



SAPIA NEWS

SOUTHERN AFRICAN PLANT INVADERS ATLAS

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ARC-Plant Protection Research Institute

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SAPIA progress and appeal for public participation

This issue of SAPIA News reports back on a survey of weeds and invasive plants of the West Coast in October 2007. Of particular interest was the discovery of a previously unrecorded species of prickly poppy or *Argemone* and the alarming spread of stative, a florist's favourite, in the famous west coast wildflower region—read about these and more on page two, three and four.

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You are invited to participate in the SAPIA phase II project.

Submit records online at :
Weeds and Invasive Plants website
www.agis.agric.za/wip

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SAPIA needs your support!

Please submit records to the Weeds and Invasive Plants website
www.agis.agric.za/wip

A user-friendly template has been designed for entering records—under 'Add invader locality'.

Public participation is vital to the SAPIA II project. If you should have any trouble in submitting records at the WIP site then rather e-mail them to Lesley Henderson at Henderson@sanbi.org.

Pompom weed alert!

Pompom weed (*Campuloclinium macrocephalum*) has emerged after the winter break and will be flowering earlier than usual following the very good rains in the summer rainfall region. **Now is the time to take steps to control this weed!**

The Pompom weed webpage is fully functional and can be accessed at the ARC homepage (www.arc.agric.za).

The webpage provides assistance in distinguishing pompom weed from similar-looking indigenous and alien plants, information on chemical control, progress with biological control, contacts in the national Department of Agriculture for law enforcement, research projects and current distribution of the weed.

The public is urged to submit new localities of the weed to WIP.



News from the West Coast: alien wildflowers

A previously unrecorded species of prickly poppy was discovered in the Velddrif region and has been provisionally identified as *Argemone albiflora* subsp. *texana*, white prickly poppy or bluestem prickly poppy. This species can be distinguished from the white- and yellow-flowered Mexican poppies (*A. ochroleuca* and *A. mexicana*) by its very large white flowers which measure 70–90 mm across, its taller and more robust size, and less thorny leaves and stems. The upper and middle leaves are green like yellow-flowered Mexican poppy, while the lower leaves and stems are blue-green like white-flowered Mexican poppy.

Statice is a widespread weed of roadsides and disturbed urban open space. It is very abundant on all routes in and out of Vanrhynsdorp and provided a carpet of colour in the local succulent nursery in town—a probable source of the escaped plants. So far statice is largely confined to disturbed sites but it has invaded the native vegetation. Steps should be taken now to halt the spread of this invasive species.



Statice (*Limonium sinuatum*) at Vanrhynsdorp

White or bluestem prickly poppy (*Argemone* cf. *albiflora* subsp. *texana*) in an abandoned field in the Velddrif region.

Patterson's curse, sometimes spelt Pater-son's curse, (*Echium plantagineum*) is a very abundant and widespread weed of roadsides and abandoned cultivated lands. It is native to Europe and North Africa and is potentially invasive in fynbos and succulent karoo.

Although poisonous to livestock it has been used as an emergency fodder plant during times of drought in Australia, hence its other common name of 'Salvation Jane'. Unconfirmed reports state that William Patterson, a Swedish engineer warned farmers that the plant should not be used for fodder as it would proliferate out of control—which it ultimately did!



Patterson's curse (*Echium plantagineum*) in the Tulbagh valley

Weeds wait for no-one!

South Africa's agricultural resources and biodiversity take the back seat as government stalls over legislation

The revised regulations under the Conservation of Agricultural Resources Act, Act 43 of 1983 (CARA) have still not been made available for public comment.

The draft regulations on alien and invasive species under the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEMBA) were made available for public comment from 15 September till the 15 October. These regulations have been met with much criticism **and are not** the same regulations submitted by the original task team led by Dr Guy Preston and which had the support of South Africa's leading scientists on invasive organisms.

CARA
(Department of Agriculture
and
NEMBA
(Department of Environ-
mental Affairs and Tourism)

Emerging weeds

Statice

Statice (*Limonium sinuatum*) is a perennial herb 0.2–0.4 m high native to the Mediterranean region where it grows in dry sandy areas. It is a member of the leadwort family, Plumbaginaceae.

Stems and leaves are densely hairy. Leaves are all basal, lance-shaped and pinnately lobed, measuring up to 100 mm long and 30 mm wide. The flowering stems are winged, bearing many short, compact spikes of papery flowers. The wild species has lavender, pink or white flowers but cultivars come in many colours.

Statice is an important plant in the cut-flower trade and is used in bouquets. It has become naturalised and invasive in many

other parts of the world, including Australia, California and New Zealand.

Statice was reported to be naturalised on the Cape Peninsula as far back as 1950. Now it is naturalised in a wide area from Yzerfontein on the west coast to Calvinia, Beaufort West and Prince Albert in the karoo, to Silvermine and Hermanus where it invades coastal fynbos.

Legislation: It has not yet been proposed under CARA or NEMBA and this is an oversight.

NB: go to the WIP website for a full description, more photos and distribution map of this species .



Fountain grass

Fountain grass (*Pennisetum setaceum*) is a tussock-forming perennial up to 1 m high and is native to North Africa. It has a bristly spike-like inflorescence.

It has been widely cultivated for ornament and mine dump stabilisation. It prefers hot, dry sites and can form stands along roadsides and in other disturbed sites thus competing with indigenous ruderal species. It has the potential to spread into adjacent natural veld.

Fountain grass has become a serious weed in dry habitats in several states of the USA, including Hawaii. It is a fire-adapted colonizer and readily outcompetes indigenous

species. It flowers and seeds prolifically and the seed is dispersed by wind, water, animals and humans

Legislation: It is a category 1 plant under CARA (2001), excluding the sterile cultivar 'Rubrum'. No new planting, trade or propagation is permitted.

NB: go to the WIP website for a full description, more photos and distribution map of this species .

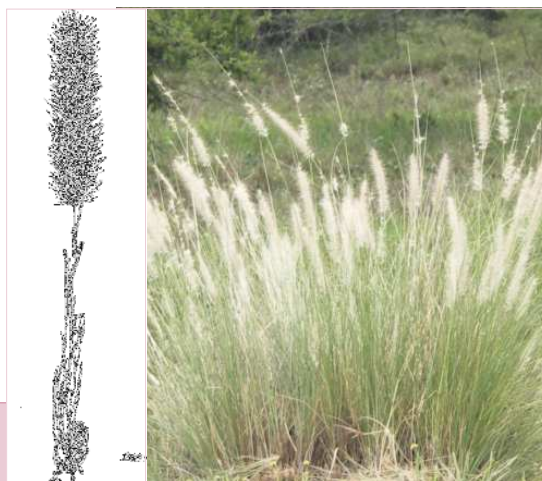


Photo: L. Fish

Manatoka

Manatoka (*Myoporum tenuifolium* var. *montanum*) (= *M. montanum*) is an evergreen, somewhat succulent, wide-spreading shrub or small tree 2–6 m high and is native to Australia.

The leaves are dull green, thinly fleshy but firm, linear-lanceolate, tapering, margins entire, glabrous, up to 100 mm long. Other similar-looking species with thicker, fleshier leaves are *M. laetum*, with translucent glands on the leaves and *M. insulare* with serrations towards the tips of the leaves.

Manatoka has been widely cultivated in

coastal areas as a windbreak and ornamental. The seed is produced within a purple fleshy fruit and is spread by birds. It is invading coastal fynbos, coastal dunes and riverbanks.

The whole plant is poisonous to humans and other mammals.

Legislation: It is currently a category 1 plant under CARA (2001).

NB: go to the WIP website for a full description, more photos and distribution map of this species .



More weeds and invasive plants on the West Coast

This page illustrates more invasive species recorded during a SAPIA roadside survey to the Western Cape coastal region in October from Ceres, Tulbagh and Darling in the south to Nieuwoudtville in the north. The most widespread and abundant invasive species was Port Jackson (*Acacia saligna*)(**photo 1a**), but throughout its range it is being controlled biologically by the introduced gall-forming fungus (**photo 1b**).

Red eye or rookrans (*Acacia cyclops*)(**photo 2**) is also being controlled biologically by a gall-forming midge and few flowers and pods were seen on the plants.



photo 1a



photo 1b



photo 2

Black wattle (*Acacia mearnsii*)(**photo 3**) is common along watercourses in the Ceres and Tulbagh areas.

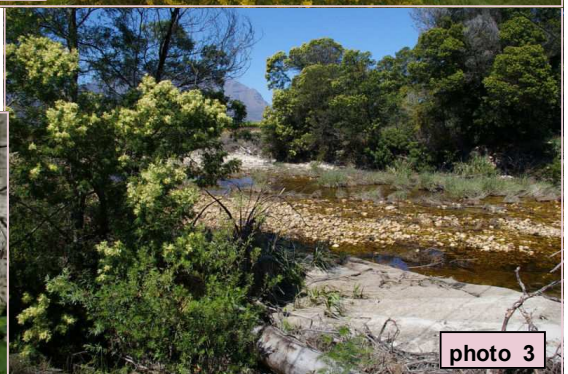


photo 3

The red river gum (*Eucalyptus camaldulensis*) (**photo 4**) is a major invader of the Olifants and Berg Rivers.

Grey poplar (*Populus xcanescens*) (**photo 5**) is a common invader of watercourses.



photo 5

Radiata pine (*Pinus radiata*) (**photo 6**) is invasive in mountain fynbos in the Cederberg and Piketberg.

European Bramble (*Rubus fruticosus*)(**photo 7**) with its very prickly inflorescence prefers the cool, moist mountain areas.



photo 6



photo 4



photo 7

Tree mallow (*Malva dendromorpha*) (**photo 8**) is confined to the coast.

Honey mesquite (*Prosopis glandulosa* var. *torreyana*) (**photo 9**) is invasive in the Piketberg and Porterville areas.



photo 8



photo 9

Old man saltbush (*Atriplex nummularia*) (**photo 10**) invades watercourses in the drier areas where it has been planted for fodder.

Sponge-fruit saltbush (*Atriplex inflata*) (**photo 11**) is widespread and abundant in dry areas.



photo 10



photo 11

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We are on the Web:

www.arc.agric.za

The Weeds Research Division of the 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

Biological control of invasive plants



**Salvinia (*Salvinia molesta*)
before and after biocontrol
with the weevil *Cyrtobagous
salviniae***

Photos: C.J. Cilliers

Biological weed control is the use of natural enemies to reduce the vigour or reproductive potential of an invasive alien plant. The principle is that plants often become invasive when they are introduced to a new region without any of their natural enemies. The alien plants therefore gain a competitive advantage over the indigenous vegetation, because all indigenous plants have their own natural enemies that feed on them or cause them to develop diseases. Biological control is an attempt to introduce the alien plant's natural enemies to its new habitat, with the assumption that these natural enemies will remove the plant's competitive advantage until its vigour is reduced to a level comparable to that of the natural vegetation. Natural enemies that are used for biological control are called biocontrol agents.

The potential risk posed by a candidate biocontrol agent is determined by biocontrol researchers through extensive host range studies (specificity tests) that are carried out in a quarantine facility. These trials determine the range of plants that a potential biocontrol agent is able to use as host plants throughout its life cycle, as well as its host plant preferences. Permission to re-

lease a biocontrol agent will be sought only if the host-specificity tests prove without doubt that the potential agent is sufficiently host-specific for release in this country. To be regarded as sufficiently host-specific, the candidate agent must be either monophagous (i.e. the insect feeds on only one plant species, the target weed in this case) or it could have a slightly wider host range, provided that none of the additional host plants occur in South Africa or surrounding countries, either as indigenous or introduced crop plants.

South Africa is regarded as one of the world leaders in the field of biological control of invasive alien plants. Since the 1930s we have brought 27 invasive alien plant species under biological control. In the process, 99 species or biotypes of natural enemies were released, 74 of which became established. Remarkable successes have been achieved with either controlling or reducing the invasive potential of many invasive plants including cacti, aquatic weeds, Australian wattles, chromolaena and lantana. Seed feeders feature strongly in many of our projects. Tested and safe biocontrol agents are distributed in co-operation with the *Working for Water* Programme of the Department of Water Affairs and Forestry.