

The Weed Exchange

A new garden at Kirstenbosch puts the spotlight on problem plants South Africa has given the world

by Jan Burring and Liesl van der Walt, Kirstenbosch National Botanical Gardens

ABOVE RIGHT: For many BotSoc members, this was a familiar sight: the garden just outside the Botanical Society Head Office at Kirstenbosch. Before landscaping, it was overgrown and boggy, especially around the entrance to BotSoc.

RIGHT: The same view showing the newly planted 'weeds demo garden', which links up with the Waterwise Garden and Sculpture Path; adding interest to this popular walk.

BELOW: Stonewalls and the lily pond were built as special features. Planting of the 'weeds demo garden' took place in May 2005. Photos: Jan Burring.



Many of us look with disapproval at countries from which problem plants have been introduced to South Africa over the years, yet a large number of South African plant species are invading regions of the world too. A need for greater 'weed awareness' among the general public prompted Kirstenbosch to develop a garden that displays some of our indigenous plants that cause damage in other parts of the world.

Invasive alien species are receiving a good deal of attention worldwide and extensive research is being carried out globally. Among the more prominent of these is the Global Invasive Species Programme, GISP, an international partnership which states that, 'the spread of invasive alien species is now recognized as one of the greatest threats to the ecological and economic well being of the planet'. The negative impacts are a major cause for concern, seriously affecting biodiversity, water resources, land-use and human health.

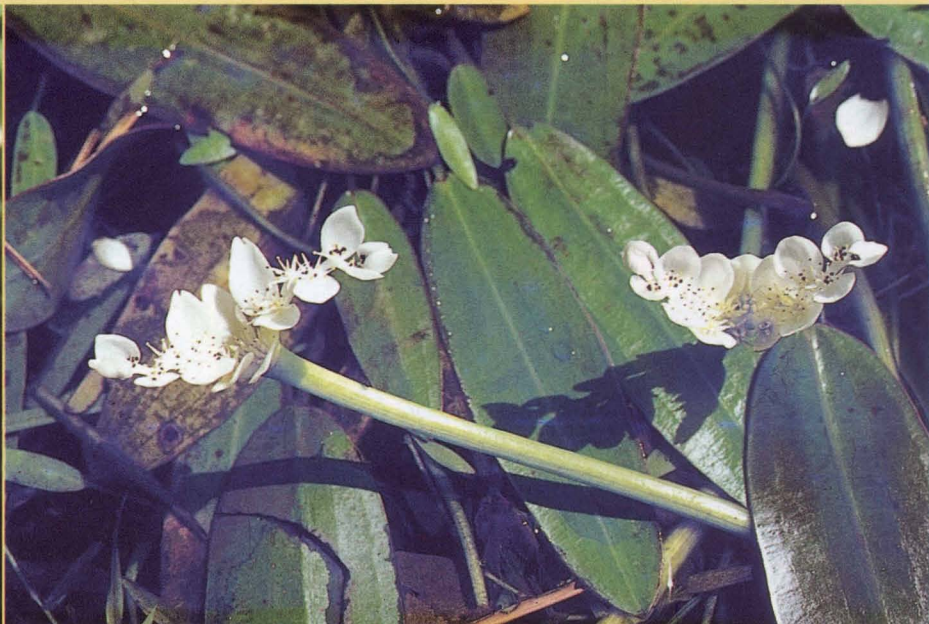
So what constitutes a weed? In its broadest sense, the term 'weed' simply relates to any plant that is undesired. According to GISP, an invasive alien species goes

a step further and can be defined as a plant 'that becomes established in a new environment, then proliferates and spreads in ways that are destructive to biodiversity and/or human interests'. While invasive plants may be regarded as weeds, only certain weed species are invasive. For the purposes of this garden the term 'weed' has been used to denote problem plants in general with varying degrees of invasiveness.

Early in 2004 a list of roughly 200 South African plant species currently invading other countries was drawn up from Dr Guy Preston, Chairperson and National Programme Leader of the Working for Water Programme (WfW). Considerably more species have been added to the list as more information has been received from researchers in other countries, especially Australia. Something that

becomes immediately apparent is that a large proportion of the species are well-known horticultural subjects. Favourites include *Agapanthus praecox* subsp. *orientalis*, *Amaryllis belladonna*, *Asparagus* species, *Carpobrotus* species, *Chasmanthe floribunda*, *Chrysanthemoides monilifera*, *Cotyledon orbiculata*, *Gladiolus* species, *Gloriosa superba*, *Leonotis leonurus*, *Pelargonium* species, *Plectranthus* species, *Plumbago*

BELOW, Clockwise from top left: *Agapanthus praecox* subsp. *orientalis* is becoming a weed in Australia and New Zealand where it is spread by wind and water into natural areas, invading remote and vulnerable habitats. Photo: Alex March. PICTURE 2: Waterblommetjie *Aponogeton distachyos* is an aquatic weed that has naturalized in California, New Zealand, Australia, England, France, Peru, Argentina and Chile. Photo: SANBI Collection. PICTURE 3: *Arctotis stoechadifolia* planted in gardens and for coastal sand stabilization, is smothering native vegetation in Australia and California. Photo: Jan Burring. PICTURE 4: *Bauhinia galpinii* (Pride of de Kaap) is a popular garden plant that has naturalised in parts of Australia. Photo: Alex March.



auriculata, *Polygala myrtifolia*, *Tecoma capensis* (formerly *Tecomaria capensis*), *Thunbergia alata*, *Watsonia* species and *Zantedeschia aethiopica*, to name a few. Sadly, it is often because they are cultivated as ornamental plants in other parts of the world that they have been afforded the opportunity to escape into the wild. The introduction of other South African species lies in their value as utility plants, for example, for soil stabilization (*Carpobrotus edulis*) and as hedging plants (*Lycium ferocissimum*), where they have since proliferated. What also becomes clear is that the vehicle responsible for the introduction of the majority of these into foreign countries, whether intentionally or by accident, is humankind.

Getting the message across

For the garden to convey this message effectively, a series of interpretive storyboards and 'interprelabels' have been developed by Alice Notten, Interpretive Officer at Kirstenbosch. The interpretive boards look at aspects such as weed characteristics, the strategies they employ in achieving their success, the threats they pose and the control efforts that are being implemented to halt their spread. Interprelabels have been created for each of the species on display, outlining their methods of propagation and spread, countries in which they are a problem and the reasons for their initial introduction to those countries.

We hope the garden will encourage

people to exercise caution and responsibility in choosing the plants they wish to cultivate. Many exotics are low risk in terms of their invasive potential; others however if given the opportunity could run riot. National weed lists are available in many countries, and in South Africa steps are afoot to compile a comprehensive list of weeds for which exit permits will be required by law, and to legislate to ensure that seeds of these weed species for sale are given adequate warning labels. Invasive plants are now considered to be second only to habitat destruction as a threat to biodiversity. It is hoped that the new display garden will encourage people to help, even a little, in softening the blow of problem plants on global biodiversity. ♻️



LEFT: In the foreground, sour fig *Carpobrotus edulis* that was initially used as a sand stabilizer, has invaded many coastal and woodland areas in California, Europe (Mediterranean basin) and Australia. Flowering in the background is pig's ear *Cotyledon orbiculata* which has escaped from gardens and has become naturalized in many parts of Australia, New Zealand and California. Photo: Alex March.

BELOW LEFT: Yellow wild iris *Diets bicolor* is threatened in its natural habitats in South Africa, but a weed in Australia. Photo: Graham Duncan.

BELOW: Berry heath *Erica baccans* is endemic to the mountain slopes of the Cape Peninsula, but has naturalized in Western Australia where it is cultivated as a cut-flower. Photo: SANBI Collection.





The authors

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Acknowledgements

The suggestion that the South African National Biodiversity Institute, SANBI, pay attention to South Africa's contribution to this global problem came from Cathy MacKinnon, Lead Biodiversity Specialist with the Environment Department of the World Bank. Thank you to Alice Notten, Interpretive Officer at Kirstenbosch, and to the various invasive plant specialists who have assisted in this project.



TOP LEFT: Kooigoed *Helichrysum petiolare* is invading coastal scrub and displacing native plants in California. Photo: Liesl van der Walt.

ABOVE LEFT: Thatching grass *Hyparrhenia hirta* was introduced to Australia to stabilize soil but is spreading fast, especially along roadsides, bushland and pastures where it displaces natural grasses and herbs. Photo: Liesl van der Walt.

ABOVE RIGHT: *Ochna serrulata*, a popular garden plant dispersed by birds, has naturalized in Australia and Hawaii. Photo: Jan Burring.

RIGHT: Wild dagga *Leonotis leonurus* has escaped from gardens and is invading natural areas in Australia. Photo: Alex March.

