regional rainfall, topography, forest and watershed degradation as well as land management.

Forest systems help to absorb rainfall, preventing erosion and flooding. This can however also be detrimental in dry areas where water supply can be reduced. What can help in these areas is careful and strategic reforestation to maximise benefits and avoid any unintended impacts.

Source : Hamilton, L.S. 2008. *Forests and Water*. FAO, Rome.

South Africa is a water scarce country because of erratic and low rainfall in the greater portion of the country. Therefore it is crucial that consumers maximize water efficiency. The following are tips to improve water efficiency in dry land cultivation:

Conservation tillage to improve water infiltration and storage, and reduce runoff. Reducing surface evaporation through practices such as mulching. Elimination of soil compaction to enable plants to use subsoil water. The following measures can be put in place to maximize water efficiency: Rain water harvesting to irrigate during dry season. Use of grey water to irrigate gardens. Care should be taken in using grey water. Strong detergents should not be used because they can harm plants. Water for bathing and washing dishes is suitable to use for irrigation. Water from other sources might not be suitable for irrigation.

Check with your local advisory office

Partnerships in Arbor Week and greening

Tree planting, including the development of parks and recreational facilities can be expensive when done on a large scale. For this reason, it is necessary for good partnerships between government, the corporate sector, non-government organisations and communities to work together in greening our country. The Department of Agriculture, Forestry and Fisheries has established a good working relationship and partnership with Total South Africa in greening our country and promoting Arbor Week. The partnership has been in place for over ten years and has resulted in numerous projects being initiated.

These include small community parks, orchards, school greening projects, assisting with water tanks where there are problems with water. Total South Africa supports the Million Trees Programme and the Arbor City Awards Competition. Through their support, many of the greening interventions have been realised.

This shows that working together we can take greening forward in this country. This function should not be seen as the government's role alone.

For further information on Arbor Week, including the programme of events, posters and leaflets please contact the department.

For further information please contact the Arbor Week Co-ordinator (Mr Mike Modise at 012 309 5787)

1 ZIZIPHUS MUCRONATA

FORESTS AND WATER

DESCRIPTION

ORIGIN:

Grows throughout the summer rainfall areas of sub-saharan Africa, extending from South Africa to Ethiopia and Arabia; in a wide range of habitats such as woodlands, scrubland, rocky koppies, open grasslands, alongside streams, in valley bottoms and forest margins.

ECOLOGY:

It is regarded as an indicator of ground water. The leaves and fruits of the tree are sought after by birds, wild animals and domestic stock.

Giraffes are known to be especially fond of the leaves of this tree whilst Impalas often feed on the dead leaves lying under the tree.

It's flowers produce abundant nectar and often yield good honey.

FLOWERS, FRUIT AND LEAVES

Flowers are green to yellow and come in dense clusters and are bisexual. Fruit is round, reddish brown glossy drupe with a dry pulp and often remain on the tree after the leaves have fallen.

Leaves are simple, alternate or in tufts and pointed, they are glossy green above, slightly hairy and pale below, turning yellow in autumn.

USES:

Z. mucronata has many uses which include its edible fruits which are used to make porridge, beer and pulp used to make flour, whilst seeds can be used as a coffee substitute.

The tree is also used in traditional medicine to treat ailments such as stomach aches, skin ulcers, and chest problems. A paste of the leaves can be used to treat boils and glandular swellings. Culturally the tree is termed a burial tree, planted to surround the body and branches used to attract ancestral spirits. Leaves can also be chewed as an aphrodisiac.

APPEARANCE:

Has a spreading canopy and the main stem is green and hairy when young.

The bark is reddish brown or roughly mottled grey, cracked into rectangular blocks.

This tree has distinctive zigzag twigs that carry thorns that come in pairs, one facing forward, the other facing backwards.

REFERENCES:

Lemmens, R.H, Louppe, D and Oteng-Amoake, A.A. 2012. Plant resources of Tropical Africa 7(2). Timbers 2 PROTA Foundation, Wageningen, Netherlands.
Van Wyk, B and Van Wyk, P. 1997. Field guide to Trees of Southern Africa. Struik, Cape Town.

CULTIVATION:

The species can be grown easily from seeds or cuttings in just about any soil type; the tree can withstand intense high and low temperatures as well as drought; however the seeds should be sown fresh because they have poor keeping properties.

This tree is ideal to plant in wild gardens, rock and small gardens as it attracts birds and insects such as butterflies, beetles and bees. Also ideal to plant as a hedge and it also makes a pleasant shade tree.

FACTS AT A GLANCE

SCIENTIFIC NAME: *Ziziphus mucronata*

COMMON NAME: Buffalo thorn

SIZE: Small to medium tree of 3 -10 m

WATER REQUIREMENTS: Drought tolerant

LEAVES/FLOWERS: Glossy green, simple, alternate leaves that vary in size from tree to tree; green to yellow flowers that come in clusters.

FEATURE: Reddish brown or roughly mottled grey bark, distinctive zigzag branchlets and thorns that come in pairs.

MAINTENANCE: Low maintenance.

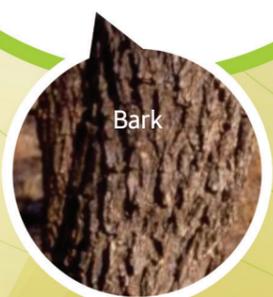
Twig, Leaves and Thorns



Fruit



Bark



2 EUCLEA PSEUDEBENUS

EUCLEA PSEUDEBENUS

DESCRIPTION

ORIGIN:

Widespread in the western parts of South Africa, extending to the southwestern, central and northern parts of Namibia and southern Angola.

Mainly found in harsh, stony and sand deserts and semi-deserts areas, in dry rivers, on plains and floodplains or around pans.

ECOLOGY:

The tree is pollinated by insects and the fruits are relished by birds, baboons and antelopes which also help with seed dispersal.

Leaves are browsed by wild and domestic stock.

Its drooping form and structure creates good shelter for insects, birds and mammals particularly in summer.

FLOWERS, FRUIT AND LEAVES

The flowers of this tree are small, bellshaped and hardly noticeable but with a distinct fragrance. They are greenish yellow or cream coloured. Fruit is a rounded, thinly fleshy berry that starts of green in colour turning black when ripening.

The leaves are simple, linear and leathery in texture, blue green above and pale olive green below.

USES:

The ebony tree produces edible fruits that are juicy, sweet and slightly astringent. In tradition medicine, the roots of the tree are used for ailments such as headache and toothache.

The roots and branches can also be used as chewing sticks to clean teeth, whilst the wood is generally used for furniture, carpentry, carving as well as firewood.

APPEARANCE:

Has a spreading canopy and the main stem is green and hairy when young.

The bark is reddish brown or roughly mottled grey, cracked into rectangular blocks.

This tree has distinctive zigzag twigs that carry thorns that come in pairs, one facing forward, the other facing backwards.

CULTIVATION:

Best grown from seed which must be allowed to ripen completely after the fruits have blackened and fallen to the ground. Seedlings grow rapidly at about 60cm tall in a year, and in the process develop long tap roots which make it not ideal to transplant.

When sowing the seeds a soil combination of river sand, loam or decomposed compost and fine milled bark is recommended. This tree is ideal for small dry gardens or sunny areas.

REFERENCES:

Mannheimer, C and Curtis, B. 2009. Le Roux and Muller's field guide to the trees and shrubs of Namibia. Macmillan, Windhoek.
Van Wyk, B.-E and Gericke, N. 2000. People's plants. Briza Publications, Pretoria.

Fruit



Bark



FACTS AT A GLANCE

SCIENTIFIC NAME: *Euclea pseudobenus*

COMMON NAME: Ebony tree/Wild ebony

SIZE: Shrub/medium to large tree of 3-10m

WATER REQUIREMENTS: Drought tolerant

LEAVES/FLOWERS: Evergreen, spirally arranged leaves that are bluish green to grey green; flowers are bellshaped greenish yellow or cream coloured.

FEATURE: Slender drooping branches, branchlets often hang down the length of the tree.

MAINTENANCE: Low maintenance.

Leaves



Flowers

