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SAPIA NEWS

SOUTHERN AFRICAN PLANT INVADERS ATLAS

Newsletter of the Southern African Plant Invaders Atlas, an initiative of the Weeds Programme of Plant Protection Research, an institute within the Agricultural Research Council (ARC)

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

Status of Biological Invasions in South Africa

South Africa has committed to producing a National Status Report on Biological Invasions by October 2017 and thereafter every three years. This will be the first status report at a national level specifically on biological invasions. A major contribution to the final report has recently been published as a special issue of 19 papers in the journal *Bothalia: African Biodiversity and Conservation* 47(2), http://www.abcjournal.org/index.php/ABC/issue/view/113

Here are some of the findings in the editorial by Wilson *et al* in *Bothalia* 47(2):

South Africa has a substantial alien plant invasion debt, with a high rate of new records of naturalisation and spread.

Improved co-operation in biosecurity within the African continent is needed to prevent introductions to the region and spread within the region.

Climate change and biological invasions are the two greatest threats to biodiversity on the Prince Edward Islands

More research on the impacts of widespread invasive plants is required if management is to be prioritised.

Assessments of the costs and effectiveness of control operations are seldom done.

Only 4% of municipalities are compliant with existing regulations.

Most animal taxonomic groups (notably invertebrates) are under-surveyed and under-studied.

SAPIA is one of the best atlas projects for alien plant species anywhere in the world and a major national asset for monitoring biodiversity threats.

South Africa has invested more effort than most other countries into the research and management of biological invasions in protected areas, but not enough is being done to address all species everywhere, both across parks and within a park.

South African legislation relating to invasive fish is among the most comprehensive globally. However, conflicts of interest and poor implementation of legislation reduce the effectiveness of such measures.

South Africa is (along with Australia and Spain) a global hotspot of cactus invasions, and a global leader in the management of invasive cacti.

Invasive aquatic weeds have had major impacts in South Africa that have been alleviated very efficiently by biological control.

South Africa is a world leader in the biological control of alien plants.

Although South Africa has effectively managed a few biological invasions (e.g. highly successful biological control of some invasive plants), the key challenge seems to be to establish and maintain a strong link between implementation, monitoring, reporting and planning.

Beautiful, but invasive European gorse (*Ulex europaeus*)

Kanyisa Jama, SANBI ISP, E Cape

The problem... European gorse (*Ulex europaeus*) is a thorny perennial shrub (**photo 1**) native to the temperate Atlantic coast of Europe and British Isles. This species is reported to be invasive in many countries, including New Zealand, Australia, California, Canada, Chile, Hawaii and South Africa. Gorse was introduced as a garden ornamental, hedge plant and for stabilising highway embankments. Gorse invades many natural ecosystems such as grasslands and low shrub-land vegetation, but it primarily invades disturbed habitats, pastures, open forests and roadsides. Once established, the species forms dense thickets that prevent light from reaching understory plants and in so doing out-competes the native vegetation.


1

How to identify...

Stems (photo 2):

- armed with conspicuous spines.
- can be either glabrous (smooth without hairs) or pubescent (hairy).

Leaves (photo 2):

- evergreen and acicular (needle-shaped).
- become reduced to scales or spine-like phyllodes as the plant matures.

Flowers and pods (photo 3 and 4):

- flowers are dark yellow, pea-like and are about 15-20 mm long.
- flowering occurs in spring, autumn or winter.
- pods are 10–20 mm long, green, becoming dark brown at maturity


2


3

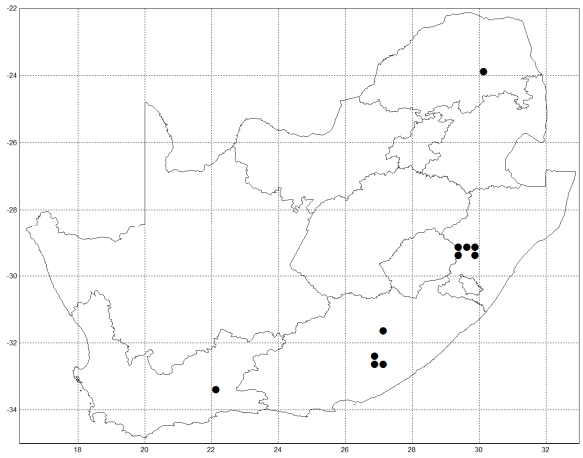

4

European gorse (*Ulex europaeus*)

History…. According to the Southern African Plant Invaders Atlas (SAPIA) gorse has been naturalised in South Africa since the 1920's. It is listed as category 1a invasive species under the regulations of the National Environmental Management: Biodiversity Act 2004 (Act No, 10 of 2004), meaning that it is an eradication target.

Managing the problem….SANBI's Invasive Species Programme (ISP) is implementing an eradication plan for this species. This includes a research study conducted from 2014 to 2016, which investigated the invasiveness of this species in South Africa and provided the scientific evidence that guides the eradication planning. Results from the study show that the species has the potential to become widespread in South Africa if not controlled, due to its high reproductive capacity and seed bank loads.

The ISP programme is currently implementing clearing programmes of the known populations by contractors employed by SANBI's Invasive Species Programme and is on-going. A long term management and monitoring plan is currently being developed.



European gorse has been recorded as invasive in Limpopo (Woodbush), KwaZulu-Natal (Estcourt, Ladysmith and Ulundi), Eastern Cape (Hogsback) and Western Cape (Swartberg Pass).

The distribution map shows records obtained from the Pretoria National Herbarium and SAPIA. Many of these records are historical but some have been recently confirmed.

What you can do to help:

Please report sightings of these plants to the Invasive Species Programme (ISP). Please provide us with a locality, GPS co-ordinates and photos. A staff member from the ISP will be in contact and visit the population to verify the sighting. It will then be included in the management plan.

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Pine cone cactus (*Tephrocactus articulatus*)

Kanyisa Jama, SANBI ISP, E Cape

The problem... Pine cone cactus (*Tephrocactus articulatus*) (**photo 1**) is an invasive species belonging to the *Cactaceae* family and is originally from Argentina. The species was introduced to Phoenix, Arizona, where it has become invasive. It is believed that this species was introduced to South Africa through the horticultural trade and now it has naturalised from garden escapees.

Pine cone cactus invades disturbed sites and rangelands (**photo 2**) in the arid interior of South Africa and it is recorded in many small towns and farming areas of the Northern, Eastern and Western Cape. It is listed as category 1a invasive species under the regulations of the National Environmental Management: Biodiversity Act 2004 (Act No, 10 of 2004), meaning that it needs to be managed and eradicated from South Africa.


1

Description... Dwarf shrub, erect, up to 20–30 cm tall. Cladodes/stem segments usually 2.5–5 x 2.5–5 cm, easily detached; glochidia dark brown or maroon, conspicuous; spines lacking or in groups of 1–4, up to 50 x 7 mm, flat, papery or raffia-like, pale brown or white (**photo 3**). Flowers 3–4 cm in diameter, white or pale pink (**photo 4**)


2


3
Photo: L Henderson


4
Photo: H Kaplan


5

How does it spread? The species spreads by detached cladodes that root and grow forming dense thickets (**photo 5**). Humans are the other main source of spread as this plant is a garden ornamental.

Pine cone cactus (*Tephrocactus articulatus*)

Managing the problem

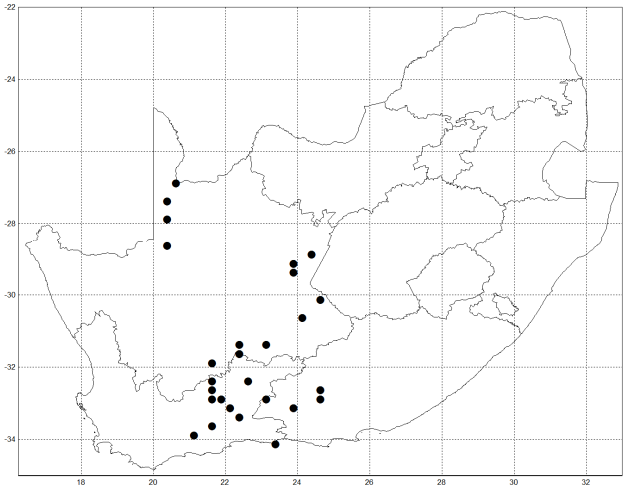
SANBI's Invasive Species Programme (ISP) initiated work on this species in 2009. The first task was to find populations and confirm populations documented in the Southern African Plant Invaders Atlas (SAPIA).

Finding new populations

A communication strategy was implemented from 2012 to date to encourage the public to report new sightings of the species. The strategy included engaging with land owners, land managers, land users and residents of the affected areas. Articles were published in local newspapers, motivating the public to report new sightings of the species. Posters and flyers were distributed in agricultural shops and to landowner forums.

Managing the infestations

All reported populations are chemically treated. Trained contractors from Working for Water are employed to chemically treat these plants and gather data on this species. The ISP programme is clearing and monitoring populations in several towns in Eastern Cape (Jansenvlle, Merweville, Klipplaat, Aberdeen and Graaff-Reinet), Western Cape (Beaufort West, Prince Albert) and Northern Cape (Victoria West, Leeu Gamka). All cleared sites are monitored to ensure that any re-growth is managed.



Distribution of pine cone cactus in South Africa (SAPIA database)

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Plant Protection Research

The Weeds Research Programme of the ARC-Plant Protection Research (PPR) is responsible for research on the ecology and control of invasive alien plants in South Africa.

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