

## Note from the CEO



Welcome to the January edition of The Vegetation Manager.

Happy New Year! Can you believe that it is already 2011? It seems that every year goes by faster and the weather is getting more and more unpredictable! This time last year we were battling drought, but this season we've certainly had the gumboots out and umbrellas up. 2010 was officially Queensland's wettest year on record with average rainfall across the state of over 1.1 metres! This exceeded the previous record set in 1950 and rumour has it that there is still more on the way

In late November, Technigro was announced as the overall winner of the 2010 Mayors Innovation Award in the Gold Coast Business Excellence Awards. Word of our win has spread and we were proud to feature in the Gold Coast Mail on December 16th. Check out the article on page 4. I would like to thank you for your ongoing support which allows us to pursue our purpose of *Changing the way vegetation is managed in Australia*.

This month's Weed Watch focuses on Pickerel weed. This long-lived aquatic plant is very popular in cultivation and this has facilitated its spread into natural wetlands and waterways. Most recent records have discovered this weed in the coastal districts of south-eastern Queensland, including the Gold Coast and Logan City. Its ability to outcompete native species and restrict water flow makes Pickerel weed an emerging threat and one that we need to watch out for.

Have a fantastic month and stay dry!

Cheers, Nick Bloor

## In the news

### Queensland's wild weather

This time last year we were battling drought, but this season we've had the gumboots out, buckets catching water from a leaky roof and been falling asleep to the sound of raindrops on the roof.

According to the Bureau of Meteorology, 2010 was officially Queensland's wettest year on record. The average rainfall across the state was 1109.73 millimetres, exceeding the previous record of 1103.77 millimetres in 1950. The wettest Queensland town in 2010 was Bellenden Ker Top Station, which recorded more than 12 metres of rain!

Australia-wide, it was the third wettest year on record, with an average rainfall of 690 millimetres. And it seems the rain is continuing into 2011.

The massive rainfalls have been attributed to the La Niña weather event, which developed over the Pacific Ocean and is likely to hanging around until April. La Niña refers to the extensive cooling of the central and eastern Pacific Ocean which when it occurs, typically generates cooler than normal temperatures

and increased probability of wetter conditions. With the Bureau of Meteorology predicting there is a 60-70% chance South East Queensland will receive above average rainfall from January to March, it looks like we might need to keep our gumboots and umbrellas handy for a few more months!



Above: Brisbane CBD goes underwater

## In the news

### Technigro features in the Gold Coast Mail



Technigro are proud to have featured in the Gold Coast Mail following their recent win in the Gold Coast Business Excellence Awards. Technigro took out the overall 2010 award for the Mayors Innovation Award. Technigro CEO, Nick Bloor, attributed the company's success to "our unrelenting pursuit of excellence, our innovative approach and the high quality of the people we employ". Read the full article on page 3.



### YOUR ALERT TO NEW AND EMERGING THREATS



Pickerel weed is a long-lived aquatic plant that is cultivated as an ornamental in garden ponds and water features in Australia. This weed has begun to spread into natural wetlands and waterways, and has recently been recorded in the coastal districts of South East Queensland. Pickerel weed has the capacity to form large, dense clumps and if left uncontrolled, these clumps may eventually replace native species. Learn more about Pickerel weed by reading our Weed Watch fact sheet on page 4.

## Upcoming Events

- > **Local Government Council Golf Day**  
Proudly sponsored by Technigro  
13th February 2011, Redland Bay Golf Course, QLD
- > **11th Queensland Weed Symposium**  
Weed Management - Back to Basics  
31st July - 3rd August, 2011 Mackay, QLD
- > **23rd Asian-Pacific Weed Science Society Conference**  
Weed Management in a Changing World  
25th - 30th September 2011, Cairns, QLD

## Fast Facts

- > Australia has 378 species of mammals, of which more than 80 per cent are unique to Australia.
- > Australia has an estimated 20 000 species of vascular plants. 16 000 of these are found nowhere else in the world.
- > Australia hosts 869 types of reptile. 773 are found nowhere else.

## It's that time of the year

### Khaki Weed



### Get ready for Khaki season!

Khaki spreads readily thanks to its many sharp burrs which attach to animals and motor vehicles. The same burrs are a problem for many members of the community, particularly during Summer. January is the perfect time to target this problem weed. For more information on Khaki, read our fact sheet on page 6 or talk to one of our turf specialists on 1800 678 611.

### Groundsel bush



### Watch out for this difficult weed

Groundsel bush (*Baccharis halimifolia*) is a Class 2 declared plant in Queensland. Its peak flowering period is fast approaching making it very easy to spot. Now is the ideal time to detect infestations and implement suitable control measures. For more information, read our fact sheet on page 7 or talk to one of our Natural Areas team on 1800 678 611



1. Small population in a roadside drain on the Gold Coast. 2. Heart-shaped leaf blade. 3. Dense spike-like flower cluster with numerous bluish flowers 4. Habit of Pickerel weed



## Pickerel weed (*Pontederia cordata*)

Introduced

Not Declared

Pickerel weed is a long-lived aquatic plant that is cultivated as an ornamental in garden ponds and water features in Australia. This native of eastern USA, Mexico, Central America and South America is also known as Pickerel rush. It has spread from cultivation and become naturalised along slow-moving waterways, in wetlands, and in other damp sites in Australia.

### Distribution

This plant has come in and out of vogue as an ornamental pond plant over the years. There are older records from Koo Wee Rup and the Wartook Reservoir in southern Victoria; from near Mount Schanck in the south-eastern corner of South Australia; from along an urban waterway in Perth; and from some inland parts of southern New South Wales.

Pickerel weed is currently very popular in cultivation and this has facilitated its further spread into natural wetlands and waterways. Most of the recent records are from the coastal districts of south-eastern Queensland. For example, an infestation of Pickerel weed was reported from a melaleuca wetland at Waterford in Logan City in February 2010, and a small population was found in a roadside drain at Tallebudgera on the Gold Coast in October 2010.

### Description

This long-lived water plant is usually rooted in the mud and forms clumps of upright leaves that emerge up to 1 m above the water surface. These clumps of leaves are connected to each other by short underground stems that spread under the mud surface. The leaves are borne on very long stalks up to 60 cm long with sheath-like bases. These glossy green leaves (6-22 cm long and up to 12 cm wide) are usually somewhat heart-shaped with entire margins and pointed tips.

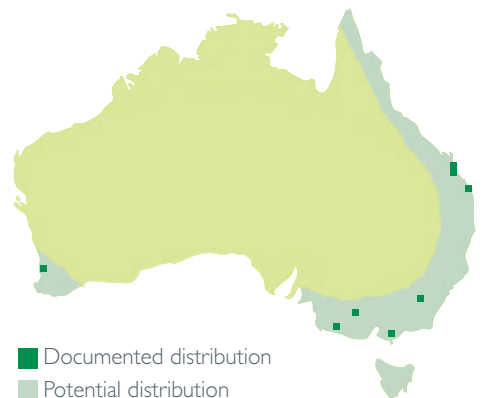
The upright flowering stems (up to 1.2 m tall) are rounded and bear an elongated spike-like flower cluster (2-15 cm long) at their tips. These flowering stems also have a pair of leafy bracts, the lower one closely resembling one of the heart-shaped leaves and the upper one being much smaller and narrower. The flower clusters contain numerous small flowers (1-2 cm long) that are usually blue in colour, but may be mauve or white in some forms. These flowers have six 'petals', one of which is usually slightly larger with a yellow spot. The small ridged fruit (4-10 mm long) usually remain hidden inside the old flower parts.

### Quick Facts

- > A long-lived aquatic plant growing up to 1 m tall
- > Usually grows along waterways and in other damp sites
- > Heart-shaped leaves borne on long upright stalks.
- > Upright flowering stems bearing dense clusters of blue, mauve or white flowers

### Habitat

Pickerel weed grows along slow-moving waterways and around the margins of lakes and other bodies of freshwater. It may also invade wetlands, drainage ditches and other damp sites.





1. Immature fruit. 2. Close-up of flowers with yellow spot on one petal.

## Reproduction and Dispersal

Plants are probably most often spread by the dumping of garden waste into waterways. Once present in natural areas, clumps, seeds or segments of the underground stems can be spread downstream during floods.

## Why is it an Emerging Threat?

While this plant is not as invasive as some other water weeds, it has the capacity to form large and dense clumps in natural wetlands and waterways. If left uncontrolled, these clumps may eventually replace native species and restrict water movement.

## Control Methods

Individual plants or small infestations can be removed manually, taking care to ensure that no stem and root material remains in the substrate. Once collected, all plant material should be removed from the site and disposed of in a sanitary manner. Prevent further spread of the weed to other areas of the water body by avoiding fragmentation of stem material which usually results from the use of mechanical equipment.

In the case of larger infestations, or where access is more difficult, the use of herbicides may be necessary. While there are no herbicides currently registered for the control of Pickerel weed within Australia, the control of environmental weeds such as *Pontederia cordata* in non-crop situations is allowed in Queensland via off-label permit 11463 (<http://permits.apvma.gov.au/PER11463.PDF>). Under this permit, the use of aquatically registered formulations of Glyphosate 360 (e.g. Round-up Biactive and Weedmaster Duo) is permitted for the spot spraying of perennial weeds in aquatic and wetland areas. For control within other state boundaries, see the relevant permits or government legislation.

## Look a-likes

Pickerel weed is closely related to the native water plant monochoria (*Monochoria cyanea*). However, monochoria has leaves borne on spreading stems and the bases of its leaf blades are usually rounded. The flower clusters of monochoria are also less dense and only contain several flowers.



Top. Spreading habit of monochoria.

Bottom. Monochoria leaf with rounded base.

The control methods referred to in Weed Watch™ should be used in accordance with the restrictions (federal and state legislation and local government laws) directly or indirectly related to each control method. These restrictions may prevent the utilisation of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, Technigro does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

This information has been developed with the assistance of Dr Sheldon Navie. Photographs are also courtesy of Dr Navie. © Technigro Australia Pty Ltd 2011

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# KHAKI WEED

*Alternanthera pungens*



*Photographs are courtesy of Dr Sheldon Navie*

## Description & life cycle

A low-lying, creeping perennial, Khaki weed is widespread throughout Queensland & many other parts of Australia, including northern NSW and the Northern Territory

Khaki weed spreads readily, thanks to its many sharp burrs, which attach to animals and motor vehicle tyres. The same burrs are a problem for picnickers and people who like walking around in bare feet!

This native of South America has a deep, carrot-like taproot, up to 12mm in diameter and 100mm long. Roots form at the stem and nodes allow it to form a thick mat.

Leaves are up to 5cm long, oval-shaped with pointed tips, in unequal opposite pairs. Stems are up to 500mm long, branched and reddish purple, covered with short, soft hairs.

Flowers are very small, in the axils of leaves, surrounded by fine, straw-coloured, sharply pointed burrs. The flowers emit a pungent odour, hence the species name "pungens".

Khaki weed reproduces readily from its large quantities of seed, roots and stems-nodes taking root. Seeds are viable for many years and germinate after spring or summer rains. Flowering and seeding occurs in summer and autumn, accompanied by the sharp prickle-like burrs which can pierce the skin.

## Key features

- > The sharp burrs can be a real nuisance during summer and autumn.
- > Forming a thick mat, Khaki weed invades parks, ovals and other public open spaces.
- > A deep taproot makes it difficult to control.

## Control

1. Small infestations can be dug out or removed by hand (with gloves), prior to seeding.
2. Consider the use of a pre-emergent herbicide to break the plant's life cycle, in situations where Khaki weed has built up significant populations.
3. Large infestations in ovals & other grass areas require the application of a selective herbicide, suitable for the particular grass species. Khaki weed seedlings are susceptible to a range of selective herbicide formulations and to achieve the best results, Technigro recommends that applications be made while the weeds are young and actively growing and prior to the plant producing seed.

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# GROUNDSEL BUSH

*Baccharis halimifolia*



Photographs are courtesy of Dr Sheldon Navie

## Description & life cycle

Groundsel bush is mainly found in the coastal areas of South East Queensland and New South Wales. It is a Class 2 declared plant in Queensland and a Class 3 noxious weed in New South Wales.

Groundsel bush is a densely-branched shrub which normally grows up to 3m tall, but has been known to grow up to 7m tall. Its wedge-shaped leaves are alternately arranged with large teeth at the tips. Flowering occurs from mid to late March, with male and female flowers being produced on separate plants. The female flowers are white and fluffy, while the less conspicuous male flowers are pale yellow. During seeding, female plants are covered in seeds topped with tufts of white hairs giving them a snow-covered appearance.

Groundsel bush rapidly colonises disturbed areas, out-competing desirable species for water and nutrients and destroying habitat for native wildlife. Seeds are readily dispersed by wind and can also be spread via animals, running water, vehicles and machinery.

## Key features

- > Rapid coloniser of cleared, unused land and moist areas such as freshwater or brackish wetlands
- > Each female plant can produce up to a million seeds
- > Seeds germinate readily with rainfall but if buried, can remain dormant for several years
- > Plants will re-sprout from underground buds if damaged

## Control

1. Small plants (less than 1 metre) can be hand pulled.
2. Larger plants can be controlled with herbicides using either the foliar spray, cut stump, or basal bark method. Refer to product labels for rates and registration details.
3. Larger plants may also be controlled mechanically with a cutter bar 10cm below ground surface.
4. Six introduced insects provide some biological control of Groundsel bush. They are the stem borer *Megacyllene mellyi*, the plume moth *Oidaematophorus balanotes*, the gall-fly *Rhopalomyia californica*, the leaf beetle *Trirhabda baccharidis*, the leaf skeletoniser *Aristotelia ivae* and the leaf miner *Buccatrix iveila*. More information on these can be found on the Queensland Department of Primary Industries and Fisheries website ([www.dpi.qld.gov.au](http://www.dpi.qld.gov.au)).

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