The Vegetation Manager

JANUARY › | It's that time of year | Weed Watch | Events | News |

Note from the CEO

Welcome to the New Year and the January edition of The Vegetation Manager.

We are pleased to bring you the first edition of Weed Watch, your alert to new and emerging threats. In this month's Weed Watch, Dr Sheldon Navie highlights kidneyleaf mud-plantain (*Heteranthera reniformis*), an introduced aquatic weed that has quickly become naturalised in South East Queensland after first been recorded here in 2007. It has since been discovered in over 20 sites in the coastal parts of South-East Queensland and has also recently become naturalised in Sydney.

Weed Watch will be a regular feature in TVM. If you spot or hear about a weed that you think could be a new or emerging threat, e-mail us at weedwatch@technigro.com.au and we'll get onto it.

In partnership with Gold Coast City Council, we recently hosted a visiting delegation from Singapore. Singapore is Asia's 'Garden City' and with high rainfall and a focus on urban greenery, the group was here to explore opportunities to improve their industry practices and productivity. The delegation included government officials, consultants and landscape maintenance contractors who administer and manage a combined annual spend in excess of S$1Billion. We were asked to demonstrate our DriftProof® spraying technology and have since been invited to work with the Singapore government to assist in the development of industry training for their vegetation managers and technicians.

Finally, with broad-scale soaking rains received over much of Queensland and New South Wales over the Christmas break, the year has certainly kicked off in top gear. If you need a hand managing your vegetation, just drop us a line at 1800 678 611 or e-mail us at team@technigro.com.au and one of our experienced team will be there to help. Best wishes for the year ahead and we look forward to partnering with you throughout 2010.

Kind regards, Nick Bloor

weed watch

Welcome to Weed Watch, our newest edition to The Vegetation Manager. Each month, Dr Sheldon Navie will focus on a new and emerging weed and provide you with details on its appearance and distinguishing features to assist in ID, as well as best practice control methods. Learn more about Dr Navie on page 2.

This month's new and emerging threat is kidneyleaf mud-plantain (*Heteranthera reniformis*). Kidneyleaf mud-plantain is a short or long-lived aquatic plant that grows in shallow water. The species was first discovered in 2007 and has spread from cultivation as an ornamental pond plant and become naturalised in South-East Queensland. Kidneyleaf mud-plantain is quick growing and mat forming, enabling it to quickly out-compete native aquatic vegetation.

Learn more about kidneyleaf mud-plantain by reading our Weed Watch fact sheet on page 3.

Upcoming Events

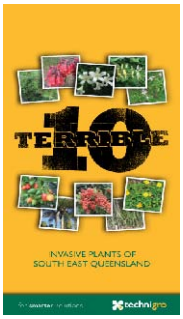
> **Eco Forum Conference & Exhibition 2010**
Remediation - Water - Climate Change - Waste
23rf & 24th February, Sydney

> **Global Biosecurity Conference 2010**
Safeguarding agriculture and the environment
28th February - 2nd March, Brisbane

> **Clean Up Australia Day**
Sunday, 7th March

> **ECO IPWEAQ South West QLD Branch Conference**
20th & 21st May, Stanthorpe

Terrible 10 - Invasive plants of South East QLD



Plants from our back yards and gardens are invading South East Queensland's bushland and natural areas.

The plants featured in this publication are 10 of the most invasive plants currently damaging diverse native plant communities and degrading wildlife habitat.

For a free copy of this publication, contact us via email on feedback@technigro.com.au

In the News

Lawn grubs

It's a grubby time of year

The recent Christmas rainfall has provided the perfect conditions for hatching of larvae, resulting in several reports of grub infestations in South East Queensland. In addition to lawn grubs, this weather is also optimal for black beetle infestations.

Lawn grubs and black beetles can have a devastating impact on your turf in short periods of time. Signs of lawn grub and beetle infestations include:

- Large masses of birds on your turf
- Chewed leaves
- Patches of dead grass with no thatch layer
- Evidence of grub or beetle in thatch layer

As soon as the effects are evident, damage to the plant will already have occurred. To avoid long term damage to your turf, we recommended taking a preventative approach. In addition to this, treatments at a preventative rate are far more cost effective than at a curative rate.

We are fully armed with the required resources to take on these pesky insects and ensure your turf stays in tip top condition. Our team are also available to inspect your fields as some insect infestations require specific products. For more information, please call one our Turf Specialist on 1800 678 611.

For more information on lawn grubs, read our factsheet on page 5

Introducing Dr Sheldon Navie

The Vegetation Manager is proud to be partnering with Dr Sheldon Navie in presenting Weed Watch. With the assistance of Dr Navie, Weed Watch will focus on a weed that is a new or emerging threat and provide you with details on its appearance and distinguishing features to assist in ID, as well as outlining best practice control methods.

Dr Navie has a significant amount of scientific knowledge in the fields of plant ecology, weed biology, grass taxonomy and identification.

Dr Navie is based at the School of Land, Crop and Food Sciences at the St. Lucia campus of The University of Queensland where he completed his PhD on the biology of parthenium weed. He has since undertaken various roles at the University in collaboration with numerous internal and external organisations. This has included teaching plant and weed identification to undergraduate students, the supervision of higher degree students researching the biology and management of weed species and the development of interactive teaching tools for undergraduate students and the wider community.

Significant outputs of his work to date are a range of interactive weed identification CD's and DVD's using the Lucid software system. These products, including Environmental Weeds of Australia and Declared Plants of Australia, were developed in conjunction with the Centre for Biological Information Technology (CBIT) and other organisations (e.g. the CRC for Australian Weed Management). In recent years, Dr Navie's expertise has also been utilised by Biosecurity Queensland, Brisbane City Council and the Queensland Herbarium on projects involving the profiling and risk assessment of weed species.

Dr Navie also lends his expertise as a research scientist to the Integrated Vegetation Management Project www.ivmp.com.au

It's that time of the year

Khaki weed

Now is the perfect time of target khaki weed

Khaki weed 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. Now is the perfect time to target this problem weed. Learn more about khaki weed by reading our fact sheet on page 6

Groundsel bush

Watch out for this difficult weed

Groundsel bush is a Class 2 declared plant in Queensland. This weed rapidly colonises disturbed areas by out-competing desirable species for water and nutrients and can be very time consuming and expensive to control. For more information, read our fact sheet on page 7 or talk to one of our Natural Areas team on 1800 678 611.

weed watch™

YOUR ALERT TO NEW AND EMERGING THREATS.

1. *Close-up of kidney-shaped leaves.* ***2.*** *Delicate flowers that have already begun to wilt.* ***3.*** *Mat-forming habit.* ***4.*** *Infestation in a concrete drain at Birkdale, Queensland.*

AQUATIC

Kidneyleaf mud-plantain *(Heteranthera reniformis)*

Introduced | Not Declared

Kidneyleaf mud-plantain is a short or long-lived aquatic plant that grows in shallow water, usually less than 20 cm deep. It is a member of the Pontederiaceae plant family and is native to eastern USA, Mexico, Central America and some parts of South America.

Distribution

This species has spread from cultivation as an ornamental pond plant and become naturalised in South-East Queensland. It was first recorded in this region in late 2007, growing in a shallow concrete drain at Birkdale in the eastern suburbs of Brisbane. It has since been discovered in over twenty sites in the coastal parts of South-East Queensland (e.g. Mt Tamborine and Goodna) and has recently become naturalised in the Sydney region in NSW.

Description

Kidneyleaf mud-plantain forms colonies that usually emerge 10-30 cm above the water surface. The underwater stems produce roots at their joints, particularly where they come into contact with soil, while other stems usually spread across the water surface. The majority of leaves are alternately arranged along the stems, but some are occasionally grouped into clusters (i.e. rosettes). The bright green and glossy leaves are borne on stalks 2-13 cm long and are kidney-shaped (1-4 cm long and 1-5 cm across).

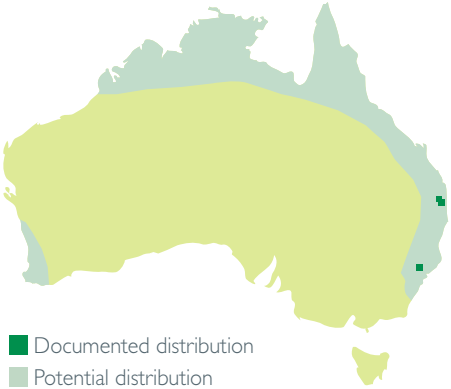
The flowers are arranged in short clusters (i.e. racemes) 1-5 cm long that emerge from two small sheath-like structures. Each cluster contains 2-10 small flowers, which bloom approximately three hours after sunrise and wilt by early afternoon. The delicate white or pale blue flowers have six 'petals' (3-6.5 mm long), with one of the petals having yellow or greenish markings at its base. They also have three stamens, two of which are small with yellow anthers, while the third is longer with a greyish-blue anther. The fruit is a small capsule containing 8-14 tiny winged seeds less than 1mm long.

Quick Facts

- Forms very dense mats in shallow water
- Stems are often rooted to the substrate
- Flowers open about 3 hours after sunrise and wilt by early afternoon

Habitat

Kidneyleaf mud-plantain forms very dense infestations in shallow, slow-moving waterways and drains less than 20cm deep. It can also grow in roadside ditches and around the edges of lakes and ponds.



weed watch™

YOUR ALERT TO NEW AND EMERGING THREATS.

1. *Infestation in a creek at Goodna, Queensland.* ***2.*** *Spreading underwater stems with roots.*

Reproduction and Dispersal

This species reproduces by seed as well as vegetatively. It is likely to have been introduced into waterways in dumped garden waste and then spread downstream during floods. Seeds and plant fragments may also be dispersed in mud that becomes attached to animals and vehicles.

Why is it an Emerging Threat?

The quick growth and mat-forming habit of this plant enables it to quickly out-compete native aquatic vegetation. Hence, it is potentially a very serious weed of aquatic habitats in northern and eastern Australia. It has also become naturalised in southern Europe and is a troublesome pest of rice crops in Italy.

Control Methods

There is limited information on the mechanical control of kidneyleaf mud-plantain. However, due to its vegetative growth habit a strict hygiene measures must be followed if considering this control method. Disturbance of this species in aquatic areas can result in fragmentation of the plant which may lead to further downstream infestations.

For further information on the control of this species please refer to Biosecurity Queensland's Pest Plant Risk Assessment on Kidneyleaf mud-plantain *(www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Kidneyleaf-Risk-Assessment.pdf)* or follow the same strict hygiene measures as that of the mechanical control of Alligator weed (*Alternanthera philoxeroides*) which can be found at (*http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0012/210450/alligator-weed-control-manual-part4.pdf)*

As this species is very new, no chemicals are currently registered for its control in Australia. However, as it is an environmental weed, APVMA off-label permit 11463 is applicable (*http://permits.apvma.gov.au/PER11463.PDF*). Glyphosate Biactive has been reported to provide effective control of kidneyleaf mud-plantain in waterways in South East Queensland, though follow up has been required in some situations.

Look a-likes

Kidneyleaf mud-plantain is superficially very similar to water hyacinth (*Eichhornia crassipes*) when not in flower, but water hyacinth is a free-floating plant and is not rooted to the substrate. Water hyacinth also has very inflated leaf stalks and much larger flowers.

Top. *Showy flowers of water hyacinth.*
Bottom. *Leaves of water hyacinth with inflated stalks.*

This information has been developed with the assistance of Dr Sheldon Navie. Photographs are also courtesy of Dr Navie.

Your Provider of Vegetation Management Solutions
Brisbane: 3, 128 South Pine Road, Brendale, QLD. 4550
Gold Coast: 2-10 Rudman Parade, Andrews, QLD. 4220
Post: PO Box 2038, Burleigh BC, QLD, 4220
T: 1800 678 611 www.technigro.com.au

technigro
for smarter solutions

SOD WEBWORM & LAWN ARMYWORM

Sod Webworm

Lawn Armyworm

The damage caused by Sod Webworms usually appears in early Spring. The damage shows up as small dead patches of grass among the normally growing grass. The Summer generation may cause general turf thinning or even irregular dead patches. Sod webworms prefer sunny areas and the larvae are often found on south facing, steep slopes and banks, where it is hot and dry. Heavily shaded turf is seldom attacked by the larvae.

The Lawn Armyworm larvae pupate in chambers they construct in the soil. They are deep brown in colour and measure about 15 mm in length and 5 mm in width. Egg masses are seldom laid directly on the host plants, and are more commonly found on adjacent vegetation and under the eves of buildings. Young Armyworms have well developed 'silk glands' and may use silk threads to lower themselves to the ground. They prefer sheltered feeding sites. Feeding commences immediately after hatching and continues at night until larval maturity.

These two turf pests commonly referred to as 'lawn grubs' can cause serious damage to turfed areas during the growing season. For this reason Technigro recommend the proactive treatment of turfed areas with Bifenthrin, a synthetic pyrethriod with extended residual activity that controls target insects via contact and ingestion for up to eight weeks. The residual nature of this treatment controls these pests over longer periods when compared to traditional, more hazardous insecticides that have commonly been used in the past.

Benefits of Bifenthrin

- Outstanding efficacy as an Adulticide and larvae of Lepidoptera species
- Long-term residual control – limits the number of pesticide applications
- An odourless product, rainfast once dry
- Low solubility in water and high affinity for soil particles combine to ensure low leaching potential

Application

Bifenthrin is also registered for the control of a range of ant species, mosquitoes and flies in situations where their activity can affect the public. The residual nature of Bifenthrin offers the asset manager a proven ability to control a wide range of insect pests of amenity horticulture over an extended period.

Your Provider of Vegetation Management Solutions
Gold Coast: 2-10 Rudman Parade, Andrews, QLD. 4220
Brisbane: 3/128 South Pine Road, Brendale, QLD. 4550
Post: PO Box 2038, Burleigh BC, QLD.4220
T: 1800 678 611 F: 1800 678 622 www.technigro.com.au

technigro

for smarter solutions

KHAKI WEED

Alternanthera pungens



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.

Your Provider of Vegetation Management Solutions
Gold Coast: 2-10 Rudman Parade, Andrews, QLD. 4220
Brisbane: Unit 3, 128 South Pine Road, Brendale, QLD. 4550
Post: PO Box 2038, Burleigh BC, QLD.4220
T: 1800 678 611 F: 1800 678 622 www.technigro.com.au

technigro

for smarter solutions

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 *Buccalatrix iveila*. More information on these can be found on the Queensland Department of Primary Industries and Fisheries website (www.dpi.qld.gov.au).

Your Provider of Vegetation Management Solutions
Gold Coast: 2-10 Rudman Parade, Andrews, QLD. 4220
Brisbane: Unit 3, 128 South Pine Road, Brendale, QLD. 4550
Post: PO Box 2038, Burleigh BC, QLD. 4220
T: 1800 678 611 F: 1800 678 622 www.technigro.com.au

technigro

for smarter solutions