# Progress

# Foreign problems in the desert landscape

In Australia's Top End, the growing problem of introduced plant species becoming weeds is being made worse by a climate and urban culture that encourages the planting of exotic ornamentals. **Denise Lawungkurr Goodfellow** reports.

There is a sheltered cove in Darwin where the cliffs are covered with monsoon vine forest. The forest is so badly infested with poinciana (*Delonix regia*) and other escaped garden plants that many native species are relegated to the understorey.

Poinciana is one of the many 'pretty' exotic garden plants – such as crotons, frangipani and golden cane – that festoon the streets and gardens of Top End towns. While there is no rain in the Top End for up to eight months of the year, local residents prefer these vibrant exotics in their lush, green gardens to less spectacular, drought-tolerant indigenous plants.

The preference is entrenched. For years,

Darwin has celebrated bougainvillea at an annual festival. To many Territorians, indigenous flora are viewed as unfamiliar and even alien.

The truth is that 'pretty' introduced plants like poinciana and bougainvillea pose a serious threat to the Top End's environment. For example, exotic plantings such as those outside Bagot, a reserve in Darwin for indigenous people, have even been embraced by Bininj (Top End indigenous people), who are 'always asking whether they can take crotons, etc, back to their homelands', according to a Northern Land Council employee.

Apart from assisting in the spread of

A planting along the fence of Bagot, an indigenous reserve in Darwin, was carried out by a government department.

exotic weeds, the Bininj are also losing their traditional plant knowledge. Indeed, some have remarked that they look upon the native flora of their homelands as 'rubbish'.

# An uphill battle

According to the Australian National Weeds Strategy Executive Committee, 70 per cent of the most invasive Australian weeds are garden escapees.

Yet, according to a 2005 World Wildlife Fund Australia report,<sup>1</sup> more than half of the 720 recognised invasive garden plants were still on sale in nurseries.<sup>2</sup> Further, in a garden guide for new homeowners

1 Groves RH, Boden R & Lonsdale WM (2005). Jumping the garden fence: invasive garden plants in Australia and their environmental and agricultural impacts. CSIRO Report prepared for WWF-Australia, Sydney. 2 Figures recorded for 2002.





This suburban development, The Chase, in Palmerston, features a combination of *Pandanus spiralis* and other native plants, but with exotic flora, and lawn. Denise Lawungkurr Goodfellow



A new Palmerston duplex with native plants *in situ*. Notice the 'moonscape' yard between this building and the one next door.

published recently by a Top End developer, two-thirds of the recommended plants were exotic species and some were invasive weeds.

Innovative landscapers and developers around the world face a huge challenge in overcoming the entrenched preference for green and ornamental gardens. For example, in a US study of garden preference in Phoenix, Arizona, one participant, showing a typical attitude, stated, 'I am from the Midwest and like the green and flowers; I don't like brown and one colour'.

The same study concluded that developers 'anticipate homeowners' tastes and package their homes with desirable dreamscapes'.

It's not surprising to discover that when an innovative Northern Territory developer, Ochre Ltd, attempted to leave some of the original native vegetation in a subdivision to provide home-buyers with minimal care bush gardens, some builders decided to 'tidy up' Ochre's land, clearing every last shrub and tree.

Darwin landscape architect, Marisa Fontes of Outsidesign, says that while she may propose native species for new gardens, exotic alternatives may be suggested by nurseries or landscape contractors who undertake the actual construction.

Ms Fontes feels that garden plant choice is influenced by television shows such as *Backyard Blitz*, which generally showcase exotics and plants native to eastern Australia. Such plants also dominate the selection at local nurseries, Bunnings and K-Mart stores.

Many tourism operators also believe

that visitors to the Top End expect to see colourful tropical vegetation. From Darwin homestays to hotels in Kakadu National Park, most tourist accommodation is surrounded by gardens of crotons, bougainvillea, frangipani and golden cane.

Yet during my 24 years as a local guide, I've found that visitors prefer the local flora, a view shared by Dr Tonia Cochran, Chair of tour operator Wildlife Tourism Australia who take visitors from all corners of the globe to see the majestic Top End.

# Long history of introductions

Northern Australia has a long history of plant introductions. For example, Tamarind (*Tamarindus indicus*) arrived in the 18th century with Macassans visiting the northern coast.

During the 19th and 20th centuries, people migrating to the region brought with them familiar food and ornamental plants from their homelands. promoted as an attractive pot plant in the 1980s before being declared a noxious weed in the 1990s, 100 years after its introduction – a measure of how difficult it can be to get the message across.

# The mimosa story

An even more sobering story is that of *Mimosa pigra*. Mimosa was brought to Darwin in the 1870s, and then went feral, but largely unnoticed, until an infestation was discovered in 1952 at Adelaide River, 100 km south of Darwin.

Lofty Pickering, a technical assistant with the Northern Territory Noxious Weeds Control Unit in the 1960s, managed to control an outbreak in the mid-1960s but requested assistance to prevent it becoming a major floodplain threat.

Lofty's diary contains a statement that, in hindsight, can only be regarded as a classic in the world of weed management. When he asked the Agriculture Branch's

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Of the garden plants introduced by settlers, some became 'troublesome', wrote Darwin Botanic Gardens Curator Maurice Holtze in 1892. Among them were candle bush (*Cassia alata*) and mimosa (*Mimosa pigra*). As early as 1913, there were attempts to control these and other weedy species.

However, candle bush was widely

senior agronomist for an extra labourer to help remove the mimosa, Lofty was told he was 'glorifying the job'!

Full-scale eradication of mimosa ceased in 1971, when the Commonwealth

Government stopped funding the project. Mimosa now covers about 850 square kilometres of the Territory, forming dense

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thickets that exclude native fauna and flora, and transforming wetlands into largely useless monocultures.

Even if mimosa, and other 'transformer' species – those that obliterate all surrounding vegetation – are removed, the original vegetation will not grow back naturally.

And it would be highly unlikely for any government to fund the clearing and revegetating of tens of thousands of square kilometres of degraded country.

# 'Carrot-and-stick' approach

Weed legislation in the Northern Territory began with the South Australian Thistle and Burr Act of 1862. A Noxious Weeds Ordinance was introduced in 1916, and a Noxious Weeds Act in 1962, updated in 2001. A Weed Management Branch, which has now been operating for about 40 years, has the role of 'educating the public about weeds and instilling landholder responsibility'.

For truly effective weed prevention and control, however, authorities need to take a 'carrot-and-stick' approach – a combination of regulation, incentives and education. This approach would include:

- preventing potential weeds entering the country;
- controlling pathways and behaviours that drive the spread of naturalised plants and weeds;
- providing penalties for noncompliance; and
- changing entrenched preferences.

In 1997–98, Australia became one of the first countries to introduce a permitted plants list system based on the principle of 'guilty until proven innocent'. Although that list included only genera, a loophole in quarantine law, this is currently being redressed by the introduction of a permitted plant species list. Other countries like the UK are now following suit.

Only Western Australia has a comprehensive permitted plants list, while the Territory's permitted species list is limited to aquatic plants.

# 'Poinciana power' on the wane?

Local horticulturalist, Tim West, believes there is a shift in attitude to native vegetation since a Darwin Landscape Alliance, formed in 2001–2002, 'died a quiet death'. '[The alliance] stakeholders strongly supported the use of native vegetation in the urban landscape, but the outcome of this forum did not suit some who had the ear of Government,' says Mr West.

'Since then, a majority stakeholder view has been taken on board – for



A T-junction in Darwin featuring acacias, eucalypts and other local indigenous trees. Denise Lawungkur Goodfellow

instance in the Greater Arterial Roads Landscape Master Plan (2005) for Darwin/Palmerston.

'The species lists are predominantly natives of proven landscape potential. To me this is proof that institutional change is occurring, slowly but surely.'

Yet the master plan also showcases exotic plants and grasses – one of the most invasive plant groups. If such plants are tough enough for roadside plantings, particularly if they are not irrigated, they fit the definition of potential weeds.

And 'poinciana power' still exists amongst those nurseries and home gardeners who continue to grow 'pretty' weedy plants, and the builders who want to scrape their blocks clean of natives.

But there is cause for optimism. Ochre Ltd, for example, is now working with the Department of Natural Resources, Environment and The Arts on a preferred species list for new residents on its estates.

And World Wildlife Fund Australia has now put forward a 10-point plan targeting governments, the gardening industry, non-government organisations and communities. The plan encourages homeowners to 'participate in schemes that audit their gardens and help them replace high-risk plants with those that are environmentally safe'.

But plant auditing could also be extended to public areas. Nurseries and

even developers could promote indigenous plants to local councils and the general public by holding field days. Organisations from the University of the Third Age to migrant, indigenous and building associations could help to facilitate the distribution of information.

> In the end, however, everyone – *Backyard Blitz* producers, Bunnings and K-Mart buyers, horticultural writers, developers, landscapers, nursery owners and politicians – must be convinced of the seriousness of the problem before they will act.

You could compare the invasive weed problem to the spread of cane toads (and who would want to be accused of facilitating that!). But while *Bufo marinus* can only threaten a fraction of Australia's biodiversity, invasive plants could transform the whole environment of the Top End, potentially damaging our tourism and

agricultural industries.

So anyone promoting the use of 'pretty' weeds is reducing environmental and economic options not only for today's Territorians and Australians, but for future generations who will have to live with the consequences.

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### More information:

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