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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 the Plant Protection Research Institute, within the Agricultural Research Council (ARC)

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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NEMBA Alien and Invasive Species Regulations come into effect

The Alien and Invasive Species Regulations—promulgated under the National Environmental Management: Biodiversity Act (10/2004) (NEMBA)—came into effect on 1 October 2014.

The National List of Invasive Species for South Africa totals 559 species under four different categories and includes 383 plants, 15 fish, 35 reptiles, 24 birds, 7 amphibians (frogs and toads) and 41 mammals. A further 560 species are listed as prohibited and may not be introduced into the country.

The regulations, as a first priority, are aimed at preventing the introduction of potentially invasive species into the country. The second major focus is on the early detection and rapid response to emerging invasive species which are in category 1a and require immediate control by all landowners.

The third major focus is to address the established invasive species that are most destructive, which are in category 1b. The need here is to ensure that coherent control programmes are run, and the gains maintained.

Category 2 includes species of value such as commercial plantation trees and fish-farming species, and require permits for utilization. These species require control outside of the specified areas allowed for utilization.

Category 3 are invasive species which may remain in prescribed areas or provinces. Further planting, propagation or trade is prohibited.

All listed invasive plant species occurring in riparian and wetland areas must be controlled and are effectively category 1b in these habitats. The importing, growing, breeding, propagating, releasing, moving, selling and spreading of all listed invasive species is prohibited except for permitted category 2 species.

Download the full regulations and species lists at www.invasives.org.za/legislation.html

Solidago species (goldenrods) have been reported as naturalised in South Africa for the first time. An extensive infestation of *Solidago altissima* (above) was reported by Graham Grieve in February 2013 near Weza in southern KwaZulu-Natal. *S. gigantea* was discovered at the bottom of Sani Pass by Dr Jesse Kalwij in February 2014. See pages 4–5.

Cape Town's Early Detection, Rapid Response Programme

Ulrike Irlich, City Of Cape Town–Invasive Species Unit, Project Manager: EDRR, email: ulrike.irlich@capetown.gov.za

Introduction

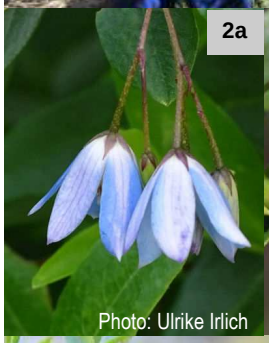
The City of Cape Town's Early Detection, Rapid Response (EDRR) programme is a partnership between the South African National Biodiversity Institute (SANBI) and the Natural Resources Management Programmes (NRMP–Working for Water). Its aim is to identify and manage emerging invasive species throughout the Cape Peninsula. It is a citizen science programme which relies on the residents of Cape Town to report sightings of any of the target species as well as potential new invaders, by joining the Spotter Network, an online reporting tool allowing for the location to be recorded and provisional identity of invasive species to be reported directly to the unit using this website: www.capetowninvasives.org.za.

The programme employs local, specialized teams (**photo 1**) that are responsible for clearing all plants recorded on the Spotter Network. We encourage the public to engage with the programme, through either requesting presentations or information sessions or by acting as observers and reporters for new and potentially harmful invasive species. Further information on the EDRR programme and the importance of your contribution in tackling the problem of invasive species, is obtainable from the Facebook page https://www.facebook.com/ctinvasives.


1
Photo: Ulrike Irlich

Bluebell creeper

The most recent addition to the target list of emerging invasive species is the bluebell creeper (*Billardiera heterophylla*) which is a category 1a listed invasive plant under NEMBA's Alien and Invasive Species Regulations. It is native to south-western Australia and was introduced as an ornamental. It is a medium-sized climbing shrub. The branches climb and twirl around other plants and man-made structures. It has dark green, glossy leaves about 50 mm long.


2a
Photo: Ulrike Irlich


2b
Photo: Ulrike Irlich

Flowers appear from spring to summer and are usually blue-mauve in colour (**photo 2a**), but some plants produce pink or white flowers (**photo 2b**). Each flower is bell-shaped with five petals and they occur in drooping clusters of 1–5 flowers at the tips of the branches. The fruits are green turning purple-green, cylindrical in shape and about 20 mm long (**photo 3**). Each fruit contains numerous (around 200) small reddish-brown, sticky seeds.


3
Photo: Ulrike Irlich

The City of Cape Town, together with SANBI's Invasive Species Programme, is conducting research on the only known population so far found in Hout Bay, and is conducting trials to determine the most effective way to eradicate these plants.

Red-flowering tea tree

Another problem plant species is hillock bush or red-flowering tea tree (*Melaleuca hypericifolia*). It is a category 1a invader under NEMBA and is originally from New South Wales, Australia. It is a small tree or large shrub, growing to 4.5 m tall, and has the potential to alter ecosystems and compete with native fynbos, in particular proteas. The small orange-red flowers (**photo 4**), are borne on showy, dense spikes from spring to early summer.


4
Photo: T. Rossenrode

Currently two established populations are known on the Table Mountain Range. The Hout Bay population has been cleared and monitored for two consecutive years since 2012, whereas the De Waal Drive population has only recently been discovered and the first follow up clearing will take place within the next month. This again is a combined monitoring programme between the City of Cape Town and SANBI's ISP programme.

City of Cape Town: EDRR

Devil's beard or red valerian

Devils' beard or red valerian (*Centranthus ruber*) (**photos 1–5**) is another problematic species found within the Cape Metropole. It is a small perennial, 50–80 cm tall, with deep pink to magenta flowers—tubular at the base and expanding at the tip—which can sometimes be white. Native to Mediterranean Europe, it was introduced as an ornamental plant and has now jumped the garden fence and is invading roadsides and urban spaces and is also moving into the fynbos. Its capacity to compete with indigenous vegetation, fire retarding abilities and widespread dispersal via profuse seed production, makes it of particular concern in our region. It is a category 1b invader under NEMBA which means that it must be controlled and landowners must comply with a management programme if this has been implemented.


1 Photo: L Henderson


2 Photo: invasive Species Unit, Cape Town


3 Photo: L Henderson


4 Photo: L Henderson


5 Photo: L Henderson

Purple loosestrife

Purple loosestrife (*Lythrum salicaria*) is an upright, herbaceous perennial (0.5–3.5 m) with attractive, bright pink to purple flowers in long spikes during summer (**photos 6 & 7**). The species is native to Eurasia but has become a problematic invasive alien plant in rivers and wetlands across large areas of the USA and Canada. By 2001, this species covered a total area of 120 000 ha in North America. In South Africa, its presence was first recorded in 1998 on the Liesbeek River in the Western Cape. Purple loosestrife is an aggressive competitor and displaces native vegetation to form monospecific stands. It is a category 1a species under NEMBA and requires compulsory control. A treatment and monitoring project was started in 2010 on the Liesbeek population.


6 Photo: ISP


7 Photo: ISP

The EDRR programme invites and encourages all members of the public :

to report sightings of the aforementioned species, or other target species listed on the website:
www.capetowninvasives.org.za

to aid us in fast removal and control of the invasive threat to our beautiful native ecosystems.

Weed Alert: Goldenrods (*Solidago* spp.) in KwaZulu-Natal

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Most goldenrods (*Solidago* spp; Asteraceae) originate from North America where they occur in prairies and in the understory of young forests. Due to their attractive, bright-yellow flowers *S. gigantea* Aiton (**photo 1**) and *S. altissima* L. (**photo 2**) were introduced to Europe in the mid-1700s. Nowadays these goldenrods are considered to be amongst the most aggressive transformative species of European grasslands. In February 2014 the first naturalised population of *S. gigantea* was discovered in Sani Pass, KwaZulu-Natal (Kalwij *et al.* 2014). In addition, a large naturalised population of *S. altissima* was discovered in a pine plantation near Ngeli Mountain in the Weza Forest Reserve (**photo on page 1**) and a small one in Hilton, both KwaZulu-Natal.

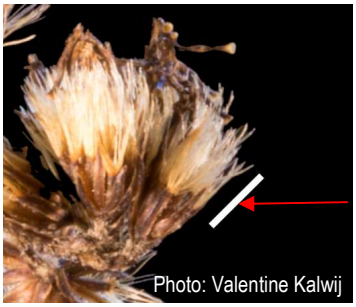
Solidago gigantea in flower. Sani Pass, KwaZulu-Natal

The typical pyramidal shape of a *Solidago altissima* inflorescence

The two goldenrods are closely related taxa (subsection *Triplinervae*). Both belong to the *S. canadensis* complex, are highly variable in their appearance and have an unclear taxonomic status. The vernacular names of *S. gigantea* (giant goldenrod, late goldenrod, early goldenrod, smooth goldenrod, tall goldenrod) and *S. altissima* (late goldenrod, tall goldenrod) overlap too much to be reliably used, which is why we prefer to use the scientific names here. Both can grow as high as 200 cm with a conspicuous broad pyramidal panicle consisting of a central axis and recurving branches. The two species can be distinguished as follows (Semple & Cook 2006):

Solidago altissima has a pubescent stem, at least in the upper part (**photo 3a**). Pappus* length 2.5–3.5 mm. Underside of leaves often pubescent.

Solidago gigantea typically has a glabrous stem and a glaucous appearance (**photo 3b**). Pappus length 2.0–2.5 mm. Underside of leaves often glabrous. This species tolerates moist habitats much better than the other.



Pappus*: a tuft of bristles that crowns the fruit and aids in dispersal of the fruit.

The typically pubescent stem of *Solidago altissima* (**3a**), and the glabrous stem of *S. gigantea* (**3b)**

Weed Alert: Goldenrods (*Solidago* spp.) in KwaZulu-Natal

Invasive behaviour and control: Goldenrods can produce a large number of wind-dispersed seeds, making them very effective long-distance dispersers. Once established the strong perennial rhizomes ensure that individual plants are effectively protected against unsuitable climatic conditions and fire. These traits, combined with the known invasive character of these species in European grasslands, suggest that goldenrods can become transformative invaders in South Africa too. Both these species are listed in the *Global Compendium of Weeds* (Randall 2012). It is therefore of great importance that new populations are detected at an early stage of their development. Large populations are best controlled using biannual mowing in combination with sowing of native vegetation (Meyer & Schmid 1999; Kabuce & Priede 2010).

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Randall, R.P. 2012. A global compendium of weeds. Second edition. Department of Agriculture and Food, Western Australia.

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If you see either of these species, please report localities to the ISP: EDRR at invasivespecies@sanbi.org.za (Tel: 031 207 6480/2)

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EXPANDED PUBLIC WORKS PROGRAMME
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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

for current news from the Weeds Research Programme