



Prevention is better than cure: SANBI's Invasive Species Programme

This edition of SAPIA News highlights three invasive species which have been declared as category 1a under the National Environmental Management: Biodiversity Act (NEMBA). These species require compulsory control and eradication and are targets of SANBI's Invasive Species Programme (ISP).

Considerable work has been done in locating and mapping the populations and in researching various methods of control. The public can assist these programmes by reporting any populations that have not yet been detected by the ISP.

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Lindenleaf sage: control this invader!



Lindenleaf sage, *Salvia tiliifolia*, recently listed under NEMBA as a category 1b invader, is becoming a menace in many parts of the country. It forms dense stands in both sunny and partially shaded, disturbed sites.

It is an annual herb and should be prevented from seeding. It is in full flower now and starting to seed. Plants are easily hand-pulled.

Read more on page 6.



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SAPIA newsletters are posted at
ARC website: www.arc.agric.za and
Invasive Species Website: invasives.co.za

Kudzu vine (*Pueraria montana* var. *lobata*)

Bongani Mashele, Invasive Species Programme: EDRR, SANBI, Mpumalanga Regional Co-ordinator

Description...Kudzu is a deciduous, semi-woody, perennial vine with long-running, hairy stems up to 30 m long. It can scramble over the ground or climb over other vegetation and structures. Flowers are purple, blue or pink with a central patch of yellow, and produced in clusters of 10–40 cm in length. Leaves are trifoliate; each leaflet 8–18 cm long and 6–20 cm wide, and are usually slightly lobed. Pods are brown with long spreading hairs (Global Invasive Species Database 2010). Kudzu produces large underground tubers 60–90 cm long and its roots can extend for 5 m into the ground. It is capable of very rapid growth and can grow up to 10–30 m per growing season and up to 30 cm in a day (Blaustein 2001).

History...Kudzu vine was probably introduced into South Africa as an ornamental and for erosion control. The earliest record at the Pretoria National Herbarium is of a specimen collected in Mpumalanga at Brookland State Forest in 1985. It has since spread to Schagen valley between Sudwala and Rosehaugh. The most recently discovered population was found in Kaapsehoop and Queen's River Bridge. Populations have also been located in KwaZulu-Natal (Eshowe and Cedara) and Gauteng (Mamelodi). A population reported for Limpopo has not been located.

The problem...Kudzu vine twines itself around objects and forms dense mats. It invades forest margins and gaps, riverbanks and moist areas. It smothers indigenous plants and causes them to collapse. Its ability to grow quickly allows it to outcompete indigenous species. Young plants can be overlooked as they resemble soybean. In South Africa the infestation is currently estimated at just less than 150 hectares. In the United States, kudzu vine has been especially problematic in the southern parts of the country, where it was actively planted and control measures have cost billions of dollars.



Photo: L Henderson

Kudzu vine is listed as a category 1a invader under NEMBA and as category 1 under the Conservation of Agricultural Resources Act (Act No. 43 of 1983) (CARA). It is listed in the top 100 worst invaders in the world.

Kudzu vine continued

Research... has been conducted to determine the extent of kudzu populations; grazing by herbivores; vegetative reproduction, seed viability and pollination of flowers. Experiments have been done to determine the best control methods using several different herbicides.

Clearing efforts of the ISP: EDRR Programme..... Three teams comprising 12 people per team were appointed to clear kudzu vine in Mpumalanga from November 2012 to the end of March 2013. From November 2014 to March 2015 two teams did follow-up and initial work at Kaapsehoop. In KZN initial work was done between January and February 2015. Data on the effectiveness of the clearing effort is being collected with the aim of publishing a paper which is at an advanced stage.



Conclusions so far.... Eradication of kudzu vine is still a feasible option. Since large parts of the country are climatically suitable, the eradication of kudzu vine should be of high priority. Both chemical and manual treatments have been effective. Digging was the most labour intensive method, whereas foliar spraying was the most cost effective method. In areas close to water, digging was recommended. Follow up treatments are necessary for effective control. Control operations should be undertaken just after winter when the plants begin to resprout.

Future plans..... During the current financial year of 2015/2016, the programme aims to follow up the areas which have been cleared and expand operations to other populations to prevent further spread.

References

Blaustein, R.J. 2001. Kudzu's invasion into Southern United States life and culture. In: *The great reshuffling: human dimensions of invasive species*, pp. 55–62, McNeely, J.A., Ed., IUCN, The World Conservation Union, Gland, Switzerland and Cambridge, UK.

Global Invasive Species Database, 2010. *Pueraria montana* var. *lobata*. Available from: <http://www.issg.org/database/species/ecology.asp?si=81&fr=1&sts=&lang=EN> [Accessed June 2013]

What you can do to help and who to contact:

Report sightings of kudzu vine to SANBI's Invasive Species Programme and provide the following information:

exact locality (supply landmarks and GPS co-ordinates if possible) and infestation size

Mpumalanga Regional Coordinator: Mr Bongani Mashele Tel: 013-752-6504, e-mail: B.mashele@sanbi.org.za

Sightings can also be reported to: alienplants@sanbi.org.za

The ISP:EDRR is based within the South African National Biodiversity Institute and is funded by the Department of Environmental Affairs.



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Strangler cactus (*Harrisia balansae*)

Peter Shisani, Invasive Species Programme: EDRR, SANBI, Limpopo and North West Regional Co-ordinator

Description.....Strangler cactus (*Harrisia balansae*) is a succulent, scrambling cactus with 3- to 4-angled, spiny, unbranched stems. Spines are arranged in clusters, usually with one long spine (3 cm long) and several shorter spines (1–2 cm long). Its clambering growth habit allows the stems to climb up through trees, reaching heights of 6–9 m. It bears flowers that are tubular, pale yellow to white in colour, and opening at night. Fruits are bright red with conspicuous scales.

History.....In 2006, a small infestation of strangler cactus was discovered at Skuinsdrift about 10 km north of Groot Marico in the North West Province of South Africa. According to Dirk and Fritz van Rensburg, the recent Skuinsdrift Farm owners, this cactus spread from a rockery at an abandoned farmhouse. It has since covered an area of not more than 20 hectares on this farm.

Two new populations were recently discovered in Limpopo Province. One population was found on the farm California in Letsitele just outside Tzaneen by Mr Victor Themeli, Biocontrol Officer at Working for Water based in Tzaneen. This discovery followed an awareness campaign targeting landowners, farmers and the general public. Another population was found by Mr Peter Shisani infesting two farms (Mkleuw Farm Lodge and 26 Sussexvale) near Modimolle town during a road survey in April 2014.

The Problem.....Strangler cactus has the potential to develop into a serious invader because it dominates native plants and its dense growth obstructs access of livestock and game to pastures. Its seeds are produced in large quantities and are easily spread by birds and animals such as feral pigs. The seeds germinate shortly after rain. It roots and shoots easily whenever stems touch the ground. For these reasons, the SANBI-ISP wants to nip it in the bud and aims at eradication.

Control efforts by SANBI's ISP.....Initial control and follow-up treatments have been made in Groot Marico. Glyphosate herbicide has proven to be effective when stem-injected but a final evaluation will be necessary in 18 months time. Prior to stem-injection heavy infestations had to be chopped to make access and the chopped stems were collected, packed and sprayed with herbicide.

Future plans.....All new populations will be mapped in order to determine the total population sizes and the amount of resources (e.g. herbicide, labour) needed for their control. A best practice guide to the management of strangler cactus will be collated and distributed.



How can you assist?

Please report sightings of strangler cactus to Peter Shisani: P.Shisani@sanbi.org.za

Bilberry cactus (*Myrtillocactus geometrizans*)

Peter Shisani, Invasive Species Programme: EDRR, SANBI, Limpopo and North West Regional Co-ordinator

Description.....*Myrtillocactus geometrizans*, known variously as bilberry cactus, whortleberry cactus and rosyntiekaktus, is a succulent shrub or tree with bluish grey stems and a candelabra shape. It grows 4 to 5 m tall, with the crown reaching 5 m in width. Stems are 7 to 10 cm thick, with 5 to 8 ribs. Spines occur in clusters, with 1 central spine, 1–7 cm long, dagger-like, and 5 to 9 radial spines, 2–10 mm long. It can be easily confused with the indigenous *Euphorbia ingens*, which grows in similar habitats, but differs from bilberry cactus in having a milky latex. Flowers are cream or white and measure ~ 2 x 2.5 to 3.7 cm. Fruits are succulent berries, green, turning dark red, ~ round, 1 to 2 cm across, and contain many sticky seeds.

How does it spread?.....The succulent fruits are eaten by birds and other animals which spread the seeds. It can also spread from detached stems.

Where does it occur in South Africa?.....It has been recorded near Groot Marico in the North West Province; outside Alldays town near the Zanzibar border gate in Limpopo Province; near Steytlerville and in the Addo Elephant National Park in Eastern Cape; and at Prince Albert in the Western Cape.

Why is it a threat?.....Dense stands could impact native fauna and flora by changing habitat composition and could also prevent access of livestock and game to grazing.

What does the law say?.... Bilberry cactus is listed as a category 1a invader under NEMBA and requires compulsory control and eradication.

How can you assist?:

Reports of new localities will enable the Invasive Species Programme to take appropriate action before it becomes widespread.

If possible provide a locality description, photo of the plant and a GPS co-ordinate to: Mr Peter Shisani, Tel 012 843 5013/5000, Cell: 072 551 3528, E-mail: P.shisani@sanbi.org.za



Photo: H G Zimmermann

Photo: L Henderson

The ISP:EDRR is based within the South African National Biodiversity Institute and is funded by the Department of Environmental Affairs.

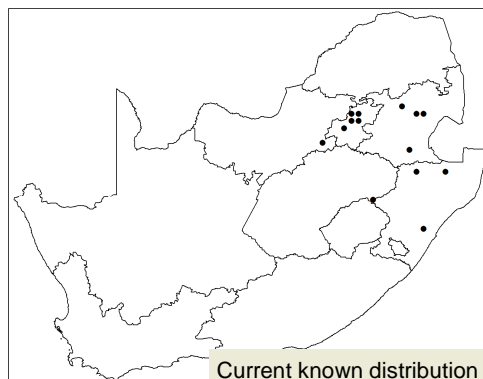
Lindenleaf sage (*Salvia tiliifolia*): control this invader!

Lindenleaf sage (*Salvia tiliifolia*) is an erect, shortly hairy, annual herb growing to about 1.5 m in height. It is native to Mexico, Central America and north-western South America. It is an ornamental plant and belongs to the mint family, Lamiaceae.

Its leaves are bright green, soft, and oppositely arranged; with each alternate pair at 90 degrees to the next. It flowers in late summer to autumn; the tiny blue flowers, 5–10 mm long, are arranged in spikes up to 25 cm long. The fruit is a small nutlet.

It invades roadsides, waste places, rocky hillsides, mountain grassland and woodland. It forms dense clumps particularly under the canopies of trees.

Plants are shallow-rooted and easily hand-pulled. The best time to control this invader is before it flowers and sets seed.



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The Weeds Research Programme of the ARC-Plant Protection Research Institute is responsible for research on the ecology and control of invasive alien plants in South Africa. These plants were introduced either intentionally (e.g. for ornamental use or agroforestry purposes), or accidentally (e.g. in livestock feed) and now threaten biodiversity and agriculture. In addition, they reduce run-off from water catchments, thus diminishing flow in streams, and adversely affect the quality of life of communities.

- Biological control
- Chemical control
- Bioherbicides
- Integrated control
- Monitoring the emergence and spread of invasive alien plants

Weeds Research URL:

<http://www.arc.agric.za/arc-ppri/Pages/Weeds%20Research/Weeds-Research.aspx>

see Plant Protection News

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