

Final Report

Nursery industry environmental and technical research and extension 2008 to 2009

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Delivery partner:

Nursery and Garden Industry Australia

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Nursery industry environmental and technical research and extension 2008 to 2009 (NY08002)

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EXECUTIVE SUMMARY

This appendment summarises the outcomes of the Industry Carbon Footprint tool and the Invasive Plants Audit which form the final part of the Nursery Industry Environmental & Technical Research and Extension 08/09 project. These two sub projects required additional time to ensure they were completed without error, misinformation, and in the case of the carbon calculator, field tested to tease out any interface anomalies. Together with the four key pest contingency plans, literature review on plant growth impacts from water contaminants and technical report on the response of plants grown in blends of potting mix and ameliorants under restricted watering, they provide industry with a coordinated response to key environmental and technical issues that impact on the sustainability of the Australian Nursery & Garden Industry (NGI).

The Industry Carbon Footprint tool, referred to as *NurseryFootprint* was developed by Growcom in consultation with NGI. It is based off the prototype carbon footprinting tool Hortcarboninfo and designed especially for the Australian production nursery industry. In designing this tool, Growcom ensured that it was easy to use and comprehend. For example:

- It assumes that users may not have a great deal of computing experience.
- It only requires data that is easily available to nursery managers.
- It can deal with the huge number of products and processes in the nursery industry.
- It produces results that are relevant and easy to understand.

The tool was developed in an excel spreadsheet and makes extensive use of macros to enable functions to make navigation and useability easier. The tool uses a hybrid approach to calculate emissions and relies on data that can be easily collected from business records. Using conversion factors, this data is then transposed into emission data. These conversions are relatively simple for the on farm emissions (e.g. amount of fuel used), however, become more complex when considering supply chain emissions (e.g. how much raw material, energy, transport emissions etc. were associated with the production of a pot?). For the supply chain emissions, this tool uses emissions factors developed from other complex analyses to convert simple expenditure data into emissions values.

Although this tool does not provide a fully standards-compliant life cycle assessment of emissions for single products, it does provide results that approximate a life cycle assessment. This can be used by production nurseries to identify emissions reduction opportunities, and to compare businesses and practices within the production nursery industry. This tool will be launched in April 2010 at the Nursery & Garden Industry National Conference in Darwin. The tool and user manual will be downloadable from the Environment Pages of the Nursery & Garden Industry website. A technical Nursery

Paper in 2010 will be written to summarise the tool and it will also be incorporated into a training workshop in 2010/11.

The Invasive Plants Audit was undertaken by Delwyn Thomas and Anthony Kachenko. This study aimed to identify the success of industry initiatives associated with invasive plant management by providing information that demonstrates industry awareness of both industry and government invasive plant programs. This study found that industry is acting responsibly by not propagating and distributing declared weeds. The report noted that a comprehensive, yet targeted communication plan was warranted to communicate industry and government initiatives, particularly in relation to on farm biosecurity measures, encompassing invasive plants. This report will be presented as a poster at the 2010 Nursery & Garden Industry National Conference in Darwin. It will also form a technical Nursery Paper in 2010. Recommendations contained within this report will be addressed by Nursery & Garden Industry Australia (NGIA) through the Environment Committee.

NurseryFootprint tool

In 2008 a prototype carbon footprinting tool (Hortcarboninfo) was developed under the Queensland Farmers Federations (QFF) climate change project to document emissions resulting from cultivation practices in production nurseries. Although this tool was effective in providing a general indication of the emissions from production nurseries as a result of the use of key farm inputs such as fuel, fertilisers, electricity and outputs such as waste, it was limited in its capacity to:

- Undertake a more detailed analysis of on farm emissions.
- Collect information on emissions up and down stream (lifecycle) of the farm gate including emissions resulting from:
 - transportation of goods;
 - production of packaging;
 - o production of growing media;
 - production of product labels;
 - o production of growing containers.
- Undertake a more comprehensive comparison of the costs and benefits resulting from changing farming practices e.g. plastic container to biodegradable container
- Benchmark the efficiency of different growers by comparing number of products to emission intensity.
- Provide a user friendly interface and simple "how to" use guide.

NurseryFootprint has addressed these limitations. Key inputs required for data collection include:

- Energy inputs:
 - Electricity (pumps, lights, heaters, steamers, potting machines etc).

- Liquid fuels (petrol, diesel, LPG for vehicles, machinery, pumps, boilers, heaters etc.).
- Fertiliser.
- Water.
- Chemicals: pesticides, fungicides, cleaners etc...
- Plastic products:
 - o Pots and trays (numerous sizes, both recycled and virgin material).
 - Irrigation pipes.
 - Shade cloth and weed mat.
 - Crop netting.
 - o Bags.
- Soil products.
 - o Peat.
 - Perlite.
- Packaging: boxes, crates etc.
- Bamboo stakes.
- Waste: green waste, plastics, water etc. (to landfill, processing or recycling).
- Construction materials (farm infrastructure concrete, steel etc.)
- Services (consultants, financial and business services).
- Freight (local, interstate and international deliveries).

Method

The following methodology was used to develop *NurseryFootprint*

1. Scoping study

A comprehensive literature review was developed to ascertain gaps in existing knowledge. Furthermore, discussions with stakeholders in the nursery industry were also commissioned to identify the availability of emissions factors on processes such as the production of plastic/biodegradable containers and labels, growing media, transportation of goods disposal of disposal of product waste. This was finalized in July 2009.

2. Development of *NurseryFootprint*

A beta version of *NurseryFootprint* was developed to extend the capacity of the existing footprinting tool Hortcarboninfo. The beta version:

- Incorporated available data on emissions resulting from production nurseries including packing, growing media, transportation of raw materials and disposal of product waste.
- Separated emissions accounting according to different productions systems.
- Improved the user interface.

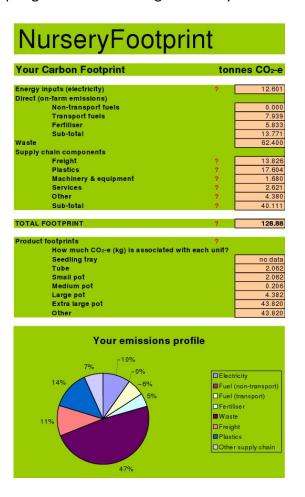
Incorporated a simple how to use guide

During this process, Growcom met with the author of Hortcarboninfo (Peter Deuter) to discuss potential modifications. Hortcarboninfo was modified through additional programming in Microsoft Excel to extend to level of emissions reporting beyond the farm gate. The new tool also incorporated a basic costs benefit analysis capable of monitoring costs and benefit of potential management/technology changes to reduce emissions and improve energy efficiency. This Beta version was circulated to the national Environment Committee in November 2009 for feedback prior to field trails.

3. Footprinting field trial

The tool was field tested at 5 production nurseries in the Brisbane area during early December 2009 to ensure that the excel interface was user-friendly and free of software and hardware issues. The final tool was delivered to NGIA December 18 2009.

An example of the output generated following data entry is as follows:



Start up splash screen

When opening the tool, the following splash screen appears.

NurseryFootprint version 1.0

A carbon footprinting tool for the Australian nursery and garden industry





User manual

To accompany the tool, a 29 page comprehensive user manual has been created for nursery owners/managers. This manual provides illustrated step-by-step instructions that will allow a grower to gain most benefit from using the calculator. The user manual is embedded as a Portable Document Format (pdf) file within the *Information* worksheet of the excel calculator. It will also be housed along with the calculator on the Environment pages of the NGIA website. Nursery & Garden Industry Australia will maintain the tool and as it is used more widely, Growcom will continue to make small improvements and modifications if required. Future updates of the tool will be undertaken by Growcom.

Cost-benefit analysis tool

A basic cost-benefit analysis tool to assist growers estimate the costs of emissions reductions via different means has been included with the tool. This allows a nursery owner/manager to compare the emissions generated per dollar spent on selected inputs (the major scope 1 and 2 sources - electricity, fuel and fertiliser) or emissions generated per dollar of income across their product range. These results will allow the manager to weigh up the various options for cutting emissions within their business and optimizing their profit-to-emissions ratio.

Custom toolbar

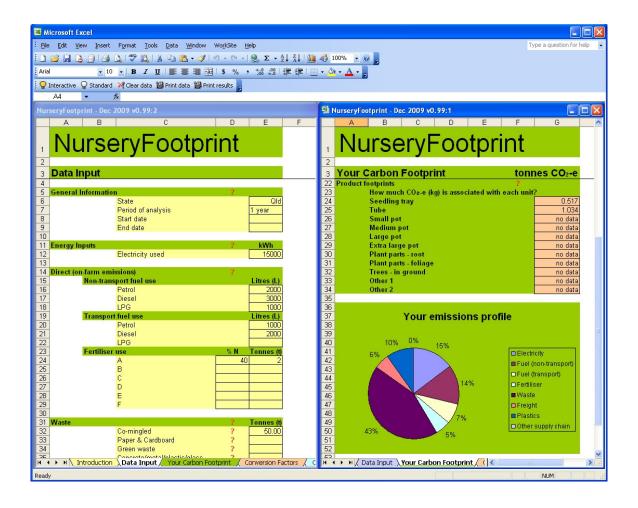
For easy navigation when using the tool, a toolbar has been added to simplify some of the functions within the calculator (eg. switching between modes, clearing data, printing data, and printing results). Consolidating the functions onto a single toolbar provides for a more consistent user interface and better compatibility across different operating systems and spreadsheet applications. The toolbar is displayed below.



Interactive mode

This is a multiple-sheet view that allows the user to see changes to the footprint or costbenefit results as the input data are altered. The user can switch between interactive and standard modes using buttons on the custom toolbar.

An example of the interactive mode follows.



Tool tips

Tool tips are available for each data entry item to assist the user what data to enter as well as provide some additional information (e.g. such as conversions between volume and weight for waste categories). An example is below:

Waste		unit conversion	Tonnes (t)
	Co-mingled Paper & Cardboard Green waste Concrete/metal/plastic/g	As a general rule, 1 cubic metre of green waste weighs about 0.24 toppe.	

Data pro forma

A data pro forma has also been created to facilitate the use of the calculator across a greater proportion of the industry. For example, an industry development officer could distribute the pro forma to a number of nurseries who can then enter the relevant data when most convenient. The completed pro forma could then be returned to the extension officer who can enter the data into the calculator with appropriate quality control. The industry development office network has been provided with the calculator, user manual and data pro forma. In 2010/11, a training workshop will be developed to provide potential users with a thorough overview of the tool and how best to maximise it.

The pro forma can be found as attachment 1. An electronic copy of the excel calculator can be found as attachment 2.

Further work

Standards compliant version

The *NurseryFootprint* calculator may require modifications to be fully compliant with the National Carbon Offset Standard for calculating the carbon footprint of a business. Although the final version of the Australian National Carbon Offset Standard (NCOS) was released in November 2009, specific processes and reporting requirements have not been finalised. It is envisaged that the amount of work required for this process to occur will depend on the final form of the regulations and administrative requirements, particularly concerning the approved calculation methods for indirect emissions.

Updates and bug fixes

Additional refinements and improvements may be made over time. These include bugfixes, the addition of new features, and refining conversion factors as emissions data is updated.

Reporting and benchmarking

As the tool is more widely used, NGIA will collect resulting footprint data to provide an emissions benchmark for the industry and identify particular areas that provide cost-effective opportunities for emissions reductions.

Web-based standalone version

A standalone version of the calculator that doesn't rely on other installed software may be required in the future. A web-based version of the calculator would enable users to access the calculator with nothing more than an internet connection and a modern web browser on any operating system. Any updates to the calculator or emissions factors would be immediately available to all users. The data would be stored on a hosted database that would enable easy analysis and benchmarking of results across the industry.

Troubleshooting guide

As the calculator is more widely used, questions received from users regarding the process of calculating their footprint could be incorporated into a 'Frequently asked Questions' troubleshooting guide and incorporated into the user manual.

Invasive Plants Audit

The survey was undertaken in two parts.

Part A: Evaluation of Production Lists

The aim of part A was to obtain plant production/availability lists from production nurseries across Australia and evaluate them for Weeds of National Significance (WoNS), National Environmental Alert Weeds, Sleeper Weeds and potentially invasive plants as listed in Grow Me Instead (GMI) regional publications.

328 plant production/availability lists were evaluated in this part of the national invasive plants survey. This survey targeted a national audience. The majority of these lists were returned by email or downloaded online.

Prior to distribution of part A, it was established that more than 300 businesses would be considered a representative sample of industry.

Part B: Industry Questionnaire

Quantitative information was obtained from this questionnaire to investigate the level of industry awareness of industry and government invasive plant/weed programs. 138 production nurseries and 83 retail nurseries participated in this questionnaire. The questionnaire targeted a national audience. A total of 208 or 85% of the sample were completed online. Some 28 surveys or 11% of the sample were returned by fax and the remaining questionnaires were returned by mail.

Information collected in the national invasive plants survey will be used to inform industry and assist in policy development on invasive plant issues. The full report has been circulated to all questionnaire participants and a summary of the full report will be provided as a Technical Nursery Paper in 2010. The existing Nursery Industry Invasive Plants Policy Position will be reviewed in 2010 through the National Environment Committee following full consultation with State Industry Associations. A copy of the technical report is provided as attachment 3.

Survey Methodology

Industry Consultation

Key issues from the GMI and 'What does your garden grow?' course evaluations as well as state/territory GMI committee feedback were used as a starting point for the consultant.

Based on these findings, the project objectives and methodology were clarified with NGIA National Environmental & Technical Policy Manager and NGIA Environment Committee. Together with the consultant, they helped to identify the key question areas to be answered through the survey and what type of information was to be collected. This process commenced in January 2009.

The state and territory associations were encouraged to participate in the consultation process, to ensure issues surrounding invasive plants/weeds were understood. The Development Officer network played an important role, providing feedback on the survey and encouraged industry participation in the survey.

Communications Strategy

Communications were an essential aspect of the project and helped in its success by encouraging survey participation and feedback. A comprehensive communications

strategy was implemented which targeted several channels including the NGIA website, NGIAs Clippings, NGIAs e-Comm post and State Publications including Grow WA, Leaflet Magazine QLD, NGINT Nursery Notes, NGISA Nursery Notes and NGINA Nursery & Garden News. Faxed survey forms were also sent to members and non members who had not responded to previous email invitations or published articles

National Survey

To address the objectives of this project, this survey was undertaken in two parts.

Part A: Evaluation of Production Lists

The initial aim of part A was to obtain plant production/availability lists from production nurseries across Australia, including members and non members and evaluate them for:

- 1) Weeds of National Significance
- 2) National Environmental Alert Weeds
- 3) Sleeper Weeds
- 4) Recognised garden escapes (As per each regional GMI booklet)

Members and non members were contacted through a series of communication channels as outlined above. Further investigation through the World Wide Web revealed other nurseries such as mail order businesses trading exclusively online. Internet based businesses and those trading through sites such as eBay were also targeted in this component of the project. If annual production/availability lists weren't available, the current availability list was deemed sufficient. This component of the project was completed in July 2009.

Part B: Industry Questionnaire

Design & Structure

The importance of developing and delivering a questionnaire that collects the required information in a quick and easy manner was recognised and given a high priority.

Following consultation with industry, the ensuing questionnaire was designed and targeted at a broader national audience of production and retail nurseries. The questions were closed in nature, making them easy to answer (therefore encouraging participation) and allowing quantitative analysis of the results. The survey was easily accessed online and took approximately 10 minutes to complete. The survey was developed using Survey Monkey.

To maximise participation, the length of the questionnaire was kept to a minimum. A 6 page electronic questionnaire was developed, that could also be faxed or posted to

businesses. Whilst the initial questionnaire was developed to be completed online, a further range of methods (e.g. fax streaming and email attachments) were used in an effort to maximise participation, so that the participants were able to complete the questionnaire in a manner that suited them.

The questionnaire consisted of 5 main sections. These included:

- Background information
- Invasive Plants Awareness
- Invasive Plants Resources
- Invasive Plants Extension
- Invasive Plants Management
- Further Comments and Suggestions

The questionnaire allowed for anonymity if the respondent preferred. Many nursery personnel prefer to guard their production, sales and business performance information closely and are often reluctant to share that information if they perceive that their competition were to have access to it. The survey was taken offline on 30 November 2009.

Survey Reach

Both parts of the survey targeted a national audience. Prior to distribution of part A, it was established that more than 300 businesses would be considered a representative sample of industry. In total, 328 production/ availability lists were received, the majority of these returned by email or downloaded online. The target was exceeded by 9%.

In part B of the survey, a total of 1721 businesses were forwarded a questionnaire via email, including 920 production nurseries and 801 retail businesses. In addition, a total of 2318 businesses were forwarded a questionnaire by fax, including 1170 production nurseries and 1148 retail businesses. A total of 244 (or approximately 12%) businesses returned a completed survey. The majority of responses were received by production nurseries (n = 138) followed by retail nurseries (n = 83). A total of 208 or 85% of the sample were completed online. Some 28 surveys or 11% were returned by fax and the remaining surveys were returned by mail.

Key Findings

The results from the national invasive plants survey indicated that:

 Industry is acting responsibly by not propagating and distributing WoNS and Sleeper Weeds.

- Tipuana tipu (Rosewood) was the only species on the Alert Weeds List identified
 on production/availability lists. It was identified on the lists of 3 nurseries,
 equivalent to <1% of nurseries surveyed across Australia. This reaffirms that
 industry is acting responsibly by not growing and distributing plants that may
 pose a serious threat to Australia's natural environment and primary industries.
- 92% of production nurseries are acting responsibly by not growing or distributing potentially invasive plants listed within GMI regional booklets. Of the 41 GMI plants identified on the surveyed production/availability lists, 29% were *Agapanthus* spp. No further information was provided on the specific spp. and it is difficult to ascertain if these were indeed, the Agapanthus listed in GMI (*Agapanthus praecox* Willd. subsp. *orientalis* (F.M.Leight.) F.M.Leight.).
- A high proportion of plant material is moved intra and interstate. This included sourcing plant material (such as plugs, propagation material etc) and distributing plant material (such as finished products, tube stock etc.). Only 4% of plant material is imported/exported.
- There was a high degree of industry awareness of GMI, NGI Invasive Plants Policy Position and NGIA Labelling guidelines. Conversely, less awareness was found with regard to the Nursery Industry Biosecurity Plan and the Our Environment, Your Backyard, World Environment Day Campaign.
- A high degree of awareness to local, state and national government weed lists excluding sleeper weeds. This is likely attributed to the agricultural context of this list.
- Government weed agencies and industry resources were highly regarded for providing reputable information on declared weeds and invasive plants.
- The Commonwealth Research Centre (CRC) for Weed Management's 'What does your garden grow?' educational program was poorly attended by industry. Less than 4% of industry had attended this program.
- Industry was conversant with GMI resources, however were not resourced with other industry policies and programs (i.e. NGI Invasive Weeds Policy Position or NGI Plant Labelling Guidelines).
- Industry was not adequately resourced with local, state and national government weed lists.
- The majority of businesses (59%) distribute information on declared weeds and invasive plants within their business. This was greatest for retail nurseries (73%).

- Over 50% of production nurseries did not formally distribute information on declared weeds and invasive plants within their business.
- Electronic distribution of information on declared weeds and invasive plants was the least favourable mechanism of information transfer within businesses (7%). Staff training also rated poorly (12%).
- The majority of industry actively promoted GMI (59%). This was greatest in retail nurseries.
- Educational collateral such as posters were utilised by the minority of businesses (35%) to provide relevant information on weeds and invasive plants to staff and customers.
- The majority of industry monitored their boundary for naturalised plants at least annually, with one in five monitoring their nursery every week. However, as several nurseries did not have on-site vegetation, these results should be interpreted with caution.
- Protecting on-site native or indigenous vegetation ranked highly among industry (46%). However, as several nurseries did not have on-site vegetation, these results should be interpreted with caution.
- The majority of industry (86%) considered pest/production weeds a major priority.
- Several strategies were commonly used to control pest/production weeds, with herbicide application and hand weeding the top two control strategies (87%).
- Few businesses had a documented weed management plan (23%).
- The majority of industry (90%) indicated that their on-farm weed management was adequate to excellent.

The national invasive plants survey provided information that demonstrates invasive plant campaigns, tools and resources have been widely adopted across the nursery industry, however indicated that there needs to be more progress in this area.

Recommendations

The following recommendations were developed on the basis of the national invasive plants survey. It is recommended that:

Communication

- A targeted communication strategy is required to reinforce the responsibility of nursery businesses in minimising the spread of potentially invasive plants that may occur from the high volume of border trade in live plants. This may include a web page or resource booklet that outlines on-farm biosecurity measures, encompassing invasive plants. These resources should list/provide available resources and tools from both industry and government. Industry resources should include the Nursery Industry Biosecurity Plan and the NGI Plant Labelling Guidelines.
- Greater uptake of NGI voluntary Plant Labelling Guidelines is encouraged to
 prevent the possibility of further enforced legislation. Uptake of voluntary
 educational programs by some nurseries will encourage other nurseries to
 participate. Greater recognition of these guidelines is required at all levels
 including retailers and plant label manufacturers in order to achieve this.
- Industry develops future World Environment Day campaigns that focus, in part, on invasive plant issues and more broadly biodiversity conservation.
- Greater uptake of on-farm biosecurity measures is encouraged among production nurseries and growing media businesses through NIASA and BioSecure HACCP. This would up-skill industry and build industry capacity in all aspects of biosecurity. These programs are less regulatory in approach, however robust, scientifically sound and audited on an annual basis to ensure their rigor.
- Continued engagement with government and external stakeholders is maintained to ensure these agencies are aware of proactive industry resources dealing with potentially invasive plants such as GMI. Engagement should also focus on industry accreditation including NIASA and BioSecure HACCP.
- Industry requests that government consider the introduction of a nursery registration system to enhance business, industry and government communication. Many nurseries are not members of NGIA and consequently may not be abreast of industry developments and policies concerning invasive plants. Moreover, in the event of an exotic weed incursion, a nursery registration scheme would enable fast and straight forward contact with all businesses. The quicker industry can respond to an incursion, the more likely they are to successfully eradicate it. This could potentially save government and industry million of dollars in eradication costs.

Research and Investment

- Industry in partnership with government agencies should jointly develop a weed risk assessment (WRA) system to assess weed risk of plant species and other taxa (i.e. cultivars, varieties etc.) currently being sold or proposed for sale in Australia (pre-release). This process must be scientifically sound using a process that is peer reviewed to satisfy requirements of the National Post-Border Weed Risk Management Protocol Australian Standard (HB 294:2006). The WRA should be calibrated by conducting weed risk assessments on ornamental plant species in Australia that have exhibited their potential weed risk (or lack thereof). Plants should be examined to the variety level to avoid confusion, recognising that there can be great differences in invasiveness between species and cultivars.
- The development of a mechanism for industry to access weed information at a local, state and national level in a timely and user friendly fashion is required. This could be in the form of a national web portal. The current situation, with multiple lists on multiple websites is often difficult to accurately locate, is confusing and economically unsound for businesses. Moreover there is often a lack of consistency between State and Territory websites in terms of terminology and data placement. These sites are often difficult to navigate and search.
- Greater uptake of industry's Environmental Management System (EMS) EcoHort
 which specifies how to manage native vegetation, wildlife and ecosystems
 including invasive plants on-site is supported and encouraged. Where this
 program is not viable (i.e. retail nurseries and wholesale markets), consider
 implementing a weed management plan to provide a holistic approach to weed
 management. The weed management plan may:
 - Identify what weed species are of concern in the local area and on-site
 - o Demonstrate awareness of relevant industry programs and policies
 - o Demonstrate awareness of state and federal declared weed lists
 - Identify weed control, monitoring and eradication measures and monitoring activities to manage weeds on-site and along the boundary of the business
 - Identify weed control measures and/or monitoring activities to be used to minimise the potential for weed species which have not been previously recorded
 - Incorporate an action plan to identify what steps a nursery can take to improve its weed management performance reporting procedures and schedule.
- Consider developing an EMS program for retail nurseries inline with EcoHort
 which specifies how to manage native vegetation, wildlife and ecosystems
 including invasive plants on-site. This program would supersede a weed
 management plan and would provide retail nurseries with a holistic approach to

managing a wide range of environmental and natural resource issues (i.e. water, energy waste generation etc.).

Capacity Building

- Industry continues to resource the program 'What does your garden grow?' to encompass and capture the nursery industry more fully. This is the only training program designed for industry to equip them with the skills to manage invasive plant issues. This program is beneficial for retail nurseries who are a key shop front to the general public on environmental issues, including invasive plants. Through educational programs such as 'What does your garden grow?', industry will increase public awareness and promote behavioural change in managing invasive plants in the wider community.
- Industry support widespread distribution of Grow Me Instead (GMI) booklets to ensure the community is versed with recognising and removing plants listed as potentially invasive. A national website following the recent launch of the Queensland GMI website should also be developed to maximise the reach of this program. Contact should be made with curators of institutions such as the many botanic gardens as well as council officers to further promote responsible gardening through this program. Ongoing engagement with the horticultural media and mainstream media is also required to positively position industry achievements whilst capturing widespread community interest.

Co-operation

- Consistent co-operation and dialogue is maintained between Nursery Industry
 Development Officers, Business Skills Development Officers with the National
 Environmental & Technical Policy Manager. This will ensure comprehensive
 coverage of production and retail nurseries across the vast distances within each
 state and territory. It will also ensure that existing research is disseminated
 widely and effectively to all stakeholders to encourage greater adoption of
 outcomes.
- Ensure consistent co-operation between the various environmental weeds organisations and industry. Continued goodwill and cooperation between all stakeholders in the fight against the weeds menace will eliminate the need for costly legislation and controls and will also erase past misunderstandings due to ignorance or belligerent attitudes.

<u>Implications for industry</u>

Climate change and variability will likely play a significant role in shaping the future of the Australian Nursery & Garden Industry. One of the key challenges arising from predicted climate change and variability is the increased costs associated with on farm inputs (e.g. fertiliser, energy etc.). The development of *NurseryFootprint* is crucial for industry to quantify the carbon footprint of Australian production nurseries. This tool will be launched in April 2010 at the Nursery & Garden Industry National Conference in Darwin. Following the conference, the tool and user manual will be downloadable from the Environment Pages of the Nursery & Garden Industry website and a technical Nursery Paper will also be written to summarise the tool. In 2010/11, this tool will be incorporated into a training workshop.

Data generated during nursery energy audits will be used to benchmark the carbon footprint of each business and identify emission reduction opportunities on-farm and along the supply chain without compromising production outputs. Further work is currently underway in project NY09016 to evaluate energy co-generation in production nurseries.

The invasive plants survey of the Australian nursery industry has identified several areas of focus to ensure industry has the capacity to address this issue as it continues to impact on business sustainability. Climate change may result in the introduction or exotic weed species and furthermore, changes in climate may alter weed population dynamics. These recommendations will be actioned by NGIA through the Environment Committee during 2010, with priority given towards a communication strategy to ensure industry is resourced and conversant with all tools developed for nursery production. The development of a scientifically robust weed risk assessment will also require immediate action from NGIA. In addition, the existing NGI Invasive Plants Policy Position will also be updated to ensure industry has direction on this pertinent environmental issue.

Revised Financial Review

All sub projects relating to this project have been completed and are included in the financial summary below. The financial summary for the project is as follows:

Sub Project	Budget	Actual	Variance
1. Facilitate Environment Committee Meetings	\$12,000	\$12,000	-
2. Integrated policy support (IDO National roles)		\$110,000	
·		Itemised as follows:	
		QLD: \$20,000	
		NSW: \$20,000	
		VIC: \$20,000	
	\$110,000	WA: \$15,000	-
		SA: \$15,000	
		TAS: \$10,000	
		Conference Registration \$10,000	
3. Development of Key Pest Contingency Plans 4. Determination of the validity of	\$45,000	\$45,000	-
physical tests for soil moisture retention as predictors of the response of plants grown in blends of potting mix and ameliorants under restricted watering	\$15,000	\$15,000	-
5.Plant growth impacts from water contaminants	\$10,000	\$10,000	-
6. Nursery specific carbon foot printing and cost benefit analysis tool	\$60,000	\$60,000	-
7. Audit of the incidence of invasive plants being grown and sold by industry	\$20,000	\$20,000	-
Total	\$272,000	\$272,000	\$0

Revised Milestone Payment Schedule

The revised milestone payment schedule is as follows:

Milestone	Funding Amount	Status
101 Contract Signed (15/08/08)	\$183,000	Received by NGIA from HAL
102 6 Month Progress (30/01/09)	\$31,600	Received by NGIA from HAL
103 Final Report (28/08/09)	\$28,700	Received by NGIA from HAL
190 Appendment to Final Report summarising outcomes of the Industry Carbon Footprint tool and the Invasive Plants Audit (21/12/09)	\$28,700	Submitted to HAL

Summary of Attachments

- 1. *NurseryFootprint* pro forma
- 2. NurseryFootprint calculator
- 3. Technical Report on the National Invasive Plants Survey of the Australian Nursery & Garden Industry

Attachment 1: NurseryFootprint Data Pro Forma

These tables can be used as the basis for a data pro forma to facilitate data collection from nursery businesses. These tables can be inserted into a new document with custom page layout, contact details and other relevant information.

Please enter the required data for each of the products and services listed below. The table provides descriptions of what should be included in each category and the units required.

General Information		
State	It's important to identify the state in which your business is located. The emissions related to electricity use vary among the states because of the different methods of generation as a proportion of the total (eg. coal, gas, or renewables).	
Period of analysis	Period of analysis Select the time period for the analysis. Options are 1 month, 1 quarter or 1 year. One year is the most useful period to use.	
Start date	Please enter the start date for the period of interest in the format dd/mm/yy.	
End date	Please enter the end date for the period of interest in the format dd/mm/yy	
Energy Inputs		kWh
Electricity used	Enter the total amount of electricity consumed by the business during the period of analysis (in kilowatt-hours, kWh). Only include electricity sourced from the grid from non-renewable sources. If you purchase accredited <i>GreenPower</i> from your supplier, where a proportion is generated from renewable sources, adjust this value to reflect the proportion of fossil fuel generation. For example, if you purchase 10% <i>Greenpower</i> , then	

ct (on-farm) emissions			
Non-transport	Liquid fuels used in non-transport or stationary farm machinery (pumps, gene	erators,	_
fuels	boilers etc.).		L
Petrol	Enter the total volume of all variants of petrol (unleaded, standard, premium, E used for non-transport applications. In litres (L).	10 etc.)	
Diesel	Enter the total volume of diesel used in non-transport machinery. In litres (L).		
LPG	Enter the total amount of LPG used in non-transport applications. In kilograms	(kg).	
Transport fuels	Liquid fuels used in vehicles or mobile machinery (eg. utes, tractors etc.).		L
Petrol	Enter the total volume of all variants of petrol (unleaded, standard, premium, E used in transport applications. In litres (L).	10 etc.)	
Diesel	Enter the total volume of diesel used in vehicles or mobile machinery. In litres ((L).	
LPG	Enter the total amount of LPG used in transport applications. In kilograms (kg).		
Fertilisers	Nitrogen-based fertilisers applied to plants or mixed with potting media.	%N	Tonr
A	This section provides room for up to 6 different fertiliser types. For each		
В	type, please enter the total amount used (in tonnes) and the percent		
С	nitrogen content (%N) according to the manufacturer's data (between 0 and		
D	100). If you use multiple types or brands with the same or similar nitrogen		
E	levels, the amounts can be combined into a single total for each level.		
F			
	Waste or by-products from business activities that are buried or used on the f	arm. Do	
	Waste or by-products from business activities that are buried or used on the f not include waste that was sent for recycling or off-farm processing – this sho		
	* * * * * * * * * * * * * * * * * * * *		Tonn
F ete Co-mingled	not include waste that was sent for recycling or off-farm processing – this sho included in the Waste disposal section under Supply chain components. Please enter the amount of co-mingled or mixed waste (in tonnes). As a general	uld be	Tonn
te	not include waste that was sent for recycling or off-farm processing – this sho included in the Waste disposal section under Supply chain components.	uld be	Tonn

	paper & cardboard waste weighs about 0.09 tonne.	
Green waste	Please enter the amount of green or organic waste buried as fill or used as mulch /	
	compost (in tonnes). 1 cubic metre of green waste weighs about 0.24 tonne.	
Concrete/metal/	Please enter the amount of building/construction/ product waste, eg. concrete, metal,	
plastic/glass	glass, plastic, synthetic fabrics etc. (in tonnes). 1 cubic metre of mixed construction waste	
	weighs about 1.5 tonne.	

Supply chain components	In this section, simply enter how much money your business spent on each type of product or service.	\$
Plastic products (incl. pots)	All moulded plastic products, including pots, seedling trays, bags, tanks, bottles, pipes, labels etc There is no need to distinguish between different types of moulded plastic – eg. polypropylene, polyethylene etc	*
Road freight	Road freight transport services, including long-distance haulage, local deliveries and everything in between. This should also include freight for inbound deliveries if the information is available (eg. on an itemised invoice).	
Air freight and transport	Air freight transport (both in and out) and passenger services.	
Rail freight	Rail freight transport services (both in and out).	
Sea freight	Sea freight transport services (both in and out).	
Textile products	Fabrics and woven plastic products such as rope, shadecloth, weedmat, insect screens, tarpaulins, carpet etc	
Sawmill products	Bark, woodchips, sawdust, dressed timber, treated timber etc	
Other wood products	Wooden boxes, crates, pallets, plywood, veneers, particle board, MDF, panels, mouldings etc	
Paper products and containers	Paper products, including copy paper, card, toilet paper, tissues, paper towels, cardboard trays, paper sleeves, plates, decorations etc	
Stationery	Stationery and printed paper products (letterhead, invoices etc.).	
Agricultural	Agricultural chemicals such as insecticides, pesticides, herbicides, fungicides etc Do not	

chemicals	include fertilisers in this section as the emissions from fertiliser are dealt with directly.	
Cleaning chemicals	Soaps, detergents, bleach etc	
Rubber products	Hoses, foam, fan belts, conveyor belts, pipes, tyres, gloves etc	
Lime	Agricultural lime.	
Concrete and mortar	Ready mix concrete and mortar.	
Concrete products	Manufactured concrete products, such as bricks, tiles, concrete pipes, plasterboard etc	
Mining products	Products of simple extraction processes, such as sand, gravel, soil, peat, limestone, clay, gypsum etc This category also includes simple products derived from these materials, such as <i>Jiffy</i> pots.	
Mineral products (non-metallic)	Processed mineral products, including perlite, vermiculite, fibre insulation etc	
Basic iron & steel	Fencing wire, tie wire, chain etc	
Non-ferrous metal products	Manufactured metal products made from aluminium, copper, lead, zinc, etc. and their alloys). This includes sheets, tubes, plate, sections and pipes.	
Structural metal products	Steel construction products such as reinforcing mesh, rods, frames, doors, windows etc	
Sheet metal products	Metal products manufactured from steel sheet, eg. tanks, drums, reservoirs, guttering, gas bottles etc	
Fabricated metal products	Machined and/or hardened steel products, such as nuts, bolts, nails, locks, hardware, hand tools etc	
Motor vehicles and	Complete road vehicles, and parts for vehicles and other road transport equipment such	
parts	as trailers or floats.	
Scientific	Scientific or technical equipment used for survey, navigation, monitoring and/or analysis	
equipment	(eg. GPS, weather stations, data loggers, cameras etc.).	
Electronic	Radios, telephones (fixed line and mobile), data processing equipment, TV, video, alarms,	
equipment	photocopiers etc	
Electrical	Light bulbs, light fittings, electrical wire, motors, transformers, batteries etc	

equipment	
Agricultural	Farm-specific machinery, including tractors, slashers, conveyors, potting machines,
machinery	excavators, bobcats, forklifts etc
Other machinery /	General machinery such as pumps, air conditioners, power tools, welding equipment,
equipment	processing and packing equipment etc
Prefabricated	Prefabricated or kit sheds, carports, garages etc
buildings	
Furniture	All hard and soft furniture. This includes office furniture, desks, filing cabinets,
	mattresses, cushions etc
Water supply and	Water supply and sewerage services (eg. tankers).
sewerage	
Mechanical repairs	All repair services for vehicles and farm machinery.
Communications	Telecommunications (phone and internet services), post and courier services.
Banking	Banking and other financial services (eg. fees and charges).
Insurance	Insurance services (eg. policy premiums).
Technical services	Technical or scientific consulting services.
Business services	Business management services, such as accounting, taxation, administrative, legal and
	other services.
Waste disposal	Waste processing and disposal, eg. recycling services, garbage removal and other sanitary services.

Pro	duct Information	In this section, enter the number of units sold in each general product category, and the percentage of your total farm income that is generated by each product category. This data will be used to estimate the footprint associated with each unit produced.	# sold	% income
	Seedling tray	Seedling trays, propagation trays or similar.		
	Tube	40mm tubes (either round or square).		
	Small pot	Pots with a diameter of approx. 140mm.		

Med pot	Pots with a diameter of approx. 200mm.	
Large pot	Pots with a diameter of approx. 300mm.	
Extra large pot	Pots with a diameter of approx. 400mm or larger.	
Plant parts - roots	Plants parts grown below ground, such as corms etc	
Plant parts - foliage	Cut foliage, stems, flowers etc	
Trees - in ground	Mature trees grown in the ground.	
Other 1	These categories are for any products that don't fit neatly into any of the	
Other 2	listed categories.	

Where should I enter data on product x?

The following table provides a quick reference to where you should enter data for some common nursery products. This will be particularly helpful for the supply chain emission categories.

Nursery product	Category
Electricity	Energy inputs – Electricity.
Liquid fuels	Direct emissions – Transport and Non-transport fuels. There are separate categories for diesel, petrol and LPG.
Fertiliser	Direct emissions – Fertilisers. There is room to enter up to 6 different fertiliser types and you can combine data for fertilisers with similar nitrogen levels.
Freight	There are separate categories for road, rail, sea and air freight. This includes freight for your products as well as inputs (if the information is available).
Pesticides, fungicides, etc.	Agricultural chemicals.
Cleaning chemicals	Cleaning chemicals.
Plant pots and trays	Plastic products.

Jiffy pots	Mining products – basic extraction.
Plant labels and tags	Plastic products.
Irrigation pipes	Plastic products.
Shadecloth and weedmat	Textile products.
Crop netting	Textile products.
Plant bags	Plastic products.
Water	Water supply and sewerage.
Soil products	Mining products – basic extraction.
Peat	Mining products – basic extraction.
Bark	Sawmill products.
Perlite	Mineral products (non-metallic).
Vermiculite	Mineral products (non-metallic).
Cardboard boxes	Paper containers and products.
Bamboo stakes	Sawmill products.

Attachment 2: NurseryFootprint calculator

See enclosed CD.

Attachment 3: Technical Report on the National Invasive Plants Survey of the Australian Nursery & Garden Industry

National Invasive Plants Survey

Final Report



A Report to Nursery & Garden Industry Australia by

Delwyn Thomas and Dr Anthony Kachenko

December 2009

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Disclaime

This report has been prepared in accordance with the scope of services described in the contract between Nursery & Garden Industry Australia and Delwyn Thomas. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the client. Furthermore, the report has been prepared solely for use by the client and Delwyn Thomas accepts no responsibility for its use by other parties.



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Executive Summary

Project Overview

The nursery and garden industry is confronted with a variety of environmental and natural resource issues that requires careful consideration and management. Invasive plants, or environmental weeds, is one of several key issues that the nursery and garden industry is actively engaged with. These naturalised plants reproduce, often in large numbers, at considerable distance from the parent plants and have the potential to spread over an even larger area. Consequently, these plants will have tremendous impact on biodiversity and primary production. They may reduce productivity of our land and waterways, reduce biodiversity in natural areas and thereby impact on the economy through damage to human, animal health, crop or stock losses.

For several years, industry has endeavoured to act responsibly in managing invasive plants thorough awareness campaigns and educational materials, including tools and resources for production and retail nurseries across Australia. Industry is aware that a whole of community response is required to address invasive plants at both a regional and national level requiring cooperation from all stakeholders including government, utilities and the broader community. One industry driven model encompassing the full spectrum of stakeholders is the Grow Me Instead (GMI) program.

This study helps to identify the success of industry initiatives associated with invasive plant management by providing information that demonstrates industry awareness of both industry and government invasive plant programs. The outcomes will help to inform, develop and improve industry strategy and invasive plant policies.

National Invasive Plants Survey

The national invasive plants survey resulted in the collection of large amounts of information and data which has been analysed. The survey was undertaken in two parts.

Part A: Evaluation of Production Lists

The aim of part A was to obtain plant production/availability lists from production nurseries across Australia and evaluate them for Weeds of National Significance (WoNS), National Environmental Alert Weeds, Sleeper Weeds and potentially invasive plants as listed in GMI regional publications.

328 plant production/availability lists were evaluated in this part of the national invasive plants survey. This survey targeted a national audience. The majority of these lists were returned by email or downloaded online.

Prior to distribution of part A, it was established that more than 300 businesses would be considered a representative sample of industry.

Part B: Industry Questionnaire

Quantitative information was obtained from this questionnaire to investigate the level of industry awareness of industry and government invasive plant/weed programs. 138 production nurseries and 83 retail nurseries participated in this questionnaire. The questionnaire targeted a national audience. A total of 208 or 85% of the sample were completed online. Some 28 surveys or 11% of the sample were returned by fax and the remaining questionnaires were returned by mail.

Information collected in the national invasive plants survey will be used to inform industry and assist in policy development on invasive plant issues.

Key Findings

The results from the national invasive plants survey indicated that:

- Industry is acting responsibly by not propagating and distributing WoNS and Sleeper Weeds.
- Tipuana tipu (Rosewood) was the only species on the Alert Weeds List identified on production/availability lists. It was identified on the lists of 3 nurseries, equivalent to <1% of nurseries surveyed across Australia. This reaffirms that industry is acting responsibly by not growing and distributing plants that may pose a serious threat to Australia's natural environment and primary industries.
- 92% of production nurseries are acting responsibly by not growing or distributing potentially invasive plants listed within GMI regional booklets. Of the 41 GMI plants identified on the surveyed production/availability lists, 29% were *Agapanthus* spp. No further information was provided on the specific spp. and it is difficult to ascertain if these were indeed, the Agapanthus listed in GMI (*Agapanthus praecox* Willd. subsp. *orientalis* (F.M.Leight.) F.M.Leight.).
- A high proportion of plant material is moved intra and interstate. This included sourcing plant material (such as plugs, propagation material etc) and distributing plant material (such as finished products, tube stock etc.). Only 4% of plant material is imported/exported.
- There was a high degree of industry awareness of GMI, NGI Invasive Plants Policy Position and NGIA Labelling guidelines. Conversely, less awareness was found with regard to the Nursery Industry Biosecurity Plan and the Our Environment, Your Backyard, World Environment Day Campaign.
- A high degree of awareness to local, state and national government weed lists excluding sleeper weeds. This is likely attributed to the agricultural context of this list.

- Government weed agencies and industry resources were highly regarded for providing reputable information on declared weeds and invasive plants.
- The Commonwealth Research Centre (CRC) for Weed Management's 'What does your garden grow?' educational program was poorly attended by industry. Less than 4% of industry had attended this program.
- Industry was conversant with GMI resources, however were not resourced with other industry policies and programs (i.e. NGI Invasive Weeds Policy Position or NGI Plant Labelling Guidelines).
- Industry was not adequately resourced with local, state and national government weed lists.
- The majority of businesses (59%) distribute information on declared weeds and invasive plants within their business. This was greatest for retail nurseries (73%).
- Over 50% of production nurseries did not formally distribute information on declared weeds and invasive plants within their business.
- Electronic distribution of information on declared weeds and invasive plants was the least favourable mechanism of information transfer within businesses (7%). Staff training also rated poorly (12%).
- The majority of industry actively promoted GMI (59%). This was greatest in retail nurseries.
- Educational collateral such as posters were utilised by the minority of businesses (35%) to provide relevant information on weeds and invasive plants to staff and customers.
- The majority of industry monitored their boundary for naturalised plants at least annually, with one in five monitoring their nursery every week. However, as several nurseries did not have on-site vegetation, these results should be interpreted with caution.
- Protecting on-site native or indigenous vegetation ranked highly among industry (46%). However, as several nurseries did not have on-site vegetation, these results should be interpreted with caution.
- The majority of industry (86%) considered pest/production weeds a major priority.
- Several strategies were commonly used to control pest/production weeds, with herbicide application and hand weeding the top two control strategies (87%).
- Few businesses had a documented weed management plan (23%).

• The majority of industry (90%) indicated that their on-farm weed management was adequate to excellent.

The national invasive plants survey provided information that demonstrates invasive plant campaigns, tools and resources have been widely adopted across the nursery industry, however indicated that there needs to be more progress in this area.

Recommendations

The following recommendations were developed on the basis of the national invasive plants survey. It is recommended that:

Communication

- A targeted communication strategy is required to reinforce the responsibility of nursery businesses in minimising the spread of potentially invasive plants that may occur from the high volume of border trade in live plants. This may include a web page or resource booklet that outlines on-farm biosecurity measures, encompassing invasive plants. These resources should list/provide available resources and tools from both industry and government. Industry resources should include the Nursery Industry Biosecurity Plan and the NGI Plant Labelling Guidelines.
- Greater uptake of NGI voluntary Plant Labelling Guidelines is encouraged to
 prevent the possibility of further enforced legislation. Uptake of voluntary
 educational programs by some nurseries will encourage other nurseries to
 participate. Greater recognition of these guidelines is required at all levels
 including retailers and plant label manufacturers in order to achieve this.
- Industry develops future World Environment Day campaigns that focus, in part, on invasive plant issues and more broadly biodiversity conservation.
- Greater uptake of on-farm biosecurity measures is encouraged among production nurseries and growing media businesses through NIASA and BioSecure HACCP. This would up-skill industry and build industry capacity in all aspects of biosecurity. These programs are less regulatory in approach, however robust, scientifically sound and audited on an annual basis to ensure their rigor.
- Continued engagement with government and external stakeholders is maintained to ensure these agencies are aware of proactive industry resources dealing with potentially invasive plants such as GMI. Engagement should also focus on industry accreditation including NIASA and BioSecure HACCP.
- Industry requests that government consider the introduction of a nursery registration system to enhance business, industry and government communication. Many nurseries are not members of NGIA and consequently may not be abreast of industry developments and policies concerning invasive plants. Moreover, in the event of an exotic weed incursion, a nursery

registration scheme would enable fast and straight forward contact with all businesses. The quicker industry can respond to an incursion, the more likely they are to successfully eradicate it. This could potentially save government and industry million of dollars in eradication costs.

Research and Investment

- Industry in partnership with government agencies should jointly develop a weed risk assessment (WRA) system to assess weed risk of plant species and other taxa (i.e. cultivars, varieties etc.) currently being sold or proposed for sale in Australia (pre-release). This process must be scientifically sound using a process that is peer reviewed to satisfy requirements of the National Post-Border Weed Risk Management Protocol Australian Standard (HB 294:2006). The WRA should be calibrated by conducting weed risk assessments on ornamental plant species in Australia that have exhibited their potential weed risk (or lack thereof). Plants should be examined to the variety level to avoid confusion, recognising that there can be great differences in invasiveness between species and cultivars.
- The development of a mechanism for industry to access weed information at a local, state and national level in a timely and user friendly fashion is required. This could be in the form of a national web portal. The current situation, with multiple lists on multiple websites is often difficult to accurately locate, is confusing and economically unsound for businesses. Moreover there is often a lack of consistency between State and Territory websites in terms of terminology and data placement. These sites are often difficult to navigate and search.
- Greater uptake of industry's Environmental Management System (EMS)
 EcoHort which specifies how to manage native vegetation, wildlife and
 ecosystems including invasive plants on-site is supported and encouraged.
 Where this program is not viable (i.e. retail nurseries and wholesale markets),
 consider implementing a weed management plan to provide a holistic
 approach to weed management. The weed management plan may:
 - o Identify what weed species are of concern in the local area and on-site
 - o Demonstrate awareness of relevant industry programs and policies
 - Demonstrate awareness of state and federal declared weed lists
 - Identify weed control, monitoring and eradication measures and monitoring activities to manage weeds on-site and along the boundary of the business
 - Identify weed control measures and/or monitoring activities to be used to minimise the potential for weed species which have not been previously recorded
 - Incorporate an action plan to identify what steps a nursery can take to improve its weed management performance reporting procedures and schedule.
- Consider developing an EMS program for retail nurseries inline with EcoHort which specifies how to manage native vegetation, wildlife and ecosystems including invasive plants on-site. This program would supersede a weed

management plan and would provide retail nurseries with a holistic approach to managing a wide range of environmental and natural resource issues (i.e. water, energy waste generation etc.).

Capacity Building

- Industry continues to resource the program 'What does your garden grow?' to encompass and capture the nursery industry more fully. This is the only training program designed for industry to equip them with the skills to manage invasive plant issues. This program is beneficial for retail nurseries who are a key shop front to the general public on environmental issues, including invasive plants. Through educational programs such as 'What does your garden grow?', industry will increase public awareness and promote behavioural change in managing invasive plants in the wider community.
- Industry support widespread distribution of Grow Me Instead (GMI) booklets to ensure the community is versed with recognising and removing plants listed as potentially invasive. A national website following the recent launch of the Queensland GMI website should also be developed to maximise the reach of this program. Contact should be made with curators of institutions such as the many botanic gardens as well as council officers to further promote responsible gardening through this program. Ongoing engagement with the horticultural media and mainstream media is also required to positively position industry achievements whilst capturing widespread community interest.

Co-operation

- Consistent co-operation and dialogue is maintained between Nursery Industry Development Officers, Business Skills Development Officers with the National Environmental & Technical Policy Manager. This will ensure comprehensive coverage of production and retail nurseries across the vast distances within each state and territory. It will also ensure that existing research is disseminated widely and effectively to all stakeholders to encourage greater adoption of outcomes.
- Ensure consistent co-operation between the various environmental weeds organisations and industry. Continued goodwill and cooperation between all stakeholders in the fight against the weeds menace will eliminate the need for costly legislation and controls and will also erase past misunderstandings due to ignorance or belligerent attitudes.

1.0 Introduction

1.1 Background

In recent years, Nursery & Garden Industry Australia (NGIA) has taken considerable steps towards reducing the spread of invasive plants. The Grow Me Instead (GMI) campaign is one of several industry-driven initiatives providing relevant information to nursery operators and the wider gardening public about plants which are potentially invasive. This campaign highlighted industry's desire to minimise the spread of potentially invasive plants in a proactive and positive manner.

The GMI project was originally initiated by Nursery and Garden Industry NSW & ACT (NGINA) to demonstrate environmental stewardship to industry and the wider community by removing from propagation and sale, plants deemed to be environmentally unsound. The directors of NGINA adopted the concept of GMI as a policy for all members of the Association. The program was managed by a GMI Committee that consisted of representation from NGINA, Sydney Regional Weeds committee, the NSW Department of Primary Industry (DPI), Local Government Authorities (LGA's), Catchment Management Authorities (CMA's) and private consultants.

This first booklet met with a great response from the general public, the LGA's, CMA's, DPI and most especially the Environmental Trust who offered further funding to 'value add' the project. Following the success of this publication, NGIA in partnership with the Federal Government under the Department of Agriculture, Fisheries and Forestry 'Defeating the Weeds Menace' program secured funding to develop, print and distribute GMI booklets across every state and territory of Australia. Each regional booklet contained images and text of 27 potentially invasive plants and offered suggested suitable alternatives. These booklets aimed to increase awareness and educate growers, retailers and the wider gardening public about potentially invasive plants.

Each booklet was managed by a State/Territory GMI Committee. Potentially invasive plants selected for each booklet had to meet three dominant points before being considered.

- 1) Target plants had to be observed in sufficient numbers across more than one region
- 2) Demonstrable evidence of their impact on the natural environment thereby altering biodiversity, damage to human and animal health or crop or stock losses due to weed infestation was to be recorded in detail
- 3) The plants nominated as potentially invasive had to be commonly available in nurseries but not already classified/declared as noxious weeds

Plants selected as potentially invasive could be either exotic or indigenous. For every potentially invasive plant, a minimum of three non-invasive plants were selected as alternatives. It was recommended that the alternatives would fall within the following guidelines:

1) Must be widely available in the trade

- 2) Must not have readily visible 'weedy' tendencies such as heavy seed set
- 3) Must be generally reliable garden plants across the wide range of soils and climates within each region

A fourth consideration was that suggested alternatives, where possible, should resemble the target plant in height, size, flower colour and also require the same soil and climatic conditions.

The GMI program fostered strong relationships with stakeholders and provided industry with recognition for its initiatives in combating the spread of invasive plants. For example, industry was involved with the Cooperative Research Centre (CRC) for Australian Weed Management in the development of the 'What does your garden grow?' training program. Various weeds committees in different locations outside the Sydney Basin including the South Coast Illawarra region, sought permission to produce a local copy of the booklet using the Grow Me Instead format and layout, provided that the same criteria was applied to these projects.

Grow Me Instead was written into NGI Invasive Plants Policy Position in May 2006. The Policy Position called for on-going support for the GMI program as it was evident that this program had proactively addressed invasive plants at the regional level in a manner that positively engaged the NGI with the broader community. The development of the NGI Invasive Plants Policy Position came about following criticism from government authorities, naturalists and weed societies directed towards the Nursery & Garden Industry (NGI) for many of the garden escapes invading bushland and remnant vegetation.

It must be noted that the GMI program did not have jurisdiction in law to ban and restrict the sale of potentially invasive plants. The GMI program was a voluntary program and its adoption by industry was encouraged by all Australian Garden Centre Accreditation Scheme (AGCAS) and Nursery Industry Accreditation Scheme Australia (NIASA) businesses. Furthermore, due to the vast nature of the Australian landscape and the extensive variations in climatic conditions and soils, the GMI regional booklets were developed primarily as an educational tool. In the current economic circumstances it was impossible to cover each region in detail (i.e. Köppen classification scheme). However, in every instance gardeners are encouraged to seek further advice from their local garden centre specialists. The nursery industry actively encourages members to maintain knowledge of problem plants through approved internet websites (i.e. government weed agencies) and industry resources (e.g. Nursery Papers) connecting them to relevant sources of information.

Managing invasive plants remains a key priority for industry, particularly with regards to biosecurity which has emerged as a major global, national, regional and on-farm issue. One of the key issues at present is the inability of NGI to 'police' all aspects of plant propagation, sale and distribution. For example, the huge buying capacity of the big-box retailers who purchase and sell through a store distribution system may often send plants to regions where the plant may have the established potential to become invasive. Production nurseries inadvertently sell to these big-box retailers where plants are transported and sold in several localities where climatic conditions may result in these plants becoming unsuitable or undesirable.

Markets and road side stalls may also play a part in the distribution of unsuitable plant material. This is extremely difficult to control since most of these businesses are 'back yarders' and are not affiliated with NGI. Reliable contact with these growers is difficult which limits important communication of current biosecurity warnings, changes of policy and more importantly, communications relating to the Emergency Plant Pest Response Deed (EPPRD) should industry face an incursion of an exotic pest. Furthermore, non-member production or retail nurseries may also seize the opportunity to propagate or sell a plant that industry has withdrawn from sale due to their distance from industry communications. This may also restrict implementation of the NGI National Plant Labelling Guidelines.

Another key avenue in the distribution of plant material is through the myriad of online mail order companies, the majority of which are non members. Several of these businesses fill orders interstate, and often send plants that are deemed by industry as invasive. On a lesser scale, plant material is transposed intra and interstate by travellers. State quarantine measures aim to minimise the spread of weeds from one part of Australia to another. These measures operate under state or territory legislation.

In order to maintain a proactive position in addressing invasive plant issues, it's necessary for industry to demonstrate that it is a responsible and assertive leader on this key environmental issue. This project will contribute to clarifying key achievements and identify if any gaps exist in current knowledge on invasive plant issues. This information will be used to assist the NGI in demonstrating its environmental performance and the outcomes will be used to inform, develop and improve industry strategy and policy positions on invasive plants and biosecurity.

1.2 Survey Objectives

The key objectives of this project were to:

- Examine the production and availability of potentially invasive plants on nursery availability lists nationally;
- Identify the level of industry awareness of industry and government invasive plant/weed programs; and
- Identify gaps and functions industry can perform in this area.

2.0 Assumptions

2.1 Production versus Retail

This project focused on the production and retail nursery sectors.

A **production nursery** is defined as a place where plants are propagated, grown and/or distributed to be grown to a usable size, for sale to other consumers and distributors such as retail nurseries, commercial landscapers, cut flower growers, forestry and agricultural producers.

A **retail nursery** is defined as a nursery that sells plants to the general public. In a retail nursery, plants are not usually propagated but rather purchased from production nurseries, wholesale nurseries and resellers.

A **plant broker** is defined as a business sourcing, selecting and/or transporting plants and plant material to customers. Plant brokers may also be involved in the import and export of plant and plant materials.

A **wholesale market** is defined as a nursery that supplies/distributes plants and allied products to other consumers and distributors such as retail nurseries, commercial landscapers, cut flower growers, forestry and agricultural producers. These nurseries do not usually propagated plants.

Other represents those businesses that fall outside of the above sectors. This included government organisations, educational institutions and property maintenance contractors.

2.2 Geographic Variations

Nurseries located in different regions of Australia and in fact within each region and state, have differing lists of plants that have become or have the potential to become invasive. For example, a plant that has become invasive in one region may be a safe and valued garden plant in another. Therefore, the project focused on and collected information from a range of locations across Australia including different states and territories and focused on the different climatic zones.

2.3 National Survey

Given that the survey was designed to be non-ambiguous and easy to complete, it was assumed that all questions were interpreted and answered correctly by respondents.

Gaps in the survey responses generally meant that individuals did not have or did not know where to gain access to the required information. While not completely desirable, response gaps do provide additional information. For example, if a significant proportion of nurseries do not know their local invasive plant lists, this suggests a need to direct nurseries towards the sources of information, for example to the national weeds authorities, LGA's or CMA's within their region.

Business size was based on information relating to the number of staff employed.

2.4 Industry Best Practice

Best practice was defined in the study using **Australian Garden Centre Accreditation Scheme** (AGCAS) and Nursery Production Farm Management System (NPFMS).

The NPFMS incorporates three key programs designed for nursery production.

Nursery Industry Accreditation Scheme Australia (NIASA) which is a national scheme designed for production nurseries and growing media businesses to improve production efficiency, whilst being mindful of the environment in order to enhance business professionalism and profitability. This program included a wide range of issues ranging from crop hygiene to crop management practices and water management to general site management.

EcoHort, which is a national industry-specific EMS, provides a systematic approach for production nurseries and growing media businesses to assess their environmental and natural resource management responsibilities. This program builds onto NIASA.

BioSecure *HACCP* which is an industry-specific biosecurity program for production nurseries and growing media businesses that enables these businesses to assess and manage biosecurity risks establishing an effective internal quarantine process for both imported and exported material. This program builds onto NIASA.

3.0 Survey Methodology

3.1 Overview

To ensure that the project objectives were met, a clear logical approach was designed to:

- Obtain data from a representative sample of businesses to provide a realistic audit of the attitudes and approach to the management of invasive plants/weeds across the diverse businesses that make up the nursery industry.
- Maximise the participant's responses through suitable survey methods.

3.2 Industry Consultation

Key issues from the GMI and 'What does your garden grow?' course evaluations as well as state/territory GMI committee feedback were used as a starting point for the consultant.

Based on these findings, the project objectives and methodology were clarified with NGIA National Environmental & Technical Policy Manager and NGIA Environment Committee. Together with the consultant, they helped to identify the key question areas to be answered through the survey and what type of information was to be collected.

3.2.1 State Associations & Contacts

Nursery & Garden Industry Australia is the peak national industry body representing producers, retailers and allied traders involved in the production and sale of plants across all states and territories of Australia. In partnership with state and territory peak bodies, NGIA is responsible for overseeing the national development of the Australian nursery industry. The nursery industry is a significant sector of the Australian horticultural industry and employs over 45,000 people in over 20,000 small to medium sized businesses with a combined supply chain market value in excess of \$15 billion dollars annually. Nursery & Garden Industry Australia works closely with the state and territory associations, to ensure unity, strength and synergy.

The state and territory associations were encouraged to participate in the consultation process, to ensure issues surrounding invasive plants/weeds were understood. The Development Officer network played an important role, providing feedback on the survey and encouraged industry participation in the survey.

3.2.2 Communications Strategy

Communications were an essential aspect of the project and helped in its success by encouraging survey participation and feedback. With the support and assistance of

NGIA, along with the state and territory associations, a comprehensive communications strategy was implemented.

A wide range of communications material was generated as part of the survey process, including:

- An outline of the project was included on the NGIA website, allowing access to the online survey.
- Articles were included in the October edition of NGIA Clippings, a monthly newsletter that provides nurseries with industry news in a quick, easy-to-read format.
- Regular updates and reminders were distributed from NGIA using e-Comm post (Editions 25, 27, 28 and 29).
- Email updates were distributed from NGIA monthly.
- Articles were included in State Publications including Grow WA (July 2009), Leaflet Magazine (July and September 2009), NGINT Nursery Notes (October 2009), NGISA Nursery Notes (August 2009) and NGINA Nursery & Garden News (July 2009).
- Faxed survey forms were also sent to members and non members who had not responded to previous email invitations or published articles

Refer to Appendix 2 for published materials.

3.3 National Survey

To address the objectives of this project, this survey was undertaken in two parts.

3.3.1 Part A: Evaluation of Production Lists

The initial aim of part A was to obtain plant production/availability lists from production nurseries across Australia, including members and non members and evaluate them for:

- Weeds of National Significance (http://www.weeds.gov.au/weeds/lists/wons.html)
- 2) National Environmental Alert Weeds (http://www.weeds.gov.au/weeds/lists/alert.html)
- 3) Sleeper Weeds (http://www.weeds.gov.au/weeds/lists/sleeper.html)
- 4) Recognised garden escapes (As per each regional GMI booklet)

Members and non members were contacted through a series of communication channels as outlined above. Further investigation through the World Wide Web revealed other nurseries such as mail order businesses trading exclusively online. Internet based businesses and those trading through sites such as eBay were also targeted in this component of the project. If annual production/availability lists weren't available, the current availability list was deemed sufficient.

3.3.2 Part B: Industry Questionnaire

3.3.2.1 Design & Structure

The importance of developing and delivering a questionnaire that collects the required information in a quick and easy manner was recognised and given a high priority.

In addition, an effective communications strategy was essential. The survey must be targeted towards an appropriate audience and written in a language that was easily understood.

Following consultation with industry, the ensuing questionnaire was designed and targeted at a broader national audience of production and retail nurseries. The questions were closed in nature, making them easy to answer (therefore encouraging participation) and allowing quantitative analysis of the results. The survey was easily accessed online and took approximately 10 minutes to complete.

To maximise participation, the length of the questionnaire was kept to a minimum. A 6 page electronic questionnaire was developed, that could also be faxed or posted to businesses. Whilst the initial questionnaire was developed to be completed online, a further range of methods (e.g. fax streaming and email attachments) were used in an effort to maximise participation, so that the participants were able to complete the questionnaire in a manner that suited them.

The questionnaire consisted of 5 main sections. These included:

- Background information
- Invasive Plants Awareness
- Invasive Plants Resources
- Invasive Plants Extension
- Invasive Plants Management
- Further Comments and Suggestions

The questionnaire allowed for anonymity if the respondent preferred. Many nursery personnel prefer to guard their production, sales and business performance information closely and are often reluctant to share that information if they perceive that their competition were to have access to it.

Refer to Appendix 3 for a copy of the questionnaire.

3.3.2.2 Distribution

Having a representative survey sample group helped ensure that a realistic view of invasive plant/weed issues across industry was obtained. Given the distribution of the nursery industry across Australia and the likely variations in size and weed management practice encountered at each business, a range of methods were used so that individuals could respond in the manner that suited them.

Both parts of the survey targeted a national audience. Prior to distribution of part A, it was established that more than 300 businesses would be considered a representative sample of industry. In total, 328 production/ availability lists were received, the majority of these returned by email or downloaded online. The target was exceeded by 9%.

Initially from the emailed and faxed requests to participate in part A, the response rate was poor. Direct phone calls to businesses increased the rate of participation, however the most effective method used was to download online availability lists from a cross section of industry, including production nurseries, mail order, plant brokers, online sellers and specialist plant nurseries. Initially the survey response was slow, however further participation needed to be strengthened and finally exceeded initial expectations.

In part B of the survey, a total of 1721 businesses were forwarded a questionnaire via email, including 920 production nurseries and 801 retail businesses. In addition, a total of 2318 businesses were forwarded a questionnaire by fax, including 1170 production nurseries and 1148 retail businesses. A total of 244 (or approximately 12%) businesses returned a completed survey. The majority of responses were received by production nurseries (n = 138) followed by retail nurseries (n = 83). A total of 208 or 85% of the sample were completed online. Some 28 surveys or 11% were returned by fax and the remaining surveys were returned by mail. During the initial stages, efforts concentrated on online/internet based methods, however the response rates were not as high as expected, especially from NIASA and AGCAS members. Initially reminder notices were sent to all members and non members and following this, the reminder notices were concentrated on the NIASA and AGCAS members.

3.3.2.3 Survey Process

Some of the key points identified during the survey process are outlined below:

- Survey delivery had a significant influence on participation. Initially participants desired to know 'what's in it for me'. Their need to specify how the outcomes from this project related to their businesses were paramount to its success.
- The survey needed to be developed in an easy to follow format to engage with businesses and encourage greater participation.
- A multifaceted communication strategy was important. More and more businesses are moving towards electronic means of communication and it was an important consideration in this survey. Several respondents preferred to return the survey by mail and fax so it was imperative that communication was targeted appropriately.
- Utilisation of industry representatives in drafting the survey was paramount to its success. This helped tease out gaps in the survey before circulation in the aim of identifying any information gaps that needed to be addressed.

4.0 Data Analysis & Results

4.1 Part A: Evaluation of Production Lists

4.1.1 Responses

Production/availability lists were received by 328 production nurseries (Table 1). Of these, 57% were from member nurseries. The majority of respondents were located along the east coast (86%) with the highest number of respondents from Queensland (40%) followed by NSW (29%) and Victoria (17%).

Table 1 Production lists by Membership

State/Territory	Member	Non Members	Total Responses
QLD	61	71	132
NSW & ACT	56	38	94
VIC	37	18	55
TAS	2	5	7
SA	10	2	12
NT	3	0	3
WA	18	7	25
Total	187	141	328

4.1.2 Results

No Weeds of National Significance (WoNS) or Sleeper Weeds were found on any production/availability list (Table 2). Three nurseries (<1% of surveyed nurseries) were found to be growing *Tipuana tipu* (Rosewood), a tree listed on the alert list. No nurseries surveyed in NSW, ACT, VIC, SA and TAS were found to be growing plants on the Alert list.

Table 2 Number of nurseries growing Grow Me Instead Plants, Weeds of National Significance (WoNS), Sleeper Weeds and Alert List Weeds

State/Territory	GMI Plants	WoNS	Sleeper Weeds	Alert List
QLD	#	-	-	1
NSW & ACT	15	-	-	-
VIC	4	-	-	-
TAS	1	-	-	-
SA	1	-	-	-
NT	1	-	-	-
WA	3	-	-	2
Total	25	-	-	3

At the time of conducting this survey, GMI Queensland had not been officially launched.

Only 8% of surveyed production/availability lists (excluding QLD) were found to be growing GMI plants. These species are listed in Table 3.

Table 3 GMI Plants according to state/territory

State/Territory	GMI Plants		
QLD	#		
	Agapanthus spp. × 10		
	Acacia baileyana × 5		
NSW/ACT	Acacia podalyriifolia × 5		
	<i>llex aquifolium</i> \times 1		
	Acer negundo × 4		
	Acer platanoides $ imes$ 1		
	Vinca minor × 1		
	Billardiera heterophylla (Sollya) × 1		
VIC	Pittosporum eugenoides ×1		
VIC	Agapanthus $spp. \times 2$		
	Acer negundo × 1		
	Acer platanoides ×1		
TAS	Buddleja davidii × 1		
IAG	Zantedeschia aethiopica × 1		
SA	Pennisetum setaceum X 1		
NT	Cassia fistula × 1		
INI	Spathodea campanulata $ imes$ 1		
	Agapanthus spp. x 1		
WA	Genista monospermum × 1		
	Olea europaea × 1		

At the time of conducting this survey, GMI Queensland had not been officially launched.

4.1.3 Key Findings

There are 20 WoNS which are considered Australia's worst invasive plants. These weeds have degraded large expanses of Australia's natural and productive landscape and consequently require action at a national level to reduce their impact. Part A of the survey clearly demonstrates industry is acting responsibly by not propagating and distributing WoNS.

Sleeper weeds are naturalised exotic plants that are currently only present in small areas however have the potential to spread widely and have a major impact on agriculture. As these weeds are predominately agricultural species, it was expected that none of these were found on production/availability lists.

The National Alert List identifies 28 environmental weed species that are in the early stage of establishment and have the potential to become a significant threat to biodiversity if not managed correctly. *Tipuana tipu* (Rosewood) was the single species identified during this survey. This reaffirms that industry is acting responsibly by not growing and distributing plants that may pose a serious threat to Australia's natural environment and primary industries.

Grow Me Instead is a voluntary, self regulatory, industry driven program. The potentially invasive plants listed within the each booklet were compiled and agreed to by a committee comprising representatives from both retail and production nurseries and external stakeholders such as CMA's. Each regional list was designed to target plants that were currently, or were very recently produced and sold through nursery outlets. It is evident that the majority of businesses (92%) are acting responsibly by not growing or distributing these potentially invasive plants.

Of the 41 GMI plants identified on the surveyed production/availability lists, 29% were *Agapanthus* spp. No further information was provided on the specific spp. and it is difficult to ascertain if these were indeed, the Agapanthus listed in GMI (Agapanthus praecox Willd. subsp. orientalis (F.M.Leight.) F.M.Leight.). This Agapanthus is well known to become problematic if not managed appropriately (i.e. by removing spent flower heads before seed set). Through the GMI educational program, production nurseries are encouraged to supply named *Agapanthus* spp. with low seed set and the new hybrid forms of proven sterile hybrids, including Snowball, Queen Mum, Peter Pan and Black Panther. Grow Me Instead proactively encourages readers to visit their local garden centres to seek advice about many superior and non-invasive Agapanthus varieties. The campaign also encourages gardeners to remove seed heads prior to maturity and to prevent dumping in bushland and public spaces.

The production/availability lists from Queensland were not included in this survey as the GMI program in QLD was not available at the time of writing this report. Queensland's Grow Me Instead Program was officially launched on November 5 at Roma Street Parkland, Brisbane. In contrast to the other States/Territories, three bioregion booklets; Sub Tropics, Dry Tropics and Wet Tropics were developed as part of the Queensland project.

4.2 Part B: Industry Questionnaire

4.2.1 Distribution

Responses were received by 244 nursery businesses, an overall response rate of approximately 12%. The majority of responses were received by production nurseries (n = 138), with 83 questionnaires (37%) received from the retail sector (Figure 1).

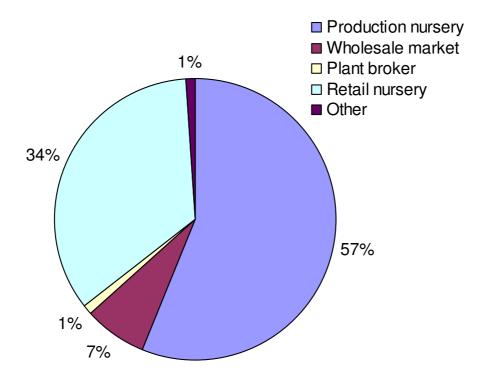


Figure 1 Questionnaire respondents by sector

4.2.2 Participation

Figure 2 outlines the number of respondents, according to state/territory as well as industry sector i.e. production, retail or plant broker. The majority of respondents were located along the east coast (72%) with highest number of respondents from NSW (27%) followed by QLD (25%). Tasmania returned the least number of respondents (3%). Members made up 80% of respondents (Figure 3).

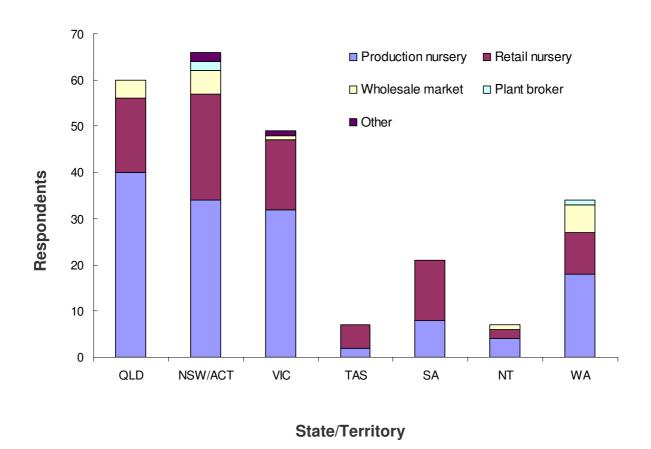


Figure 2 Survey respondents by state/territory & sector

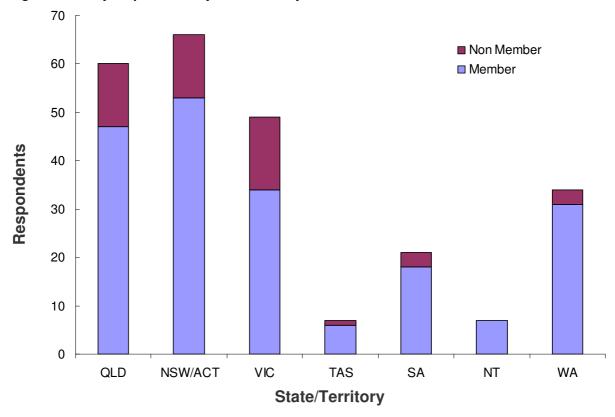


Figure 3 Survey respondents by membership

4.2.3 Business Scale

The majority of respondents were small to medium in size. For the production sector, 53% of respondents reported less than 5 FTE staff members, and for the retail sector, 46% reported less than 5 FTE staff. A further 15% of production nurseries fell within the 6-15 FTE category, and similarly 14% of retail nurseries fell within this category.

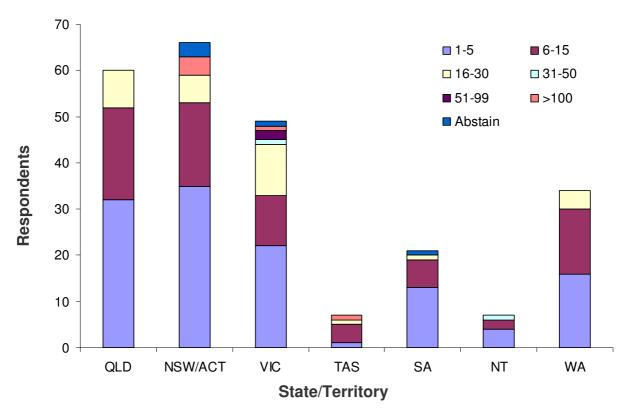


Figure 4 Business scale for survey respondents

4.2.4 Plant Movement

Plant movement within Australia, state to state and region to region requires the plant producer to be vigilant in regard to the final destination of their produce. As seen in Figure 5 and 6, large quantities of plant material is transported interstate and/or intrastate and to a lesser degree imported/exported (<4%). However, these figures indicate that for all states and/or territories, the majority of plant material is sourced and sold within the state. Furthermore, these figures indicate a large portion of trade along the east coast of Australia.

With a large quantity of plant material movement around the country, it is imperative that businesses adhere to interstate quarantine measures to minimise the risk of invasive plants being introduced into a 'pristine' area, which may result in lost markets, expensive controls being implemented and/or infringements.

Regulations apply in each state and territory for the movement of plant material to ensure that Australia's valuable local and overseas markets remain protected to minimise the spread of pests, diseases and weeds. These restrictions operate under

state and territory legislation. Examples included the South Australian Plant Health Act 09 and Interstate Certification Assurance (ICA) 29 Treatment of Nursery Stock to Western Australia agreement. An ICA agreement is a system of plant health certification based on quality management principles aimed to increase business flexibility and operational control in certifying plant material for intra or interstate movement.

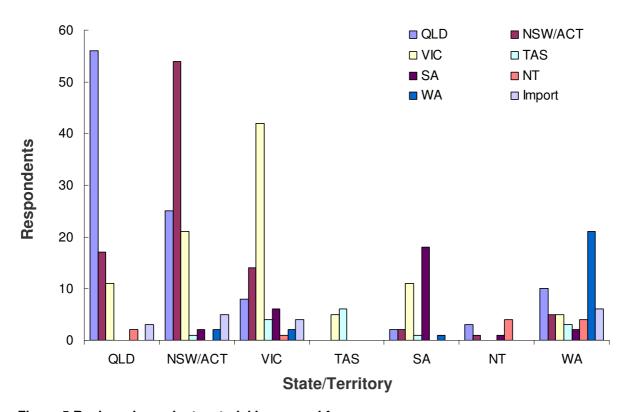


Figure 5 Region where plant material is sourced from

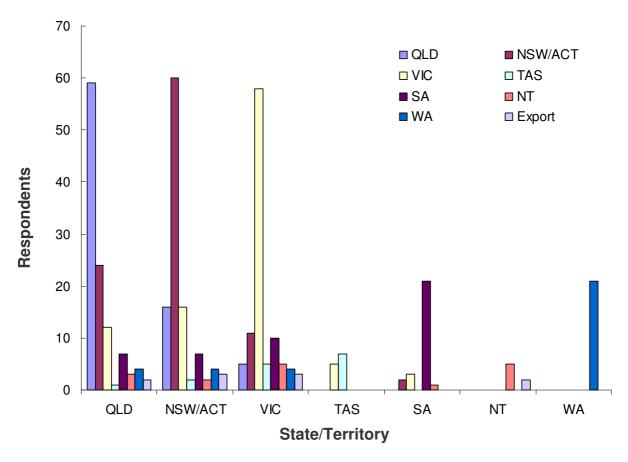


Figure 6 Region where plant material is sold

4.2.5 Awareness

Figure 7 demonstrates the awareness of respondents to industry policies and programs. Greatest awareness among respondents was for GMI (81%) followed by NGI Invasive Plants Policy Position (68%). Conversely, 62% of respondents were not aware of the National Nursery Industry Biosecurity Plan (62%) nor the World Environment Day 'Our Environment Your Backyard' campaigns (60%).

Whilst this graph demonstrates that industry programs are bringing about educational changes in attitude and access to information, opportunities remain for industry to communicate the objectives of these programs. The linkages between these programs should also be communicated, particularly in relation to the Nursery Industry Biosecurity Plan and Labelling guidelines.

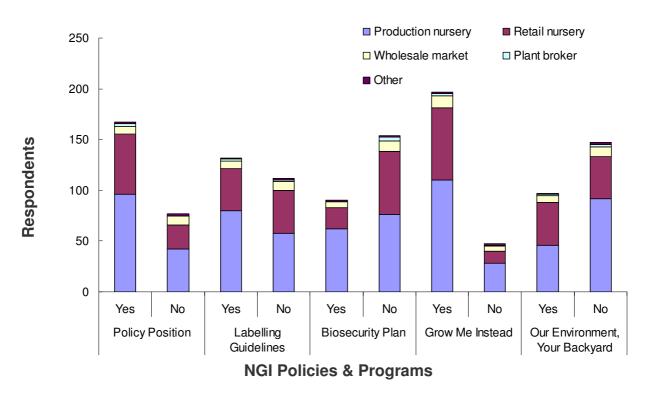


Figure 7 Awareness of respondents to industry policies and programs

Figure 8 illustrates industry's awareness of national and state weed lists. Although 75% of respondents were aware of local shire/council weeds lists, 83% were unaware of the National Sleeper Weed list. Some 68% of respondents were aware of WoNS, 61% were aware of State and/or Territory weed lists and 54% were aware of the National Alert list.

Sleeper Weeds are naturalised agricultural exotic plants that are currently only present in small areas however have the potential to spread widely and have a major impact on agriculture. The agricultural context of this list may have resulted in only 17% of respondents aware of this list.

It is evident that the majority of businesses are aware of their local, state or national weed lists however, opportunity remains to reaffirm what weed lists are in circulation, and how they are relevant to industry. This demonstrates a further, urgent need to make readily available, sound and reliable information regarding weed lists.

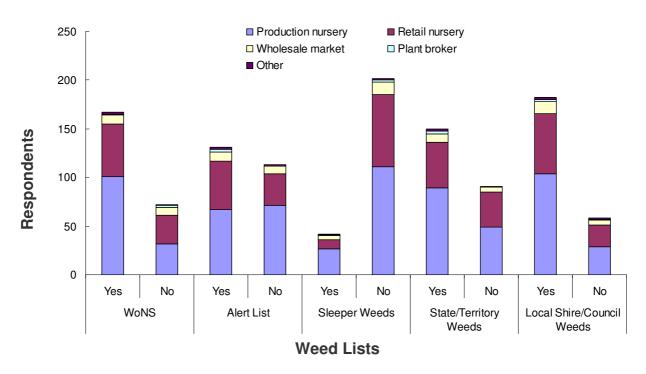


Figure 8 Awareness of respondents to weed lists

Figure 9 depicts the communication channels for information on declared weeds and invasive plants. The results demonstrate a similar trend among production and retail businesses with websites and Government Weed Agencies illustrated as the primary source of information on declared weed and invasive plants for 56% and 55% of respondents, respectively. Nursery & garden industry associations as well as horticultural magazines were also a key source of information for 52% of respondents. Nursery Papers were a key source of information for 47% of respondents. Other sources of information included textbooks, farm notes, Landcare groups, and nursery networks such as the Tree & Shrub Growers Group.

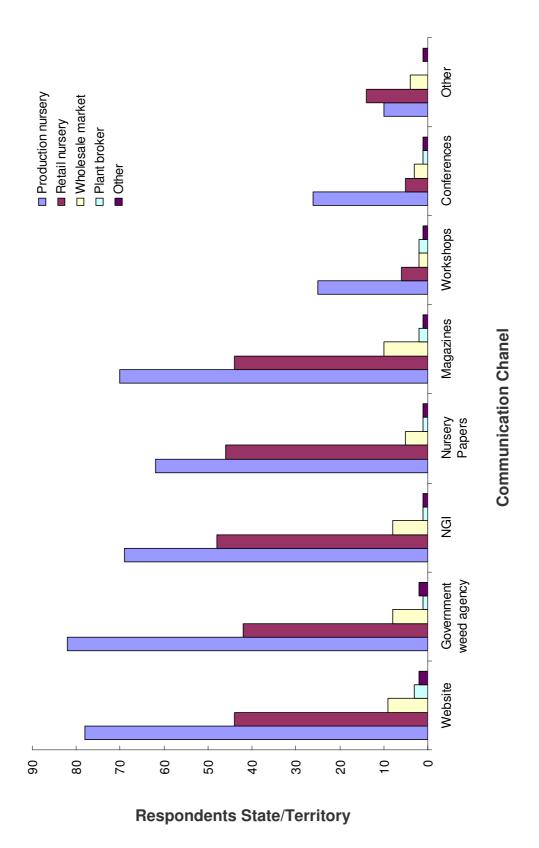


Figure 9 Channels by which respondent's source information on declared weeds and invasive plants

The 'What does your garden grow' educational program was developed by CRC for Weed Management in partnership with the NSW Department of Primary Industries. This project was developed in cooperation with NGINA's Grow Me Instead Project officer. The CRC for Weed Management has since finished (30 June 2008).

Figure 10 indicates that the majority of respondents did not partake in the educational program. The program was offered as a series of workshops across Australia to members of NGI, TAFE colleges, DPI and to other organizations that made up the environmental weeds networks. Whilst these workshops were widely advertised and promoted within the nursery and garden industry only a small number of participants attended. It can only be assumed that the short and long term eventual benefits of the program were not initially recognized by the majority.

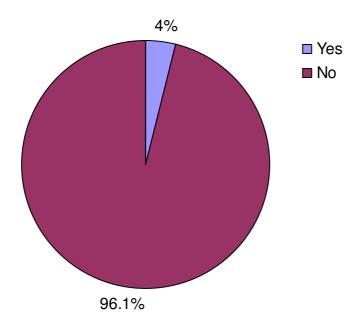


Figure 10 Percentage of respondents that have attended 'What does your garden grow' seminar

4.2.6 Resources

The results in Figure 11 gauge the availability of resources among respondents. The results indicate that apart from GMI, the majority of respondents were not in the possession of Industry policies and programs. Indeed, over 78% of respondents did not have the National Nursery Industry Biosecurity Plan, NGI Invasive Plants Position, NGI Plant Labelling Guidelines or the Our Environment, Your Backyard Education kit. Conversely, 58% of respondents had a copy of the GMI regional booklets. This data suggests there remains opportunity for communication of NGI policies and programs to whole of industry.

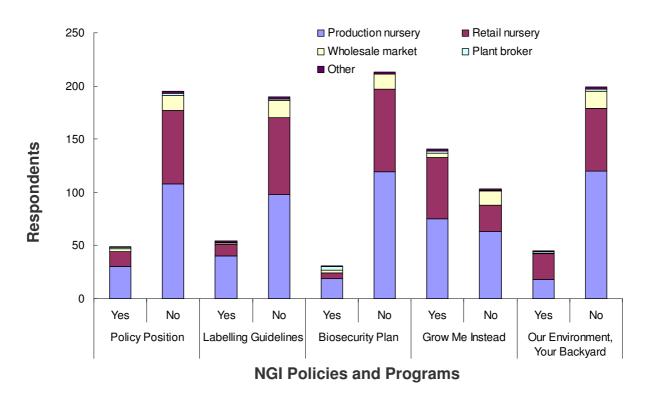


Figure 11 Number of respondents in possession of industry policies and programs

Figure 12 illustrates the number of respondents in possession of local, state and/or national weed lists and follows a similar trend to that in Figure 11. Over 55% of respondents did not have a copy of WoNS, National Alert, National Sleeper, State/Territory or Local weed lists. These results indicate some distance between informed businesses and non informed businesses. It is possible that these businesses are not able to locate this information in a timely fashion.

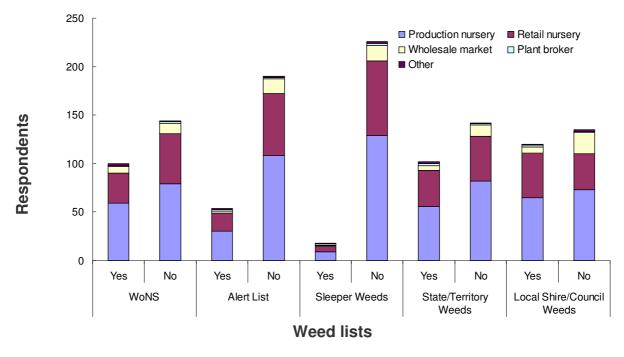


Figure 12 Number of respondents in possession of weed lists

4.2.7 Extension

The results in Figure 13 depict how respondents distribute information on declared weeds and invasive plants information within their business. Across all sectors, 59% of respondents distributed information within their business. However, some 51% of production nurseries did not formally distribute information within their business. This was almost 2-fold higher than retail nurseries with only 27% of retail nurseries indicating that they did not formally distribute information on declared weeds and invasive plants information within their business. The preferred avenue of communication for both production (31%) and retail (45%) nurseries was through staff meetings. Furthermore, GMI was seen by 46% of retailers as a key mechanism of communication whereas emails were least favourable (5%). Similarly, only 8% of production nurseries distribute information on declared weeds and invasive plants information within their business via email.

These results clearly indicate that greater communication of declared weeds and invasive plants is required within production nurseries. Other mechanisms of communication included internal memos, one on one discussion with staff and staff newsletters.

The results highlight a serious lack of staff training within both retail and plant production nurseries. Moreover, the lack of recognition of the impact that this training on full and part time staff that carry the educational message regarding invasiveness of listed plants to the wider community is unrealised. The 'What does your garden grow? - Train the trainer' program was designed as a short, intensive implement to educate the management and staff of both retail and production nurseries. Once trained, it was envisaged that those personnel were then able to go out into the community at large to offer short courses to garden clubs, through community colleges and to the wider community. As denoted in Figure 10, the value of this workshop appears unrealised.

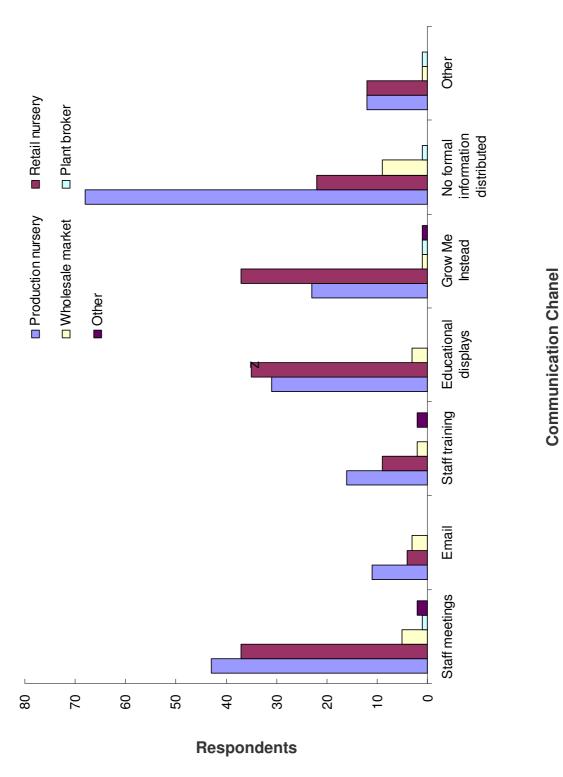


Figure 13 Communication channel used to distribute information on declared weeds and invasive plants information within surveyed businesses

Figure 14 demonstrates the number of respondents that actively promote GMI alternatives (not necessarily those listed within the GMI regional booklets). Across all sectors, 59% of respondents promoted GMI alternatives. The retail sector was the most proactive sector with 78% of respondents indicating that they promoted GMI alternatives. As depicted in Figure 13, production nurseries were less engaging with GMI than retail nurseries.

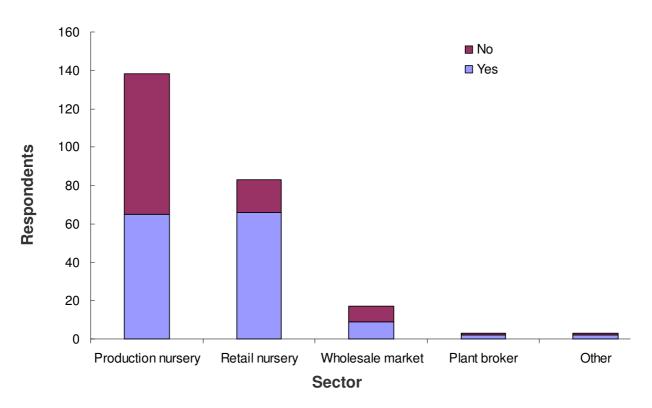


Figure 14 Number of respondents that promote GMI alternatives or other alternative plants

Figure 15 illustrates the use of educational collateral such as posters to provide relevant information on weeds and invasive plants. Across all sectors, 35% of respondents used educational materials to highlight the importance of weeds and invasive plants to consumers. Similar to Figure 12, the retail sector was the most proactive sector with 51% of respondents indicating that they used educational collateral. As retailers are a key shop front to the general public on key environmental issues, there remains opportunity to utilise this resource to a greater extent.

Even though, as indicated in Figure 13, there is a lack of formal training, the results presented in Figure 15 recognises that the educational displays, posters and GMI regional booklets within a business shows that the awareness of weeds issues is getting through to the consumer. Whilst it may not be perceived that nursery owners/managers should feel obliged to formally train their staff in recognising invasive plants, the use of posters and booklets by 35% of businesses across all sectors is, in itself a positive recognition that this message can be further enhanced by future communication programs either initiated by NGIA or the various government programs and resources.

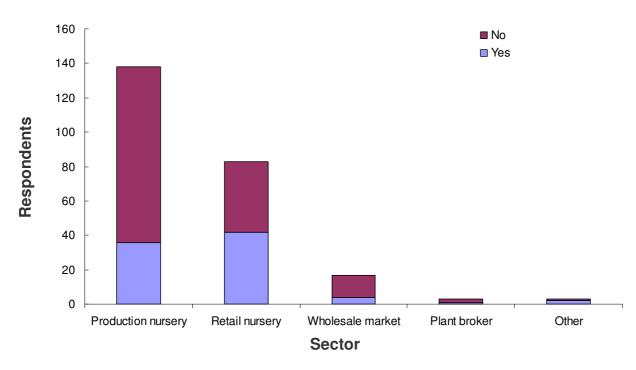


Figure 15 Number of respondents that display weed posters or provide educational material for customers

4.2.8 Management

The results shown in Figure 16 demonstrate that 72% of all respondents monitor their property at least annually. Furthermore, across all sectors 17% of respondents monitor their nursery at least weekly. For retail nurseries, 30% monitored their property every month whereas 20% of production nurseries monitored their nurseries every week. These results should be interpreted with caution as many nurseries that abstained or indicated 'never' did not have 'common gardens' or on-site vegetation to monitor the potential spread of naturalising species.

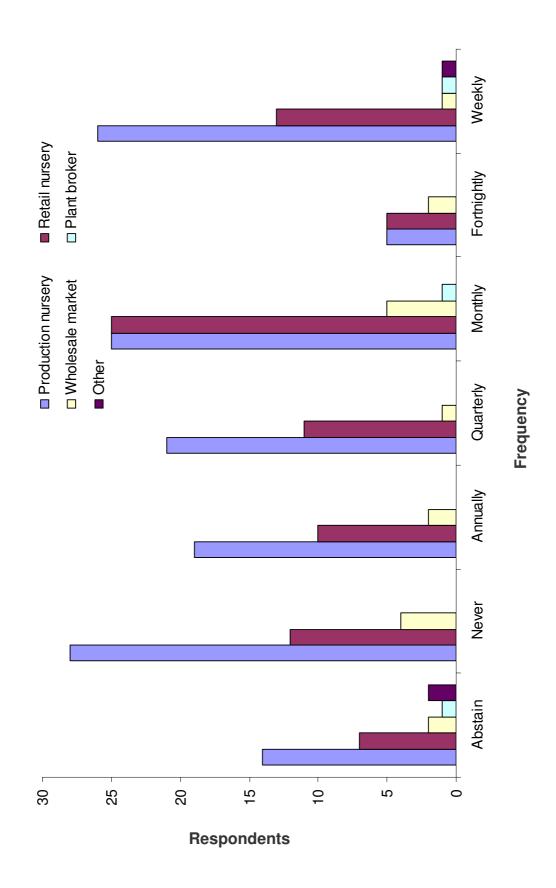


Figure 16 Number of respondents that monitor their property for naturalised plants

The results in Figure 17 indicate that across all sectors, 46% of respondents are working to protect on-site native or indigenous vegetation. For production nurseries, 54% indicated that they protected on-site native or indigenous vegetation. Several production nurseries participating in this survey were located on rural or rural/residential lands, and clearly highlighted their desire to monitor their boundaries. As reported in Figure 16, these results, particularly those pertaining to retail nurseries, should be interpreted with caution as several respondents indicated that they did not have on-site vegetation. Many of the retail respondents were located in townships and built up areas, with limited space outside the sales area.

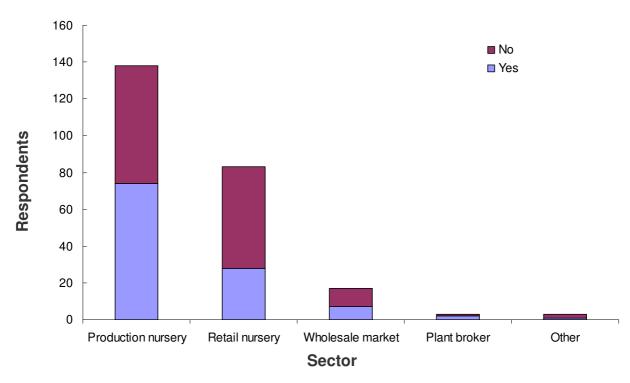


Figure 17 Number of respondents that are working to protect on-site native or indigenous vegetation

The results in Figure 18 illustrates that 86% of respondents across all sectors consider pest/production weeds a major priority. It is self evident that weeds affect crop growth rates and saleability of the finished product. Moreover, the control of weeds may be costly and labour intensive.

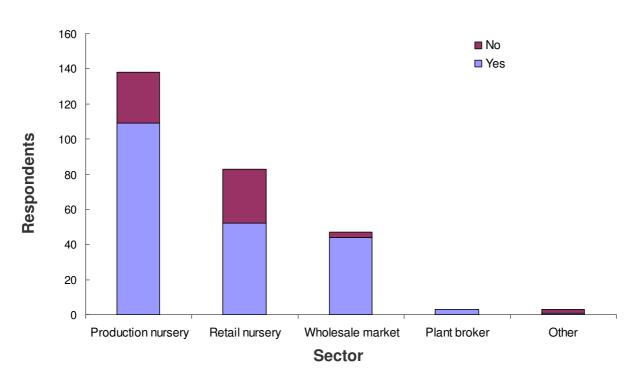


Figure 18 Number of respondents that consider pest/production weeds a major priority

Figure 19 illustrates the variety of strategies identified by respondents to control pest/production weeds within surveyed businesses. These results indicate that a variety of strategies are often employed. Across all sectors, 87% of respondents used herbicide application and hand weeding to control pest/production weeds. Conversely, 22% of respondents across all sectors indicated revegetation with endemic species as a control strategy. As noted previously, many of the respondents did not have 'common gardens' or on-site vegetation. Other responses received by respondents included other cultural techniques such as mowing to remove seed heads and on-farm quarantine procedures.

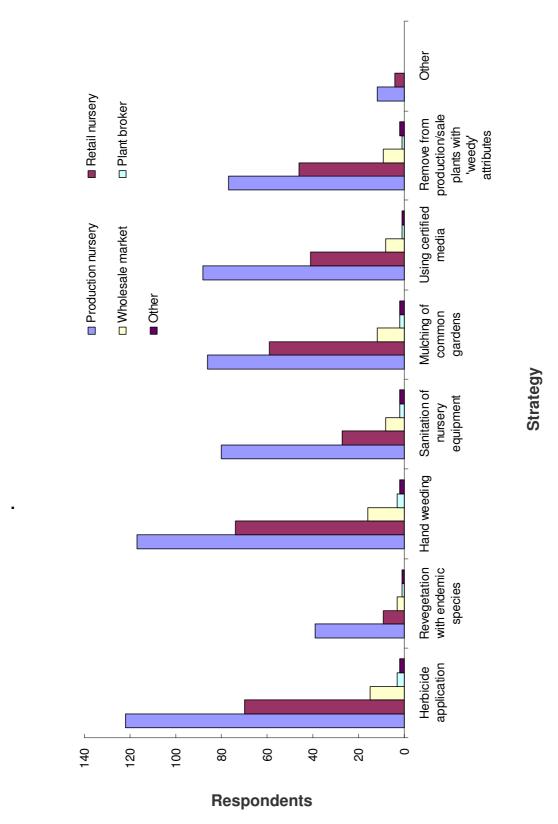


Figure 19 Weed management strategies used to control pest/production weeds within surveyed businesses

Figure 20 illustrates the number of respondents with a documented weed management plan (WMP). A WMP is a documented position for businesses to guide them in the management of weeds on-site. Across all sectors, 23% of respondents indicated that they had a documented WMP. This presents opportunity for businesses to consider implementing a documented strategy to manage weeds onsite.

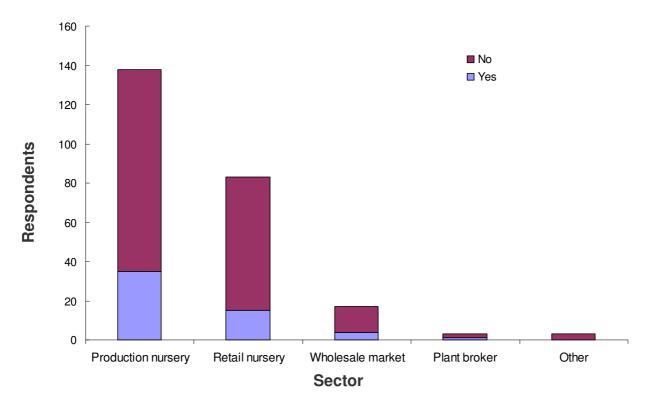


Figure 20 Respondents with a documented weed management plan

The results in Figure 21 provide respondents attitudes to weed management strategies on-site. Across all respondents, 90% indicated their attitude to weed management was adequate to excellent. In general, this demonstrates an integrated level of awareness among respondents.

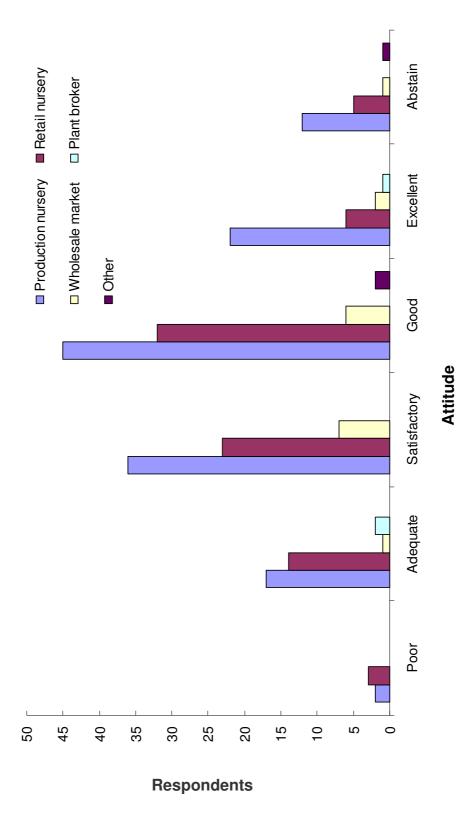


Figure 21 Respondents attitudes to their weed management performance.

4.2.9 Key Findings

Part B of this survey provides comprehensive and reliable information on industry attitudes to industry and government invasive plant/weed programs. This includes:

Business trends

- Results indicate that a high proportion of plant material is moved intra and interstate. This included sourcing plant material (such as plugs, propagation material etc) and distributing plant material (such as finished products, tube stock etc.).
- Less than 4% of plant material is imported/exported.

Invasive Plants Awareness

- There was a high degree of industry awareness of GMI, NGI Invasive Plants Policy Position and NGIA Labelling guidelines. Conversely, less awareness was found with regard to the Nursery Industry Biosecurity Plan and the Our Environment, Your Backyard World Environment Day Campaign.
- A high degree of awareness to local, state and national government weed lists excluding sleeper weeds. This is likely attributed to the agricultural context of this list.
- Government weed agencies and industry resources were highly regarded for providing reputable information on declared weeds and invasive plants.
- The CRC for Weed Management's 'What does your garden grow?' educational program was poorly attended by industry. Less than 4% of industry attended this program.

Invasive Plants Resources

- Industry was conversant with GMI resources, however were not resourced with other industry policies and programs (i.e. NGI Invasive Weeds Policy Position or NGI Plant Labelling Guidelines).
- Industry was not adequately resourced with local, state and national government weed lists.

Invasive Plants Extension

- The majority of businesses (59%) distribute information on declared weeds and invasive plants within their business. This was greatest for retail nurseries (73%).
- Over 50% of production nurseries did not formally distribute information on declared weeds and invasive plants within their business.

- Electronic distribution of information on declared weeds and invasive plants was the least favourable mechanism of information transfer with business (7%). Staff training also rated poorly (12%).
- The majority of industry actively promoted GMI (59%). This was greatest in retail nurseries.
- Educational collateral such as posters were utilised by the minority of businesses (35%) to provide relevant information on weeds and invasive plants to staff and customers.

Invasive Plants Management

- The majority of industry monitored their boundary for naturalised plants at least annually, with one in five monitoring their nursery every week. As many nurseries indicated that they did not have on-site vegetation, these results should be treated with caution.
- Protecting onsite native or indigenous vegetation ranked highly among industry (46%). As many nurseries did not have on-site vegetation, these results should be treated with caution.
- The majority of industry (86%) considered pest/production weeds a major priority.
- Several strategies were commonly used to control pest/production weeds, with herbicide application and hand weeding the top two control strategies (87%).
- Few businesses had a documented weed management plan (23%).
- The majority of industry (90%) indicated that their on-farm weed management was adequate to excellent.

5.0 Recommendations

The following recommendations have been developed on the basis of the national invasive plants survey.

5.1 Communication

The amount of intra and interstate border trade in live plants across Australia annually is valued in the hundreds of millions of dollars and is a vital component of the Australian economy. Consequently, it is imperative that industry is informed of the risks associated with this process. State biosecurity agencies have identified the increased risks associated with interstate plant trade and are acting to minimise these risks through plant movement regulations. The introduction of exotic weeds may have serious implications on the environment, primary industry and business viability. Individual businesses affected by a major incursion of an exotic weed may face significant hardship and financial difficulties (i.e. infringements and cost in control).

- A targeted communication strategy is required to reinforce the responsibility of nursery businesses in minimising the spread of potentially invasive plants. This may include a web page or resource booklet that outlines on-farm biosecurity measures, encompassing invasive plants, and lists available resources and tools available from both industry and government. Industry resources that should focus heavily include the Nursery Industry Biosecurity Plan and NGI Plant Labelling Guidelines.
- Encourage greater uptake of NGI voluntary Plant Labelling Guidelines to prevent the possibility of further enforced legislation. Uptake of voluntary educational programs by some nurseries will encourage other nurseries to participate. Greater recognition of these guidelines is needed at all levels including retailers and plant label manufacturers in order to achieve this.
- Support future World Environment Day campaigns that focus, in part, on invasive plant issues and more broadly biodiversity conservation. These campaigns are directed to the retail sector who are the public face of the industry. Historically, they have demonstrated sound involvement in earlier campaigns and would be strong advocates in harnessing community awareness of industry programs such as GMI to position the industry as the community's leader on invasive plant issues.
- Encourage greater uptake of on-farm biosecurity measures among production nurseries and growing media businesses through NIASA and BioSecure HACCP. This would up-skill industry and build industry capacity in all aspects of biosecurity. These programs are less regulatory in approach, however are robust, scientifically sound and audited on an annual basis to ensure their rigor.

- Continue engagement with government and external stakeholders to ensure these agencies are aware of proactive industry resources dealing with potentially invasive plants such as Grow Me Instead. Engagement should also focus on industry accreditation including NIASA and BioSecure HACCP.
- Industry requests that government consider the introduction of a nursery registration system to enhance business, industry and government communication. Many nurseries are not members of NGIA and consequently may not be abreast of industry developments and policies concerning invasive plants. Moreover, in the event of an exotic weed incursion, a nursery registration scheme would enable fast and straight forward contact with all businesses. The quicker industry can respond to an incursion, the more likely they are to successfully eradicate it. This could potentially save government and industry million of dollars in eradication costs.

5.2 Research and Investment

It has been well documented that plant behaviour can vary between regions; however at present there is no industry agreed process to classify a plant as invasive. There is a clear and urgent need for the development of a nationally agreed and adopted national weed risk assessment (WRA) system for use by the Nursery & Garden Industry Australia. There is also a clear and urgent need for a vehicle to house weed and invasive plant information that can be readily accessible to all stakeholders in a timely and accurate fashion. This will ensure industry compliance with interstate plant movement requirements to ensure compliance with the plethora of interstate biosecurity requirements confronting Australian growers.

- Develop a WRA system in partnership with government agencies to assess weed risk of plant species and other taxa (i.e. cultivars, varieties etc.) currently being sold or proposed for sale in Australia (pre-release). This process must be scientifically sound using a process that is peer reviewed to satisfy requirements of the National Post-Border Weed Risk Management Protocol Australian Standard (HB 294:2006). The WRA should be calibrated by conducting weed risk assessments on ornamental plant species in Australia that have exhibited their potential weed risk (or lack thereof). Plants should be examined to the variety level to avoid confusion, recognising that there can be great differences in invasiveness between species and cultivars.
- There is a clear and urgent need for the development of a mechanism for industry to access weed information at a local, state and national level in a timely and user friendly fashion. This could be in the form of a national web portal. The current situation, with multiple lists on multiple websites is often difficult to accurately locate, confusing and economically unsound. Moreover there is often a lack of consistency between State and Territory websites in terms of terminology and data placement, and these sites are often difficult to navigate and search.
- Encourage and support the uptake of industry's EMS, EcoHort which specifies how to manage native vegetation, wildlife and ecosystems including invasive

plants on-site. Where this program is not viable (i.e. retail nurseries and wholesale markets), consider implementing a weed management plan to provide a holistic approach to weed management. The weed management plan may:

- o Identify what weed species are of concern in the local area and on-site
- o Demonstrate awareness of relevant industry programs and policies
- o Demonstrate awareness of state and federal declared weed lists
- Identify weed control, monitoring and eradication measures and monitoring activities to manage weeds on-site and along the boundary of the business
- Identify weed control measures and/or monitoring activities to be used to minimise the potential for weed species which have not been previously recorded
- Incorporate an action plan to identify what steps a nursery can take to improve its weed management performance reporting procedures and schedule.
- Consider developing an EMS program for retail nurseries inline with EcoHort which specifies how to manage native vegetation, wildlife and ecosystems including invasive plants on-site. This program would supersede a weed management plan and would provide retail nurseries with a holistic approach to managing a wide range of environmental and natural resource issues (i.e. water, energy waste generation etc.).

5.3 Capacity Building

It is vital for nursery staff and business owners to understand key environmental issues including weed and invasive plants to ensure industry is adequately equipped with the knowledge and skills to competently tackle this issue head on.

- Continue to resource the program 'What does your garden grow?' This is the
 only training program designed for industry to equip them with the skills to
 manage weed issues. This program is beneficial for retail nurseries who are a
 key shop front to the general public on environmental issues, including weeds.
 Through educational programs such as 'What does your garden grow?'
 industry will increase public awareness and promote behavioural change in
 managing plants in the broader community.
- Support widespread distribution of GMI regional booklets to ensure the
 community is versed with recognising and remove plants listed as invasive
 and replace them with non-invasive alternatives. A national website following
 the recent launch of the Queensland GMI website should also be developed to
 maximise the reach of this program. Contact should be made with curators of
 institutions such as the many botanic gardens as well as council officers to
 further promote responsible gardening through the program. Ongoing
 engagement with the horticultural media and mainstream media is also
 required to positively position industry achievements whilst capturing
 widespread community interest.

5.4 Co-operation

In order to successfully deliver the above recommendations, it is important that industry develops strong relationships and improves communication across core industry sectors as well as between national and state associations. Unity in approach is vital for the long term sustainability of this industry.

- Ensure consistent co-operation and dialogue is maintained between Nursery Industry Development Officers, Business Skills Development Officers with the National Environmental & Technical Policy Manager. This will ensure comprehensive coverage of production and retail nurseries across the vast distances within each state and territory. It will also ensure that existing research is disseminated widely and effectively to all stakeholders to encourage greater adoption of outcomes.
- Ensure consistent co-operation between the various environmental weeds organisations and industry. Continued goodwill and cooperation between all stakeholders in the fight against the weeds menace will eliminate the need for costly legislation and controls and will also erase past misunderstandings due to ignorance or belligerent attitudes.

6.0 References

- Weeds of National Significance (http://www.weeds.gov.au/weeds/lists/wons.html)
- Alert weed list (http://www.weeds.gov.au/weeds/lists/alert.html)
- Sleeper Weeds list (http://www.weeds.gov.au/weeds/lists/sleeper.html)
- National Environmental Weeds website (<u>www.weeds.org.au</u>)
- Regional GMI publications (http://www.ngia.com.au/Category?Action=View&Category_id=151)
- Plant Locator (http://www.plantlocator.com.au)

Appendices

Appendix 1 Abbreviations

Appendix 2 Communication Material

Appendix 3 Questionnaire

Appendix 1 Abbreviations

AGCAS - Australian Garden Centre Accreditation Scheme

DPI – Department of Primary Industry (Now Industry & Investment NSW)

CMA – Catchment Management Authority

CRC – Cooperative Research Centre

EMS – Environmental Management System

EPPRD – Emergency Plant Pest Response Deed

GMI - Grow Me Instead

ICA - Interstate Certification Assurance

LGA – Local Government Association

NGI – Nursery & Garden Industry

NGIA – Nursery and Garden Industry Australia

NGINA - Nursery and Garden Industry NSW and ACT

NIASA – Nursery Industry Accreditation Scheme

NPFMS – Nursery Production Farm Management System

NWAC – National Weeds Advisory Committee

WRA - Weed Risk Assessment

Appendix 2 Communication Material

IN THIS ISSUE

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- Nursery & Garden Industry releases Environmental Sustainability Position

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- Online national invasive plants questionnaire where does your business stand?

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- Do you know a high achieving Horticulture Student?

This month's Nursery Paper... Electronic Pest, Disease, Beneficial & Weed Identification Tool

The Nursery & Garden Industry Queensland (NGIQ) has completed an innovative project transferring a popular pest and disease identification handbook to an electronic format. This resource has been developed for use on portable platforms such as Personal Digital Assistants (PDAs) and some Smartphones. The project was jointly funded by NGIQ and Horticulture Australia Limited (HAL) and released to industry in August 2009. In this Nursery Paper John McDonald, NGIQ Industry Development Manager, provides an overview on this industry innovation.

Grasp your opportunities at the 2010 NGI National Conference

The April 2010 NGI Conference – Grasp Your Opportunities - will address key industry issues such as biosecurity, marketing, staff development and Industry trends. Whether you are a grower, or a retailer or an allied you will come away from this conference with at least one idea to help your business.

Held in the tropical location of Darwin, the 2010 Conference is an event not to be missed. Why not take a few days before or after the Conference and have a Top End holiday?

As Darwin is a prime fishing destination, a fishing competition will be held prior to the official Conference commencement on Monday, April 19. Trophies for the winners will be sponsored by Dracaena Farm Nursery. On the Monday evening there will be a welcome function for all Conference delegates to mix and mingle and welcome one another to the Territory.

Tours sponsored by Yates will be held on Tuesday, April 20. These tours are a great opportunity to see how other Industry businesses operate and get inspirational ideas to grow your business. For 2010, three tours are on offer; a retail tour, a production tour, and a tour to Katherine Gorge for those who wish to play tourist for the day.

On the morning of Wednesday, April 21, there will be a Certified Nursery Professional (CNP) breakfast. This is an exclusive opportunity for Industry members with professional recognition to network and learn from one another. Plenary sessions will be held during the day, and that evening OAMPS Insurance Brokers are sponsoring the casual theme night. Come along in your best Territory rig and compete for the prize of best dressed. The night is being coordinated by the NextGeners so it is sure to be a lot of fun.

On the last day of the event, Thursday April 22, Conference delegates will welcome the day with breakfast and a presentation sponsored by Scotts. Concurrent sessions, where the program is split for growers and retailers, will then take place.

To finish the Conference on a high note, the Best of the Best will be celebrated on Thursday evening at the 2010 NGI Awards Gala Dinner. The dinner will be held at one of Darwin's premier function venues, on the grounds of the Northern Territory Museum and Art Gallery. The backdrop of Fannie Bay and the picturesque Museum gardens will provide a unique and memorable venue for this outdoor event.

Make sure you are part of the 2010 NGI National Conference. As Darwin is a sought-after holiday location, cheap deals on flights will go quickly, so book now to get a good price! Keep your eye on the NGIA website www.ngia.com.au and Clippings and eCommPost for more information on the Conference program and associated activities.



Darmin - April 19 - 22, 2010



Nutricote





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Australian Springtime Flora Festival a spectacular event

The 23rd Australian Springtime Flora Festival ran from September 10 to 13 at Kariong on the NSW Central Coast.

The event was held during one of the sunniest weekends spring 2009 has had to offer, with 50,000 visitors visiting the gardening spectacular over the four days.

The festival is one of the largest and most popular flora events in Australia; featuring plant stalls and displays, food, wine, outdoor furniture, arbor care, garden talks and more. With vibrant colour, constant entertainment and an atmosphere of fun, it was an event for the whole family to enjoy.

Nursery & Garden Industry NSW & ACT (NGINA) was a sponsor of the event and provided a plant advisory service. Workers on the stand handed out 'free' tomato leaflets to visitors. The aim of the leaflet was to drive consumers into their local garden centre by encouraging them to redeem an attached coupon in exchange for a free tomato seedling.

Peter Whitehead CNP, NGINA Events & Marketing Officer, says: "NGINA wishes to thank Oasis Horticulture, Marian Grove Nursery, Engall's Nursery and Debco who provided us with the product to create the impressive display that attracted so many passers-by to the NGINA marquee."



The NGINA stand at Flora Festival, held on the Central Coast last month.

Queensland IDM tests out Pocket Diagnostic™

John McDonald, Nursery & Garden Industry Queensland (NGIQ) Industry Development Manager (IDM), did a two week study tour based in York, England to investigate the technology, application and value of the Pocket Diagnostic™ Test Kits developed by Forsite Diagnostics.

The tour consisted of two weeks comprehensive training with Forsite Diagnostics and the UK Department for Environment Food and Rural Affairs.

Pocket Diagnostic[™] Test Kits are portable in-field plant pathogen diagnostic tools based on the Lateral Flow Device (LFD) technology (commonly used in home pregnancy tests) and are capable of detecting specific plant pathogens including bacterial, viral and fungal organisms.

The concept of plant pathogen diagnostics being delivered through LFD technology has been in operation for more than 10 years in the UK. The full commercialisation of the technology via Pocket Diagnostic™ Test Kits is about three years old and has been accepted into many plant pathology labs across the UK and Europe.

In Australia, diagnostic tools currently used within the horticultural industry are focused on laboratory based processes managed by state government departments.

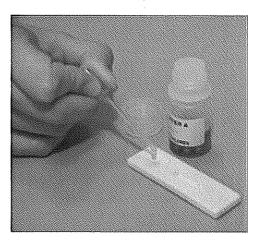
According to John, the study tour provided a greater insight into LFD technology and the current constraints and opportunities for future development of Pocket Diagnostic™ Test Kits.

"The Pocket Diagnostic™ is portable, rapid and cost effective," he says. "A significant advantage

of the Pocket Diagnostic™ Test Kit is the ability to get a reading within a three to ten minute time frame which allows the user to move management options quickly."

John believes there is a great potential for the Test Kits to serve the Australian horticultural industry over a range of levels – both for service providers and on-farm.

"NGIQ aims to investigate the opportunities for developing further test kits for common endemic diseases in Australia, however no funding has yet been committed," John says.



Nursery & Garden Industry releases Environmental Sustainability Position

Nursery & Garden Industry Australia (NGIA) is pleased to announce the release of the industry's Environmental Sustainability Position.

This document firmly cements our industry as a true, green industry and provides us with added credibility in moving forward with government bodies, private sector entities, academia as well as other peak industry bodies.

It captures the nursery and garden industry's many environmental achievements and reaffirms that we are mindful of the environment and committed to the sustainable development of industry.

A PDF copy of this document can be downloaded from http://www.ngia.com.au/Category?Action=View&Category_id=439 It is a living document and consequently there will only be minimal hard copies available.

NGIA's National Environmental & Technical Policy Manager Dr Anthony Kachenko says: NGIA's Environmental Sustainability Position demonstrates NGIA's commitment to environmental sustainability, the appropriate management of the association and its operations, the engagement of businesses in principles and applications of sustainability, and the engagement of, and collaboration with, the broader community."

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Dr Kachenko continues: "I would like to thank all those who contributed to the development of this document."

Life is a garden website re-launched!



NGIA has revamped the consumer website www.lifeisagarden.com.au

Re-launched in late September, the Life is a garden website is a gardening site for everyone; garden novices, green thumbs, and everyone in between. It aims to inspire the consumer to garden, with the key call to action being "Get down to your local garden centre for further advice and

The new Life is a garden website has a modern design, is simple and easy to navigate and gives the consumer growing tips, advice on sustainable gardening, GYO garden ideas, explains the environmental benefits of trees and green-life, and lists member garden centres. Certified Nursery Professionals (CNPs) and Australian Garden Centre Accreditation Scheme (AGCAS) members.

Life is a garden is the Nursery & Garden Industry's consumer brand. It was created in 2006 after consumer research commissioned by NGIA found that although gardens mean different things to different people, Australians overwhelmingly agree that gardens evoke positive images and emotions; gardens are Australian for good times and green-life, gardens and gardening are all about creating the space to enjoy life. Life really is a garden!

Browse the new website at www.lifeisagarden.com.au

Life is a garden.



The NGIA consumer website www.lifeisagarden.com.au has been revamped and re-launched.

Online national invasive plants questionnaire - where does your business stand? ■ Herry Trans • I

Following part one of the national invasive plants survey, Nursery & Garden Industry Australia (NGIA) is requesting vital Industry participation in an online questionnaire to gauge how familiar Industry businesses are with invasive plant issues.

National Environmental and Technical Policy Manager Dr Anthony Kachenko says: "The response to part one of the survey saw NGIA receive an astounding 350 production/availability lists from nurseries across Australia, NGIA sincerely thanks all participating nurseries who are clearly focusing on the future of invasive plant management by removing those plants currently deemed invasive or potentially invasive from their lists.

The online questionnaire is open to all retail and production nurseries across Australia. To participate go to the NGIA website www.ngia.com.au

There are four parts to the survey which cover invasive plants:

- awareness
- resources
- extension
- management

The survey takes no more than 10 minutes to answer and all completed surveys will remain confidential and used only for research purposes. Business details will

not be disclosed in the final report, to be released in December 2009.

"Nursery & Garden Industry Australia is committed to protecting Australia's rich biodiversity," says Dr Kachenko. This questionnaire will provide NGIA with important and relevant data that will assist us to establish the level of awareness growers and retailers have regarding the plants they sell. It continues to build on the success of the Grow Me Instead campaign, nationally launched in April this year to further educate industry and consumers regarding the prevention and spread of environmental weeds.

With an increasing focus on environmentally sound business practice, it is vital for industry to participate.

If you would like to know more about this project, contact Del Thomas ph/fax (02) 6557 2727 or email: delwyn.thomas@ngia.com.au. Del has been engaged by NGIA to lead this project.

Note: NGIA is aware that the lists of garden plants known to be invasive vary considerably from region to region. However, we will address this when evaluating production lists and writing the final report.

Industry reviews show what we need to know

Recently your Industry has undergone two separate reviews.

The first review was the Industry Development Needs Assessment Survey which was mailed out to levy payers with the purpose of gaining feedback on key areas or programs for investments. The Horticulture Australia Ltd (HAL) Board required all horticulture industries to complete the process to ensure levy payers get input into project development.

The data from the survey will be utilised in formulating programs which will be submitted to HAL in November.

This report highlighted the need for effective supply chain management and efficient systems with State Governments for plant movement. It also showed that Industry is greatly dominated by "small businesses" that are dependent upon good customer relations and market demand generated by others.

The second review was a business case analysis review of levy investments for the period 2003 - 2007. The review was requested by the Department of Agriculture, Fisheries and Forestry to ascertain the benefits accrued to the industry from the investment of taxpayer's money via the nursery levy matched funds.

This review showed that there was a lack of reporting on how the industry has been affected by large-scale economic issues such as drought and the Global Financial Crisis. As a result, it is now a requirement that NGIA project reports include economic impact/benefit reporting.

Recently NGIA has reviewed a very powerful report on the Canadian Industry conducted by Deloitte on behalf of the Canadian Ornamental Horticulture

In highlighting the importance of the industry, the report states; "Ornamental horticultural production is significant and represents over 40 per cent of Canada's horticultural industry." The report concluded that Canada's ornamental horticulture sector has a major economic impact in Canada, and significant potential to develop and expand. "As such the sector should be a target for growth by government at all levels."

We will be looking to get a similar project undertaken in Australia and request that Industry engages with us to provide honest and accurate data to enable a report that will elevate our Industry in the eyes of politicians and financiers for the benefit of all.

Robert Prince NGIA CEO

Upcoming events

October 14, 2009
NGIQ Trade Day
Bowen Hills, QLD
Contact: Sarah Manser
Ph: (07) 3277 7900
Email: info@ngiq.asn.au
Web: www.ngiq.asn.au

October 18, 2009 Irrigation Australia 2009 National Conference

Swan Hill. VIC Contact: IAA Ph; (02) 9476 0792 Email: info@irrigation.org.au Web: www.irrigation.org.au

October 18 – 24, 2009
National Water Week
Web:
www.nationalwaterweek.org.au

October 20, 2009

NGINA Trade Day Newcastle
Contact: Norma Peters
Ph: (02) 4982 8209

Email: info@ngina.com.au
Web: www.ngina.com.au

October 27, 2009

NGIV Trade Day

Contact: NGIV

Ph: (03) 9576 0599

Email: ngiv@ngiv.com.au

Web: www.ngiv.com.au

October 27, 2009 NGINA Trade Day Wagga Wagga

Contact: Geoff Rapley Ph: (02) 6922 5746 Email: info@ngina.com.au Web: www.ngina.com.au

November 3, 2009

NGINA Trade Day

Contact: Kay Vargas

Ph: (02) 9679 1472

Email: info@ngina.com.au

Web: www.ngina.com.au

November 10, 2009

NGINA Trade Day Dubbo

Contact: Robert Lee
Ph: (02) 6548 2472

Email: merriwa.nursery@
hunterlink.net.au
Web: www.ngina.com.au



Green-Life Careers Update



Since the launch of the Green-Life Careers website in mid June 2009, there has been a concerted effort to get the word out about careers in the Nursery & Garden Industry.

The site, www.greenlifecareers.com.au, has received around 4,500 hits, with the Careers and Employment pages being the most popular with visitors

The Employment page has listed over 28 fabulous industry 'positions vacant' and 12 listings on the 'positions wanted' page. It is great to see that industry employers now have a national, dedicated site for their job listings. It will continue to increase in popularity as word gets out.

There have been 32 Educators (TAFE and University) so far who have asked to be listed on the Educator page, which includes their logos and the contact details of a dedicated Horticulture staff member to answer any inquiries.

Recently, Green-Life Careers has also featured on the SkillsOne website www.skillsOne.com.au with NGIA National Training Manager, Fiona Kelly, scoring a valuable 'guest blogger' spot for one week, extolling the virtues of a career in the industry and promoting Green-Life Careers.

The SkillsOne electronic newsletter - which included promotion of the 'guest blogger' of the week – is distributed to a database of over 10,000 individuals. The majority of these subscribers are from the Education and Training sector (80%) with the primary users being Career Counselors.

The Nursery & Garden Industry has also recently worked with the Institute for Trade Skills Excellence (ITSE) on a national advertising campaign for Nursery & Garden Industry featuring targeted advertisements in News Limited newspapers all over the country. This commenced in August and will continue for 12 months.

Distribution of the recently printed Green-Life Careers brochure has commenced also. Brochures have been sent around the country for use at conferences, career days and for use as career councilor stock material.

The next stage of this project will be the promotion of the website to other industry associations. We hope that other industry associations will assist in building up the career information we have created in each of the sectors.

We are also looking for industry input into job descriptions and other information. So, if you are keen to share your knowledge and experience with us, go to the Employer Assistance page of www.greenlifecareers.com.au and download the 'industry journey' document.

Finally, Green-Life Careers is a proud joint sponsor of the CNP Student Scholarship for 2009. Student applications close on November 12.

For further information, questions or suggestions about the Green-Life Careers project, please contact Fiona Kelly on 02 9876 5200, or via careers@ngia.com

Do you know a high achieving Horticulture Student?

The Certified Nursery Professional (CNP) Student Scholarship Program closes for applications on November 12. After the successful launch of this program in 2008, this year's program is expected to attract even more motivated Horticulture students from around Australia.

With the valuable support of sponsors Australian Horticulture Magazine and Green-Life Careers, the 2009 Program aims to send one Metropolitan and one Regional Horticulture student in their final year of study to the Nursery & Garden Industry's National Conference to be held in Darwin from April 19 to 22, 2010.

Student applications must be supported by their employer and training organisation and include their current academic results, along with 300 words outlining why they think they should be awarded the scholarship and what they would do with the opportunity.

The Certified Nursery Professional Program (CNP) supports the Student Scholarship Program which encourages Horticulture students to learn the benefits of industry focused professional development and networking with industry professionals.

Further information and application forms are available from the Green-Life Careers website www.greenlifecareers.com.au, via email request to careers@ngia.com.au or by phone on (02) 9876 5200.







October edition of NGIA Clippings compiled and edited by Sarah McMahon, NGIA Communications & PR Coordinator.



This symbol tells you that the project, activity or event you're reading about is funded by your Nursery Industry Levy dollar.



Home About Us Awards Publications Training Business Improvement Calendar Green-Life Careers

National Invasive Plants Survey – we need your assistance

In recent years, Nursery & Garden Industry Australia (NGIA) has taken significant steps forward in tackling the spread of invasive plants. The launch of the Grow Me Instead state booklets in April was just one of the initiatives designed to educate industry and the wider community. NGIA is now conducting a national invasive plants survey to address the gaps in knowledge and help us establish the level of awareness growers and retailers have regarding the plants they sell.

National Environmental and Technical Policy Manager Anthony Kachenko says: "For many years now, our industry has been proactive in responding to the threat of invasive plants to our natural environment. However, the question remains, how can we continue to place industry in the forefront when it comes to invasive plant issues?"

This survey will occur in two stages:

Stage one is currently underway. It will examine annual production lists nationwide for recognised invasive plants.

As part of stage two, a survey will be conducted to collect data from production and retail nurseries nation-wide. This survey will gauge how familiar businesses are with invasive plants and determine if these are still offered for sale.

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If you would like to know more about this project or to forward your list, contact Del Thomas Ph/Fax (02) 6557 2727 Mob: 0414 678840 or email: delwyn.thomas@ngia.com.au

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Back to main



replaced by the Plant Health Act 2009. Changes will come into force this July however, changes affecting nursery trade will not be enforced until January 1, 2010.

Read More »

Nursery Papers & Clippings In the June Nursery Paper...

Grow Me Instead – How the nursery industry is addressing the spread of invasive plants

In recent years, NGIA has taken significant steps to address key environmental issues. In this month's Nursery Paper, Robert Chin and Delwyn Thomas provide an overview of the national Grow Me Instead (GMI) program developed by NGIA in conjunction with the Australian Government to combat the spread of invasive plants.

Read More »





What's new?

The best fisherman wins at 2010 National Conference



The 2010 Nursery & Garden **Industry National Conference** will be held at the tropical seaside location of Darwin in April. The Conference officially begins on the evening of Monday, April 19 but due to the bounty of fish in the Top End, the Conference Committee would like to hold a fishing trip and competition that day, prior to the Welcome Function. Prizes will be given out for the heaviest fish and total length of fish caught.

This trip will be additional to the base conference registration fee. As boats are filling fast and we need to make reservations. we are seeking expressions of interest. Please email us at info@ngia.com.au if you will be in Darwin for the 2010 National Conference and want to prove you are the best fisherman in the industry.

2010 Awards – entries now open!

The 2010 Nursery & Garden Industry (NGI) Awards are now open and entry forms are coming in thick and fast. You have until July 26, 2009 to enter your business, make sure you don't miss out!

Read More »

New industry website launched

The new Nursery & Garden Industry website was officially launched on Tuesday, March 9. The website is still at the address www.ngia.com.au, but it has been completely revamped. It is user-friendly, succinct and has a modern, industry appropriate design.

Read More »

National Invasive Plants Survey – we need your assistance

In recent years, Nursery & Garden Industry Australia (NGIA) has taken significant steps forward in tackling the spread of invasive plants. The launch of the Grow Me Instead state booklets in April was just one of the initiatives designed to educate industry and the wider community. NGIA is now conducting a national invasive plants survey to address the gaps in knowledge and help us establish the level of awareness growers and retailers have regarding the plants they sell. Read More »

Promoting Green-Life Careers



ingly has commenced an industry career project aptly named Green-Life Careers. As the industry continues to be identified as an area of skills shortage, it is vital that we ensure Australian workers are made aware of the issues, the opportunities and the career pathways available to them within the industry.

Read More »

Industry Training Package Update

NGIA has been working with industry stakeholders for a number of years on the merger and review of the industry's Training Package AHC09. Unfortunately the current draft documents, released in April 2009, have not incorporated many of the areas of concern to our industry which have been previously brought to Agrifood Industry Skills Council's (AFISC's) attention.

Read More »

New rules affect plant trade in SA

In South Australia, the Fruit and Plant Protection Act 1992 will be

Anthony Kachenko

From: NGIA [delwyn.thomas@ngia.com.au]

Sent: Wednesday, 17 June 2009 6:55 PM

To: Anthony Kachenko

Subject: NGIA Invasive Plants Survey - We Need Your Support

Afternoon,

My name is Del Thomas. No doubt you will have recently received a communication or two from NGIA introducing the **national invasive plants survey** I am conducting on behalf of industry.

In part one of the survey, I'm asked to collate nursery production lists.

Why am I doing this?

To establish if any plants listed on the **Weeds of National Significance**, **National Environmental Alert Weeds or Sleeper Weeds** lists continue to be grown and sold by industry.

The lists that I will reference can be found at http://www.weeds.gov.au/weeds/lists/index.html

Will my production list be treated in confidence?

YES!

- This information will be kept in strict confidence.
- · This study will not list any growers or retailers.
- It is designed to position our industry as a leader in tackling invasive plants.

We believe that the majority of growers, if not all, may have already reviewed their production lists and removed those plants deemed invasive or potentially invasive However it is important that industry as a whole is able to demonstrate this responsible action.

Could you please assist me in this process by forwarding a copy of your production lists to me A.S.A.P., preferably as a word, PDF or Excel file.

Regards and many thanks for your cooperation.

Del Thomas Phone 02 6557 2727 Mobile: 0414 678 840

Email: delwyn.thomas@ngia.com.au

Postal: 108/30-34 Little Street, Forster 2428



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NGIA is now conducting a national invasive plants survey to address the gaps in knowledge and help us establish the level of awareness growers and retailers have regarding the plants they sell.

National Environmental and Technical Policy Manager Anthony Kachenko says: "For many years now, our industry has been proactive in responding to the threat of invasive plants to our natural environment. However, the question remains, how can we continue to place industry in the forefront when it comes to invasive plant issues?"

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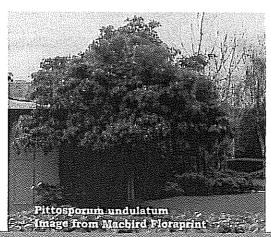




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Nursery & Garden Industry Queensland

PO Box 345 Salisbury, Qld 4107 Phone (07) 3277 7900 Fax (07) 3277 7109



July 2009



Green SPRING GREEN EXPO 2009 28th & 29th July 2009

Exhibitors and buyers alike had een requesting a return to the Gold loast for some time and in response ve did return last year and it was a reat success, so much so we have lecided to continue Expo on the Fold Coast.

- **VENUE** Gold Coast Convention & Exhibition Centre, Gold Coast Highway, Broadbeach (next to Conrad Jupiters Casino)
- DATES Tuesday 28th and Wednesday 29th July.
- POPENING HOURS from 9.00am to 8.00pm Tuesday and 9.00am to 12.00 noon on Wednesday.

ike all previous Expos you can pre egister your attendance or simply egister at the door.

some tickets are also available for he Expo Dinner on Monday 27th uly at the Surf Club Kurrawa - call enny on 07 3277 7900 for details.

Jon't miss this great event.



ANNUAL DINNER AND AWARDS PRESENTATION



The Summit Restaurant Mt. Coot-tha is again the venue for NGIQ's Annual Dinner and Awards Presentation to be held on Friday 20 November 2009.

State winners in the 2010 Nursery & Garden Industry Awards will be presented with their Certificates and then go on to compete at the National Finals to be held in conjunction with NGIA Conference in Darwin from 19 - 22 April 2010. Nomination forms are available from NGIA or www.ngia. com.au and follow the links.

NGIQ's Nurseryperson of the Year will also be announced. If you know someone who you feel would be deserving of this honour then please see August 'Leaflet' for nomination forms.

The Summit Restaurant provides spectacular views of Brisbane especially at night. The evening starts at 6.30pm and tickets include canapes, three course meal and drinks.

The evening is a great way for members to catch up with colleagues and friends.

Special thanks also to our generous Sponsors for their support.



The production and distribution of 'Leaflet Magazine' has been tentificated by HAI in partnerstap with MCIA. It is funded by the revisery industry levy and voluntary contributions form industry. The Australian Government provide matching funds for all HAI's



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September 2009

WHERE TO WITH INDUSTRIAL RELATIONS

Enclosed with this edition of "Leaflet" is Industrial Update #38 which provides details on a number of significant industrial relation changes. These include:

- · Details on the recent State Wage Case increase for employees of unincorporated businesses such as sole traders, partnerships, etc from 1 September 2009.
- A comparison of the new national Nursery Award 2010 and National Employment Standards to the Nursery Award - State 2003 and the Nursery Award (NAPSA).
- A comparison of the costs of a permanent versus a casual employee

With substantial changes to occur on the 1 January 2010 it provides a real opportunity for all businesses to look closely at their existing employee structure.

It is expected that most State Governments will give up their IR rights and then all retail garden centre and production nursery staff will be covered by the Nursery Award 2010.

At this stage the Nursery Award 2010 will apply to all Pty Ltd companies in Australia as well as all other employees in Victoria and South Australia (these States have already given up their IR rights).

Copies of the new national Nursery Award 2010 and National Employment Standards are being sent to members on renewal of their 2009/10 membership.

NGIQ Annual Dinner & Awards

The 2009 NGIQ Annual Dinner & Awards Presentation will be held on Friday 20th November 2009 at the Summit Restaurant, Sir Samual Griffith Drive, Mt. Coot-tha.

A registration form for this event is enclosed on Page 4 of 'Leaflet'. This is a great opportunity to involve your staff in what could be your own Christmas activity. You can also reserve your own table.

Apart from the Statel Nursery Award Winners who go on to compete at the national level there will also be NGIQ's own Nurseryperson of the Year and Certificates of Recognition.

We do hope you will be able to attend this most important event. Mark the Date in your Diaries.

The production and distribution of "Leafet Magazine" has been tabilitated by HAL in partnership with NGNA. It is funded by the cursery industry, in your and voluntary contributions from industry. The Australan Government provide matching funds for all HALs R & D activities.



Know-how for Harticulture

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ONLINE NATIONAL INVASIVE PLANTS **QUESTIONNAIRE - WHERE DOES** YOUR BUSINESS STAND

Following part one of the national invasive plants survey, Nursery & Garden Industry Australia (NGIA) is requesting vital Industry participation in an online questionnaire to gauge how familiar Industry businesses are with invasive plant issues.

National Environmental and Technical Policy Manager Anthony Kachenko says: "The response to part one of the survey saw NGIA receive an astounding 350 production/availability lists from nurseries across Australia. NGIA sincerely thanks all participating nurseries who are clearly focusing on the future of invasive plant management by removing those plants currently deemed invasive or potentially invasive from their lists."

The online questionnaire is open to all retail and production nurseries across Australia. To complete the survey, visit www.ngia.com.au and follow the link to the survey.

There are four parts to the survey which cover invasive plants:

- awareness
- resources
- extension
- management

The survey takes no more than 10 minutes to answer and all completed surveys will remain confidential and used only for research purposes. Business details will not be disclosed in the final report, to be released in December 2009.

"Nursery & Garden Industry Australia is committed to protecting Australia's rich biodiversity," says Anthony. This questionnaire will provide NGIA with important and relevant data that will assist us to establish the level of awareness growers and retailers have regarding the plants they sell. It continues to build on the success of the Grow Me Instead campaign, nationally launched in April this year to further educate industry and consumers regarding the prevention and spread of environmental weeds.

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Nursery & Garden Industry Northern Territory

NGINT Nursery Notes

Nursery & Garden Industry NT Inc PO Box 348 Palmerston NT 0831











Issue No 21 October 23, 2009

www.ngia.com.au

www.ntha.com.au

PowerWater

Dates to Note







October Business Month – various events
Tropical Garden Spectacular – planning meeting
Singapore, City in a Garden Study Tour – post trip 'get together'
Understanding Top End Soils Workshop – Darwin
NGINT AGM
Recognising & Monitoring Pests Workshop - Darwin
Kununurra visit

Kununurra visit NGINT Awards Presentations & Christmas Dinner (Darwin) Recognising & Monitoring Pests Workshop – Alice Springs NGINT Awards Presentations & Christmas Dinner (Alice Springs) October
October 29
October 29
November 10
November 19
November 17
November
December 4
December 10

Singapore, City in a Garden Study Tour & Tropical Garden Spectacular 2010 planning, combined 'get together'
"We're back, we had a great time and we want to share it!"

The Nursery & Garden Industry NT & Charles Darwin University Horticulture Aquaculture Group <u>invites all tour participants and Tropical Garden Spectacular Committee Members</u> to share the experiences and inspiration as we prepare for the 2010 TGS.

When: Thursday October 29 Where: Berrimah Farm, Makagon Rd, Berrimah (Bark Hut Social Club; follow NGINT directional signs from entrance) Time: from 5.30pm Light refreshments will be available

There were many, many photos taken and plenty of ideas and much inspiration gained, so please come along. All welcome.

Understanding Top End Soils Workshop

This workshop will be held at the Coastal Plains Research Station on Tuesday November 10th.

Understanding soils is particularly important to ensure plants can grow effectively in the ground and, importantly, so that the industry can provide appropriate information and advice to gardeners.

Topics include:

• Soil Properties• Soil Management• Soil Conservation• Soil Amelioration• Soil Testing and Mapping • Interpretation of soil test results Guest Speaker: Dr Maarten Stapper

Registration forms will be available next week.

NGINT AGM

The NGINT AGM will be held on Thursday November 19th at 6.00pm at Berrimah Farm (Bark Hut Social Club). Please note this date, the *official notice memo* will be circulated next week.

NT Weed Management Handbook - now available

A manual has been developed to provide detailed information about weed control in the Northern Territory.

Weed Control Option Tables are available for most problem weeds which detail herbicide recommendations and optimum treatment times. Other control methods, which when used in combination with herbicides can assist in more efficient weed eradication, have also been described.

The handbook has been put together by the NRETAS Weed Management Branch and is available from NRETAS or the NTHA/NGINT Office.

Online National Invasive Plants Questionnaire - where does your business stand?

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With an increasing focus on environmentally sound business practice, it is vital for industry to participate.

'Life is a garden' Website Re-launched!

NGIA has revamped the consumer website www.lifeisagarden.com.au

Re-launched in late September, the Life is a garden website is a gardening site for everyone; garden novices, green thumbs, and everyone in between. It aims to inspire the consumer to garden, with the key call to action being "Get down to your local garden centre for further advice and information."

The new Life is a garden website has a modern design, is simple and easy to navigate and gives the consumer growing tips, advice on sustainable gardening, GYO garden ideas, explains the environmental benefits of trees and green-life, and lists member garden centres, Certifled Nursery Professionals (CNPs) and Australian Garden Centre Accreditation Scheme (AGCAS) members.

There is plenty of information and various recipe cards to assist retail garden centres with seasonal promotions and inspirational ideas.

The 2009 CNP Student Scholarship is open for submissions!

The industry's Certified Nursery Professional (CNP) program offers two lucky horticultural students the chance of an expense paid trip to attend the Nursery & Garden Industry National Conference in Darwin on 19-22 April 2010.

Proudly supported by Australian Horticulture magazine and Green-Life Careers, this scholarship offers students an early understanding of the benefits of ongoing professional development. Some students may in fact already qualify as a CNP if they have been working and studying simultaneously.

All education institutions are encouraged to nominate a student for consideration by Nursery & Garden Industry Australia's panel of judges. The panel identifies a finalist for both Metropolitan and Regional areas in each State. From the State Finalists, two scholarships were awarded - one for Metropolitan National Winner and the other for Regional National Winner.

For more information, please contact the Training Department of NGIA on 02 9876 5200 or via email at <u>careers@ngia.com.au</u>

Applications close at 4:00pm (EST), 12 November 2009

NT Young Achiever Awards

The Northern Territory Young Achiever Awards recognizes the Achievements of young territorians in nine categories. Do you know of an individual, group or organization aged between 14 and 26 who deserves to be rewarded for their hard work?

We are urging your local achievers not to miss out!

It is free to nominate and every nominee will receive a certificate of recognition and could have the chance to win \$2,000 thanks to TiO. Nominations are now open in the following nine categories:

- -The Charles Darwin University Arts Award -The Perkins Shipping Sports Award -The Somerville Community Services Award
- -The ConocoPhillips Environment Award -The Northern Territory Government Career Achievement Award
- -The Power & Water Science & Engineering Award -The McArthur River Mining Regional & Rural Initiative Award
- -The Northern Territory Government Young Carers Award -The Minister for Young Territorians Excellence in Youth Leadership Award Please Note: Nominations close Friday 27th November

You can nominate on line at http://www.awardsaustralia.com.au/YAA nt.html or contact NTHA 8983 3233 for nomination forms.

October Business Month 2009 - To see the full range of events and speakers please visit www.nt.gov.au/obm
October Business Month (OBM) is a month long program of inspiring and motivational business events.

This is the 15th OBM, and is hosted by the Department of Business and Employment.

OBM 2009 will feature an exciting range of key note speakers and events to provide Territory businesses with:

• Opportunities for professional development • New management ideas • Networking opportunities



NGI Awards Presentations

Judging has been completed and we look forward to presenting our Territory winners with their awards at the NGINT Awards Presentations and Christmas Dinners in December. The Darwin Dinner will be held at Buzz Café, Cullen Bay on Friday December 4th and the Alice Springs Dinner is planned for Thursday December 10th (venue tbc). Look out for your invitation which will be distributed soon. All Territory winners will represent the NT in the National NGI Awards to be presented at a Gala Dinner to be held in Darwin during the NGI National Conference in April, 2010.

NGINT Welcomes New Member – Scotts Australia Pty Ltd has become an associate member of NGINT represented by Ben McClernon, Regional Sales Manager WA & NT. We look forward to Ben's involvement when he is visiting the NT.















Nursery & Garden Industry South Australia

Nursery Notes

Issue # 26 August 7th 2009









NGISA 101 Years Old!

South Australian Reservoir Levels – 73% (Mt Bold 77% - Kangaroo Crk 50%)

Diary Notes. NGISA AGM 19th August

RAHS NGISA display Sept 4th – 12th HIA Home Show October 16th-18th NGISA Awards of Excellence Saturday 14th November

SA Water Residential Water Rating System

There is a state wide price for water. This means that whether you live in Ceduna or Campbelltown, Goolwa or Glenelg, everyone pays the same price per kilolitre (1,000 litres) for water regardless of the cost of getting that water to your home. This system is considered the fairest way to spread the cost of providing and maintaining basic water facilities across the community. Water pricing for residential customers is broken down into an annual charge for supplying the service and a stepped pricing system for water use - the more you use, the higher your bill. Residential properties include houses, maisonettes, home units, flats and strata/community title residences and vacant residential land.

The residential water charges set by Government for 2009-10 are:

- A quarterly access charge of \$34.40
- \$0.97 per kl for the first 120 kl used in the year
- \$1.88 per kl for residential consumption above 120 kl over the year
- \$2.26 per kl for consumption above 520 kl over the year for homes, home units, maisonettes, townhouses, row houses and some shacks.

Blocks of flats and multiple land use properties on a single property assessment are excluded from the third tier. These rates are payable on any land that can be connected to an available water main, whether or not the property is connected to the water supply system. Sewerage provision charges are separate and charged in addition to water charges.

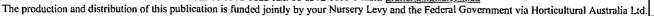
Latest News: SA's new Plant Health Act officially Proclaimed August 1st

The information below is from the pen of Gary Cox from PIRSA; for clarification of some areas of concern!

- Freight Manifests will need to be lodged before arrival for any plant and plant related product coming to SA.
- If a driver can't produce a manifest or PHC (Plant Health Cert) at a Roadblock they will be delayed whilst a Quarantine Direction Order is issued ordering plant product into quarantine until PIRSA is supplied with them.
- Infringement notices become likely if neither can be produced after arrival or products without approval are released from quarantine.
- Not all items require PH certification. (Only required for prescribed plants, plants with fruit present, plants
 potted in soil, plants grown within 20kms of a (PCN) Potato Cyst Nematode detection, vines, (RIFA) Red
 Imported Fire ants, green snail from WA etc)
- Driver will need a PHC/PHAC for each consignee (if one is required for the imports) they are delivering to.
- If the nursery stock is unrestricted then no (PHC) Plant Health Certificate is needed.
- If you need a PHC on 01/01/10 then you need one now:
 - o If stock arrives in SA (by rail, sea, post, air) or at a Roadblock without one (and should have one) they will face delays, penalties and possible return/confiscation of stock.
- The 1/1/10 deadline date relates only to the commencement of mandatory verification of nursery stock by SA receivers.
- Please Note: Regarding paper work being placed directly onto Cartons in a stick-on envelope:
 - o To meet the new provisions it would be wise for companies to re-address their procedures and either allow drivers to open the envelopes with PHC's in if they need to, or give the PHC & manifests to drivers separately, this will overcome border problems with cartons inside trucks but listed on manifests.

Nursery & Garden Industry SA Inc 505 Fullarton Road NETHERBY ABN 34 989 393 724

Ph: 08 8372 6822 fax: 08 8372 6833 e-mail: gfuller@ngisa.com.au





PHOENIX SOCIETY:

Phoenix Society may be able to help you with a wide variety of services;

- They make timber pallets and boxes, crates, produce bins, frames and transport containers
- Assemble or de-assemble and pack almost anything that you may require
- Labelling services
- Industrial assembly eg GMH
- Printing and Mailing services Brochures, price lists etc
- Embroidery Services corporate clothing
- POT WASHING at a cost per pot very competitive and sanitary -

Contact Chris Horne: chorne@phoenixsoc.org.au

Web www.phoenixsoc.org.au

Weeds of National Significance in SA go to: http://www.ngia.com.au/files/nurserypapers/NP 2006 11.pdf

National Invasive Plants Survey - we need your assistance

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International TAFESA Students looking for work in Adelaide

We have a quality group of Students looking for 3 days per week work in Nurseries, available now, the most noticeable is Satinder Mangot, she has a lovely manner as well as a BSc Agri (Hons) from the Punjab Agri University. Mangot has 6 years experience as a gardener in Tasto Food & Nursery. She lives at Kilburn and has transport, please phone 0430 820 403 or email mangotsatinder@yahoo.in. Mangot also can enlist the guys from this terms class!

NIDO'S TIMELY TIPS!

Make a Plan: Do you have an up to date plan view of your Nursery Property? Why do you need one you may ask? Let me count the reasons!

- Drainage movement of surface & under ground water that may enter or leave your property
 - o You are responsible for it on your property and as it leaves
 - You can control and maybe utilise it doesn't matter if it is rain or irrigation water
- Movement of traffic; pedestrian, staff, trucks, tractors etc etc Control it to avoid incident!
- Environmental risks
 - o Are neighbours too close to your business activities, after hours entry, fans, engines
 - o Noise, dust, spray drift etc etc
- Identify areas of improvement, and plan to improve, it doesn't always have to be expensive!
- Where may be the best location to put a storage/wetland, storage of waste, fuel, chemicals
- Where are the major under ground pipes, valves, sprinklers and cabling.
- Use a GOOGLE map they are free and show contours, buildings, roads etc
- Identify risks and solutions do a basic A4 Map, photo copy it and get to work on the copies!

Royal Adelaide Show 2009:

Do you have any product you want displayed at this years Show?

Ask your staff if they would like to help man the Associations display for a period during the event from September 4th to 12th inclusive – it means free entry and a close up of Jenny Gillies wearable Blooms! Take a look; http://www.theshow.com.au/showground/royal-adelaide-show/royal-adelaide-show-home.jsp



NGIA Clippings

Excerpts from the latest NGIA e-newsletter

Read more on all these topics at www.naia.com.au

This month's Nursery Paper...



Grow Me Instead

– How the
nursery industry
is addressing the
spread of invasive
plants



s environmental awareness among the Australian community escalates, the need for Nursery & Garden Industry (NGIA) to promote its environmental credentials has never been more vital. In recent years, NGIA has taken significant steps to address key environmental issues. In this month's Nursery Paper, Robert Chin, National Development Officer – invasive Plants and Delwyn Thomas, Grow Me instead Project Manager, provide an overview of the national Grow Me Instead (GMI) program developed by NGIA in conjunction with the Australian Government to combat the spread of invosive plants. Read more online

New Awards, Simplified Entry Process, Greater Winner Benefits

Presented by Nursery & Garden Industry Australia, the Awards recognise and reward excellence within the nursery and garden industry and acknowledge industry leaders as they strive to achieve best business practice.

Each year the industry seeks feedback on the Awards process from entrants, as well as recommendations from judges to ensure the Awards are progressive and relevant to industry. For 2010 we have made some changes to the Awards and the entry process to make entering easier for you. Read more online

Industry Training Package update

NGIA has been working with industry stakeholders for a number of years on the merger and review of the industry's Training Package AHC09. Unfortunately the current draft documents, released in April 2009, have not incorporated many of the areas of concern to our industry which have been previously brought to Agrifood Industry Skills Council's (AFISC's) attention.

We have been contacted by a large number of industry stakeholders from around Australia who do not support the current draft documents and as NGIA represent these industry stakeholders, we are therefore unable to support the package in its current draft format and have advised AFISC of this.

NGIA has requested the AFISC formally reply to our concerns, addressing all the areas we have brought to their attention. Their response will be disseminated to industry stakeholders for further discussion. As the industry national body we will continue to work with all parties towards an acceptable outcome. Read more online

For further information on this project you can contact Fiona Kelly at the NGIA office on (02) 9876 5200 or fiona.kelly@nala.com.au



we need your assistance

In recent years, Nursery & Garden Industry Australia (NGIA) has taken significant steps forward in tackling the spread of invasive plants. The launch of the Grow Me Instead state booklets in April was just one of the initiatives designed to educate industry and the wider community.

NGIA is now conducting a national invasive plants survey to address the gaps in knowledge and help us establish the level of awareness growers and retailers have regarding the plants they sell.

National Environmental and Technical Policy Manager Anthony Kachenko says: "For many years now, our industry has been proactive in responding to the threat of invasive plants to our natural environment. However, the question remains, how can we continue to place industry in the forefront when it comes to invasive plant issues?"

This survey will occur in two stages:

Stage one is currently underway, It will examine annual production lists nation-wide for recognised invasive plants.

As part of stage two, a survey will be conducted to collect data from production and retail nurseries nation-wide. This survey will gauge how familiar businesses are with invasive plants and determine if these are still offered for sale.

All information gathered during this project will be kept private and used only for research purposes. Business details will not be disclosed in the final report.

With an increasing focus on environmentally sound business practice, it is vital for industry to participate in this project.

Delwyn Thomas has been engaged to lead the project. Del is a well known and dedicated horticulturist with more than 40 years experience in the nursery and cut flower industries. Anthony Kachenko, NGIA National Environmental and Technical Policy Manager will be working with Del in coordinating the final evaluation and delivery of the project.

With an increasing focus on environmentally sound business practice, it is vital for industry to participate.

If you would like to know more about this project or to forward your list, contact Del Thomas Ph/Fax (02) 6557 2727 Mob: 0414 678 840 or email: delwyn. thomas@naia.com.au

Note: NGIA is aware that the lists of garden plants known to be invasive vary considerably from region to region. However, we will address this when evaluating production lists and make the final report. If you wish to make special note of certain species on your list, please do so.





Know-how for Horticulture™



Last chance to participate in the INVASIVE PLANTS SURVEY!



- How familiar are you with invasive plant issues?
- What is your business position on invasive plants?
- How do you manage invasive plants?

We have attached the survey for your convenience. If you've already completed the survey, we appreciate your co-operation.

Simply complete the attached survey and FAX it back to the Nursery & Garden Industry Australia

All surveys will be treated in confidence

To:

NURSERY & GARDEN INDUSTRY AUSTRALIA

FAX NUMBER:

02 9876 6360

From the data collected, tools and resources will be developed to assist you in dealing with this key issue. We thank you for your time!



Appendix 3 Questionnaire

National Invasive Plants Survey

1. Background

This survey is designed to gain feedback from Industry on invasive plant issues.

Your input is appreciated and will help provide guidance on invasive plant issues that impact our Industry.

The survey will take approximately 10 minutes to complete.

Your information will be treated in confidence and the results will not identify people or businesses.

* 1. Please provide contact details so we can send you a copy of the results (THE STATE FIELD ONLY IS MANDATORY)

Name:	
Company:	
Address:	
City/Town:	
State:	
Post Code:	
Fax Number:	
Email Address:	
Phone Number:	

2. What is your principle business activity?

jn	Production nursery	jn	Plant broker
m	Wholesale market	m	Retail nursery

3. Are you a member of your state nursery association?

m	Yes	j m	No
J		J · ·	

4. Is your business associated with any of the following industry accreditation programs?

	No	Yes	Working Towards It
Accredited under	ķa	ļa.	ļα
NIASA	•	, and the second	J.
Certified under EcoHort	j m	j m	j n
Certified under	j m	j ra	j ra
BioSecure HACCP	-	-	-
Accredited under	m	i n	m
AGCAS) : 1	J:1	J: i

National Invasive Plants Survey

- 5. From where does your business source most nursery stock? (If more than one state, please tick multiple choices)
 - € Queensland € Victoria € Western Australia
- € Australian Capital Territory € South Australia € Import
- 6. Where is your major market? (If more than one state, please tick multiple choices)
 - € Queensland € Victoria € Western Australia
 - € New South Wales € Tasmania € Northern Territory
 - Australian Capital Territory South Australia Export
- 7. How many staff does your business employ? (Please include yourself and treat casuals as full time equivalents)

jn 6-15 jn 31-50 jn 100 plus

2. Awareness

Please answer all questions.

For the purpose of this survey the definition of INVASIVE plant is: a plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity.

8. Which of the following Nursery & Garden Industry policies/programs are YOU aware of?

	Yes	No
Invasive Plants Policy	t o	ia
Position	J C I	J
National Plant	i n	in
Labelling Guidelines	J:1	J:1
Biosecurity Plan	j n	j∙n
Grow Me Instead	i n	in
campaign	J:1	J: i
Our Environment, Your	Ťg.	in
Backyard Invasive	Jsi	J ₈₁
Plants Resource Kit		

9. Which of the following w	Yes	No
Weeds of National	Jo.	j ₀
Significance (WoNS) Environmental Alert Weeds	j m	j n
Sleeper Weeds	j n	j n
State/Territory Weeds	jn	jn
Local Shire/Council Weeds	j n	j n
10. Where do you source in plants?	formation on declar	red weeds and invasive
€ Websites	€ Horticul	tural Magazines (i.e. Aussie Hort)
€ Government weed agency (i.e. DPI)	€ Worksh	ops
State Nursery Association	€ Confere	nces
Nursery Papers		
Other (please specify)		
	AFF attended a 'Wha	at Does Your Garden Grow
11. Have YOU or YOUR STA	NFF attended a 'Wha	at Does Your Garden Grow
11. Have YOU or YOUR STA seminar? jn Yes		at Does Your Garden Grow
11. Have YOU or YOUR STA seminar? jn Yes Resources		at Does Your Garden Grow
11. Have YOU or YOUR STA seminar? jn Yes		at Does Your Garden Grow
11. Have YOU or YOUR STA seminar? jn Yes Resources se answer all questions.	j₁ No	
11. Have YOU or YOUR STA seminar? jn Yes Resources	j₁ No	
11. Have YOU or YOUR STA seminar? jn Yes Resources se answer all questions. 12. Do YOU have a copy of programs/policies?	j₁ No	
11. Have YOU or YOUR STA seminar? jn Yes Resources se answer all questions. 12. Do YOU have a copy of programs/policies? Invasive Plants Policy	jn № the following Nurse	ry & Garden Industry
11. Have YOU or YOUR STA seminar? jn Yes Resources se answer all questions. 12. Do YOU have a copy of	jn No the following Nurse	ry & Garden Industry
11. Have YOU or YOUR STA seminar? jn Yes Resources se answer all questions. 12. Do YOU have a copy of reprograms/policies? Invasive Plants Policy Position National Plant	j _m No the following Nurse Yes ja	ry & Garden Industry No ja
11. Have YOU or YOUR STARSEMINAR? jn Yes Resources se answer all questions. 12. Do YOU have a copy of reprograms/policies? Invasive Plants Policy Position National Plant Labelling Guidelines	jn No the following Nurse Yes jn jn	ry & Garden Industry No Ja Ja

National Invasive Plants Survey 13. Do YOU have a copy of the following weed lists? Weeds of National jo 'n Significance (WoNS) **Environmental Alert** m m Weeds Sleeper Weeds State/Territory Weeds m Local Shire/Council m m Weeds 4. Extension Please answer all questions. 14. How does your business distribute information about declared weeds and invasive plants WITHIN your business? Staff meetings E Display educational weed information (i.e. posters in staff room € Email Grow Me Instead booklets) Staff attend training/workshops We don't formally distribute information Other (please specify) 15. Do you promote Grow Me Instead alternatives or other alternative plants? jn No in Yes 16. Do you display local weed posters or provide other educational material for customers? jn Yes jn No 5. Management Please answer all questions. 17. What is your business policy regarding the propagation or sale of declared weeds or locally invasive plants?

ational invasive Plants	s Survey	
_		undary of your nursery to check for
nursery plants that may h		
jn Never	j _∩ Quarterly	jn Fortnightly
j _n Annually	jn Monthly	j∩ Weekly
19. Are you working to pr growing on your property	J	mnant native or indigenous vegetation
j _n Yes		j₁ No
20. Is the management of priority for your business	•	iction weeds on your site a major
j _n Yes		j₁ No
21. What weed managem control pest/production v	J	es does your business have in place to
Herbicide application		€ Mulching of common gardens/display gardens
€ Revegetation of disturbed area wi	th endemic species	€ Using only certified growing media
€ Hand weeding		Identify plants with 'weedy attributes' and remove
Sanitation of nursery equipment		from production/sale
Other (please specify)		
22. Are the strategies list management plan for you	-	rt of a documented weed
j _n Yes		j _n No
23. OVERALL how do you	ı rate your w	eed management performance?
jn Poor	jn Satisfactory	jn Excellent
jn Adequate	j∩ Good	
. Further Comments an	d Suggestic	ons
nank you for participating in this su	rvey.	

The Nursery & Garden Industry values your input and will keep you up to date with the outcomes of this survey.

If you would like more information about the survey, or have any questions, please contact Anthony

24. Further o	comments a	and sugges	tions? (OP	TIONAL)	
		<u> </u>			