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Mr Robert Hansen
Research Director
Agriculture and Environment Committee
Parliament House
BRISBANE QLD 4000

By Post & by Email: aec@parliament.qld.gov.au

Dear Robert

**AgForce Submission**
**Inquiry into Impacts of Weeds and their Control in Queensland**

AgForce is the peak, state farming organisation representing the majority of beef cattle graziers, sheep and wool producers and dryland grain growers in Queensland. The gross value of these agricultural commodities in Queensland for 2014/15 totalled $6.3billion which included $1.15billion for broadacre cereal, oilseed and pulse crops, $5.14billion for slaughtered cattle and sheep and $66million for wool[1]. AgForce exists to ensure the long-term growth, viability, competitiveness and profitability of these industries. Our members provide high-quality food and fibre products to Australian and overseas consumers, manage more than 50% of the Queensland landscape and contribute significantly to the social fabric of rural and remote communities.

Weed management and prevention continue to be a major input cost to most Queensland broadacre grazing and grain enterprises. Recent changes to Australian and Queensland Government biosecurity legislation in 2016 is placing more emphasis on landholders being responsible for preventing and managing weeds on their land. This is becoming increasingly difficult due to globalisation, transport efficiencies, community perceptions about weed control options, reduced community awareness of agricultural weed issues and managing for co-existence of land uses. Weed biosecurity risks impact on the red meat and cropping industries through weed seed contamination, lost production, toxicity issues and weeds invading farming and natural systems. National biosecurity is paramount for Australia. Shared responsibilities between all tiers of government, agricultural industries, agribusiness and other affected land managers need to improve.

AgForce welcomes the Queensland Parliamentary Committee inquiry into impacts and control of weeds in Queensland and provides the following feedback and recommendations to the terms of reference and three case study weeds.

**CASE STUDY – PRICKLY ACACIA**

**1 Responsibilities of local governments for control prohibited and restricted weeds in relation to Section 48 of the *Biosecurity Act 2014***

[1] Australian Bureau of Statistics – Value of Agricultural Commodities Produced 2014-15
http://www.abs.gov.au/ausstats/abs@.nsf/mf/7503.0

Most local government areas affected by prickly acacia are meeting their regulatory obligations by implementing Good Neighbour programs to control weeds across property boundaries. National drought recovery grants have enabled shires such as Longreach Regional Council to employ local producers and land managers to control woody weeds along reserves, stock routes and the Town Common.

Key elements to a successful good neighbour and catchment approach for woody weed management include:

- Active participation by everyone in the catchment
- Share success stories with neighbouring properties
- Efficient localised leadership
- Follow up treated areas.

Over 53 properties have signed up to the Flinders Shire Good Neighbour Policy to stop weed spread by managing all weeds within 50m of boundary fences; 250m upstream of watercourses traversing a boundary; 25m either side of gazetted roads, access tracks and powerlines and weeds on all stock routes. Barcaldine Shire has commenced the Good Neighbour Policy in the Muttaburra region. Drought has delayed McKinlay Shire commencing their neighbour program.

An area for improvement for everyone affected by prickly acacia is adherence to methods which minimise weed seed movement in livestock and vehicles and better management of these introduced risks on farm. The progress on developing a national voluntary weed hygiene declaration by the Farm Biosecurity project http://www.farmbiosecurity.com.au/ has been slow. The new Biosecurity Act 2014 has resulted in the previous weed hygiene declaration being superseded and not reissued by the Queensland Government.

**2 Biosecurity Queensland's Weed Programs, Including Biological Control and New Technologies, are Adequately Funded and Effective**

The $1.88m War on Western Weeds (WoWW) initiative funded by Queensland Government and the $306,500 War on Northern Invasive Weeds (WoNIW) project funded by Australian Government, have provided adaptive research, trials and costings for several innovative techniques for controlling prickly acacia. Scatter guns and helidrops for herbicide granules, misters for regrowth, mulcher/grinders and mechanical pluckers are all new cost-effective techniques with an ongoing role in prickly acacia management. Effective and practical project leadership by Nathan March (DAF Cloncurry) has contributed to the success of these initiatives. The project must be commended for developing case studies outlining costs of control using different methods and strategies. "*The WoWW project has given a vision to many people. For 100km of fence line, they know what cost and cost of follow up in subsequent years*" (Scott Harrington, Julia Creek *pers.comm.*). Biocontrol research was also funded through the WoWW initiative however, there are no host-specific agents from India. Testing is continuing on gall midges from Ethopia.

The several WoWW factsheets on prickly acacia management http://www.southerngulf.com.au/resources/fact-sheets/ need wider circulation to affected land managers. The outdated Biosecurity Queensland Prickly Acacia PestFact https://www.daf.qld.gov.au/__data/assets/pdf_file/0007/73753/IPA-Prickly-Acacia-PP9.pdf needs to be updated with the outcomes from the WoWW and WoNIW adaptive management research. For example, seed longevity, misting minor use permit with fluroxypr, cost-effective Scatter gun and heli-drop application of tebuthiuron pellets, new mechanical methods and ephemeral watercourse minor use permit for tebuthiuron application by Desert Channels Queensland.

*AgForce recommends the Prickly Acacia PestFact is updated with emerging best practice information and additional herbicide options, arising from the WoWW research project.*

Funding for strategic control of prickly acacia by the Lake Eyre Basin Indigenous Rangers needs to be sustained to ensure control of outlying infestations.

AgForce members recognise the importance of using localised outlets and regional suppliers for supply of herbicides and application equipment, weed contractors, etc. Although there is scope to barter for bulk discounts on supplies to co-ordinated weed projects, the sustainability of local regional communities needs to be also considered ("*local projects for the food chain in the local area to go around*"– Scott Harrington, Julia Creek *pers.comm*.).

**CASE STUDY – GIANT RATS TAIL GRASS (GRT)**

**1 Responsibilities of Local Governments for Control Prohibited and Restricted Weeds in Relation to Section 48 of the Biosecurity Act 2014**

Local government have been tasked with containing the rampant spread of giant rats tail grass, which has the potential to invade 60% of Queensland with annual rainfall greater than 500mm. The small sticky grass seed is readily spread by livestock, native animals, vehicles, machinery and water movement. Councils are making progress, although resources to facilitate extension and compliance are very limited.

A snapshot of successful council programs include:

- Gympie Regional Council has implemented a GRT management policy based on implementing property buffers and increasing their width annually (depending on property size)
- Livingstone Regional Council has undertaken to increase roadside buffers through unfenced roads across properties heavily infested with GRT (north of Rockhampton)
- Gladstone and Bundaberg Regional Councils offer incentives to affected landholders to control GRT and have hosted several awareness and field days

**2 Biosecurity Queensland's Weed Programs, including Biological Control and New Technologies, are adequately funded and effective**

There are several collaborative networks all contributing research and adaptive management into giant rats tail management. Although a component is funded through Biosecurity Queensland, there are also significant contributions from Australian Government, state managed land and agribusiness.

Current GRT projects and actions include:

- Biosecurity Qld with funding from Australian Government Rural R&D for Profit matched by several affected organisations (such as HQ Plantations, Bundaberg and Gladstone Regional Councils and New South Wales DPI) is relooking at biocontrol options (a stem gall wasp from Africa and other diseases and fungus attacking some of the native Sporobolus grasses closely related to GRT).
- Gladstone Regional Council, Economic Development Queensland and Biosecurity Queensland are doing integrated trials near Gladstone to improve control options.
- The crown rot fungus (now commercially available as 'Parra Trooper' from Beechwood Biological Solutions) which impacts on the closely related Parramatta grass in coastal NSW, is being trialled again in Queensland. Crown rot fungus previously failed to establish in Queensland.
- Granular Products with funding from AusIndustry and Biosecurity Queensland have commenced an extensive integrated management trial at Conondale near Maleny, to improve efficacy of the granular flupropanate herbicide and residual control of seedlings.
- Biosecurity Queensland and Powerlink are doing fertiliser trials along power utility corridors in the Cardwell district to fine tune fertiliser rates for managing GRT in improved pastures, where fluopropanate cannot be used due to the prolonged four-month grazing withholding period.
- AgForce and Weedspotters Network Queensland with a small grant from the National Landcare Programme are creating awareness about GRT spread through the movement of drought fodder.

What is lacking is a revision of the 'Best Practice Manual for Weedy *Sporobolus* Grasses' http://futurebeef.com.au/wp-content/uploads/2011/09/Weedy_sporobolus_manual.pdf and on Meat and Livestock Australia website http://www.mla.com.au/News-and-resources/Publication-details?pubid=4702. AgForce requested QDAF Future Beef team for this revision in 2015. The last update to this useful GRT manual was 2007. Since then, granular flupropanate has been patented, fertiliser trials with urea and DAP have been used successfully in some areas and crown rot fungus has been investigated over a wider climate range. There are many land manager case studies of success and failure which could also be shared. Herbicide application practices that inadvertently result in bare ground create more of a problem for GRT invasion and defeat the purpose of starting treatment. Hence there has been a movement away from using the manual's outdated recommended practice of using glyphosate.

The GRT Best Practice manual needs to update differences in withholding periods between flupropanate products. Withholding period for GrowChoice Tussock liquid herbicide requires stock for slaughtering or milking to be fed on clean feed for at least 14 days after grazing treated areas. Broadspray treated areas have a four-month withholding period after treatment, whereas spot spray withholding period is 14 days. GrowChoice did have data protection with the Australian Pesticides and Veterinary Medicines Authority on the additional data for meat residue in milk provided in their Trade Advice Notice for Tussock http://apvma.gov.au/node/13266. All other flupropanate herbicides state "lactating cows or goats must not be grazed in treated areas".

*AgForce recommends:*

- *'Best Practice Manual for Weedy Sporobolus grasses' to be urgently revised.*
- *Further R&D into integrated management using crash grazing, herbicide and fertiliser regime across a range of soil types and rainfalls.*
- *Develop and circulate a useful pictorial guide and key to identify the weedy Sporobolus grasses.*
- *More awareness and weed control days across affected regions.*
- *Bring together QDAF and Biosecurity Queensland staff and other pasture experts to scope cost-effective best practice for fertiliser use and rates in managing GRT.*
- *Increased resources to local government to implement management strategies such as Good Neighbour Programs.*
- *Scope and fund what additional data is required to improve practical requirements for grazing withholding periods.*
- *Research control methods for dam catchments*, irrigation channels, grazed utility *corridors and other sensitive areas where residual herbicides cannot be used.*

From a valuation and business point of view, early detection of giant rats tail grass and control can save long-term management costs and reductions in carrying capacity resulting in reductions in valuations (John Moore, property valuer *pers.comm*). Giant rats tail grass management is the major priority for coastal and central Queensland. Resources and awareness from everyone need to increase.

**CASE STUDY – FIREWEED**

**1 Responsibilities of Local Governments for Control Prohibited and Restricted Weeds in Relation to Section 48 of the *Biosecurity Act 2014***

Managing fireweed is one of several examples where Section 48 of the Act impedes local government coordinating management of regional priority weeds not listed as Restricted Matter (Schedule 2, part 2) or Prohibited Matter (Schedule 1, parts 3 and 4). Embedding the prescribed lists of Prohibited and

Restricted Matter within the *Biosecurity Act 2014* prevents autonomy and local decision making about priority weeds by local government. Any addition of new weeds to the Schedules will require passing amendments through Queensland Parliament or declaration of a restricted matter regulation. Local government can either (a) take no action against weeds not listed in the Schedules, or (b) develop their own local laws and associated compliance activities for priority weeds not listed in the Schedules, using the *Local Government Act 1994*. Otherwise, management of these weed species is up to the general biosecurity obligation of individual land managers to minimise weed risks.

**Table 1: Priority weeds not listed in Schedule 1 & 2 of the Biosecurity Act 2014. Local government cannot assist with coordinating management across neighbouring properties and/or use compliance, unless a local law is instigated.**

| Common name | Scientific name | Distribution | Issue |
|---|---|---|---|
| Brigalow fireweed | *Senecio brigalowensis* | Native weed. Brigalow clay soils across central and southern Qld. Overlaps with introduced fireweed *Senecio madagascariensis*. | Very toxic to stock, especially cattle, horses, pigs and poultry. Very difficult to distinguish from the introduced fireweed *Senecio madagascariensis.* |
| Willows cactus | *Cereus uraguayanus* (from Peru) | Isla near Theodore (Banana Shire); Willows township near Central Highlands gemfields. Herbarium records also from Western Downs (Tara, Glenmorgan) and South Burnett (Durong). | Rapidly spreading pest cacti along fencelines, roadsides and brigalow soils. Declared a pest under the Central Highlands Regional Council local law. Also a major pest cacti in Gunnedah NSW |
| Navua sedge | *Cyperus aromaticus* | Coastal wet tropics from Torres Strait, Bamaga, Cape York, to Townsville and west to Atherton Tablelands. Prefers where annual rainfall is greater than 2500mm | Invades and smothers low-lying tropical pastures in wet tropics and Atherton Tablelands. Not palatable to stock. |

**2 Biosecurity Queensland's weed programs, including biological control and new technologies, are adequately funded and effective**

There are no effective biocontrol agents for fireweed, nor current biocontrol research. According to the 2012 Fireweed Best Practice Manual http://weeds.ala.org.au/WoNS/fireweed/docs/Fireweed_BPM_LR.pdf, three potential biocontrol agents were tested for host specificity, failed and never released. No other research into ecology or

management options is being conducted by Biosecurity Queensland, although the department's PestFact states '*Research for herbicide control against fireweed, including residual control methods is ongoing*'. The limited staff resources within Biosecurity Queensland struggle to keep all PestFacts updated. For example, the Fireweed PestFact https://www.daf.qld.gov.au/__data/assets/pdf_file/0009/67167/IPA-Fireweed-PP31.pdf has omitted the herbicide metsulfuron methyl as an option for fireweed control. This safe, cost-effective, no withholding period herbicide should be listed in extension material provided by the department. Although the Minor Use Permit for aerial application of 2,4-D is mentioned in the text of the PestFact, the data should also be summarised in the PestFact's herbicide table. The Bromoxynil and Diflufenican herbicide blends are also applicable to winter cereals. Suggested updates are provided below in Table 2.

*AgForce recommends the Fireweed PestFact is updated with best practice information, herbicide options and revised distribution information.*

**Table 2. If Biosecurity Queensland is to remain a source of weed management information, the Fireweed pestfact should be updated with these relevant, registered herbicides and situations.**

| Situation | Herbicide | Rate | Comments |
|---|---|---|---|
| Pastures, roadsides, non-crop areas, rights of way, forest reserves, bushlands | Metsulfuron methyl 600g/kg plus surfactant 1ml/L | 40g/ha boom spray<br><br>10g/100L spot spray | PERMIT 80929 (expires 30/5/20) |
| Pasture | 2,4-D 625g/L<br>2,4-D 700g/L | 2.5 – 3L/ha<br>2.2 – 2.6L/ha<br>aerial application | PERMIT 13195 (expires 31/3/17) |
| Improved pastures (containing clover and/or lucerne), **winter cereals** | Bromoxynil 250g/L + Diflufenican (25g/L) (eg Jaguar) | 500ml/ha | Seedling control up to four leaf stage. |

## 3 Federal, state and local government weed programs coordinated

Fireweed (*Senecio madagascariensis*) was listed as a Weed of National Significance (WONS) in 2012 however, this national WONS incentive has ceased and no updates to the strategic plan or best practice manual have occurred. The host website has changed from Weeds of Australia (www.weeds.org.au) to http://weeds.ala.org.au/WoNS/fireweed/, so information is difficult to find for end users. The 2012 to 2017 Fireweed Strategic Plan http://weeds.ala.org.au/WoNS/fireweed/docs/National_Fireweed_Strategic_Plan_Final-June_2013.pdf has been superseded with a generic national framework for the management of established pests and diseases of national significance http://www.agriculture.gov.au/biosecurity/partnerships/nbc/intergovernmental-agreement-on-biosecurity/national-framework . Fireweed distribution on government weed websites is obsolete as infestations have been recorded further north than Gympie, even up into the Atherton Tablelands (Australian Government website http://www.environment.gov.au/cgi-in/biodiversity/invasive/weeds/weeddetails.pl?taxon_id=2624 and Biosecurity Queensland PestFact https://www.daf.qld.gov.au/__data/assets/pdf_file/0009/67167/IPA-Fireweed-PP31.pdf).

The compounding issue with fireweed is that microscopic examination of the flower bracts is often required to distinguish between the introduced fireweed (*S. madagascariensis* – 21 bracts with brown or black tips) and native Brigalow fireweed (*S. brigalowensis* – 18 to 20 bracts with unpigmented tips). It is essential that Queensland Government increase staffing resources at Queensland Herbarium to

assist with timely weed identification of fireweed species during the short flowering season. The distribution of the two toxic weed species overlap (Figure 1) and management of both species is important for graziers, fodder producers and horse owners. Local government and Queensland Government biosecurity officers can request landholder compliance for control of S. *madagascariensis* however, they have no regulatory authority to insist control of the native *S. brigalowensis*. Both fireweed species are particularly abundant after dry summers followed by winter rain such as experienced in 2016. There is a narrow window of control (approx 6 weeks) before the weed flowers, matures and becomes resistant to herbicide control. The weed toxins (pyrrolizidine alkaloids) are present in green and dry plant material and cumulative. Fireweed species are generally unpalatable, therefore poisoning is more prevalent when there is a shortage of pasture and abundance of fireweed. Poison symptoms in livestock may take weeks or months to appear. There is no treatment for 'walkabout disease' and associated liver damage in livestock.

**Figure 1: The distribution of the introduced fireweed *S. madagascariensis* and native Brigalow fireweed (*S. brigalowensis*) overlap, which impairs management programs coordinated through local government and affected land managers**

(a) Fireweed - *Senecio madagascariensis* (introduced)

(b) Brigalow fireweed -*Senecio brigalowensis* (native)

**OTHER**

**Programs for control of weeds on Crown land administered by the Department of Natural Resources and Mines are effective**

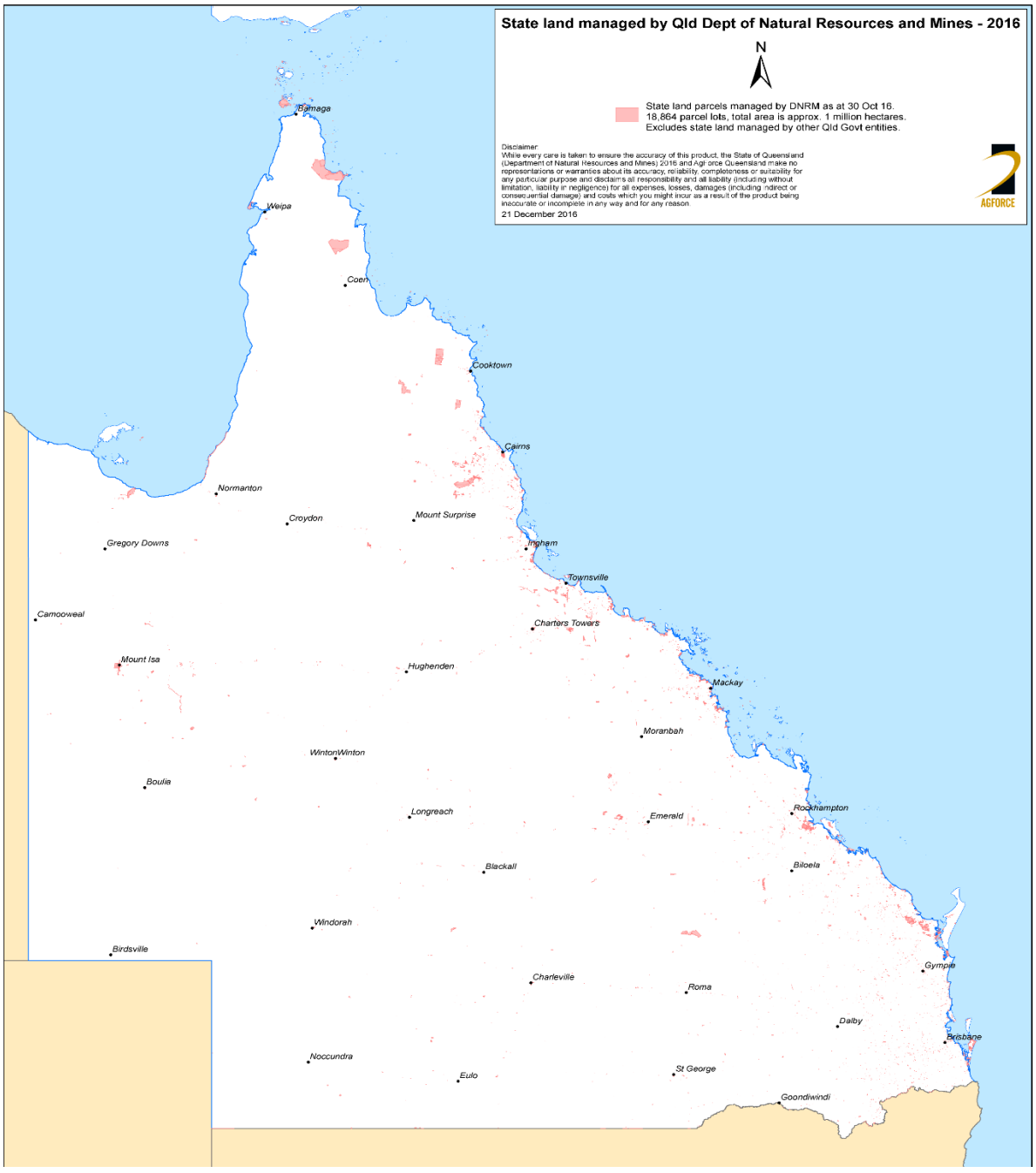
The Department of Natural Resources and Mines (DNRM) manages 18,864 land parcels totaling more than 1m hectares across Queensland (Figure 2). These land parcels are unallocated state land, state reserves and state freehold not managed by other government agencies. With a team of 21 field staff and a previous annual budget of $3.5m, the main activity is bushfire risk reduction, wild dog and brumby management, control of any Prohibited Matter weeds and some strategic management of priority weeds especially in areas of coordinated community programs (Jason Riethmuller DNRM *pers.comm*). AgForce is not aware of any major neighbour issues in regards to weed management with Crown land managed by DNRM however, issues have arisen with other government-managed land. Perhaps outside the scope of this review, major issues have arisen about controlling weed spread across property boundaries with other government-managed land such as:

- national parks and conservation reserves (parthenium, giant rats tail grass, wild dog management)
- gas pipeline corridor managed by Coordinator General and Economic Development (giant rats tail grass)

- irrigation channels at Dimbulah and adjacent catchment areas to dams managed by SunWater and SEQWater (giant rats tail grass)

*AgForce recommends any State land acquisition must also be allocated a perpetual annual budget for bushfire mitigation, invasive weeds and pest animal management. Any government activity to increase Queensland's protected area estate from 9 per cent to 17 per cent must also provide a realistic annual budget for weed and pest management.*

**Figure 2. Approximately 1 million hectares across 18,864 parcels of State land managed by the Department of Natural Resources and Mines.**



**Empowering localised networks of produce agencies and resellers to provide informed advice onweed control options.**

In addition to Local Government Land Protection Officers, an under-utilised extension network for weed control options are staff associated with rural produce agencies and herbicide resale outlets (eg, Elders, Landmark, etc). AgForce is keen to be involved in scoping training events/workshops to upskill produce agency staff in the use of innovative equipment, relevant herbicides and usage requirements, use of Best Management Practice (BMP) benchmarking systems for continuous improvement and advocates for developing farm biosecurity plans.

*AgForce recommends working in collaboration with Biosecurity Qld, Department of Agriculture and Fisheries, local government and agribusinesses to scope content for weed control workshops aimed at produce agency staff and interested land managers. Training content to encompass:*

1. *Using and calibrating new innovative equipment (Splatter guns, Skatter guns, boomless Tee-jet, thin-lining, applying granular herbicides, etc).*
2. *Integrating fertiliser and fire management into weed control strategies, where relevant.*
3. *Nationally recognised competency 'Control Weeds' AHCPMG301 delivered through a Registered Training Organisation.*
4. *Training assessment criteria to include 'Prepare a weed – farm biosecurity plan'.*
5. *Registered BMP users can revise their biosecurity standards.*

**Empowering everyone with their General Biosecurity Obligation**

Good biosecurity is everyone's responsibility. Although commercial producers understand the importance of managing biosecurity risks, there is limited knowledge across many of the peri-urban /hobby growers and part-time small agricultural holdings. Coupled with this is the growing urban-rural divide where many urban community members are disconnected and do not understand or comply with minimising weed seed spread when traversing rural roadsides and recreation areas.

*AgForce recommends a major government extension campaign through television, social media, bill boards, etc to elevate everyone's awareness about biosecurity and their duty to minimise weed seed spread and other biosecurity risks.*

**The need for a national or state biosecurity levy**

Queensland and Australian Governments need to consider the feasibility of a biosecurity levy across all residents and visitors to help generate a sense of contribution and commitment. Ideally a small percentage of the Goods and Services Tax (GST) could contribute towards national and state biosecurity.

Recent biosecurity incursions affecting Queensland such as red imported fire ant, yellow crazy ants, myrtle rust and red witchweed affect many industries, environment and community and hence are difficult to reach agreement on commodity based cost-sharing. A GST-biosecurity levy would be a solution where everyone contributes, not just rate-payers or industry groups. A biosecurity 'fighting fund' could help resource rapid responses and create a culture of 'see and respond' rather than hide any incursions and/or face significant financial losses due to property quarantine zones.

**The urgent need for a government succession plan for biosecurity expertise**

Expert skills are acquired over time through practical experience and mentoring. Governments and key industries need to resource a succession plan and cadetship for biosecurity surveillance and weed management expertise. The seven actions to 'build expertise and regional capability', outlined in the 2015 Queensland Government Biosecurity Capability Review https://www.daf.qld.gov.au/biosecurity/about-biosecurity/biosecurity-capability-review need to be urgently instigated.

**Further consultation**

If the Agriculture and Environment Committee host a public hearing, AgForce nominates Ninian Stewart-Moore and Ivan Naggs as participants. Ninian instigated the Flinders Shire Good Neighbour program and is very experienced with prickly acacia control. Ivan is fully aware of the issues associated with giant rats tail grass management and a member of several pest, beef and local government committees.

Their direct contact details are:

- Ninian Stewart-Moore, ph [redacted]
- Ivan Naggs, ph [redacted]

Regional visits by the Committee should consider visiting local government weed management systems and research initiatives that are working well, such as:-

- Prickly acacia – Flinders Shire Good Neighbour Program, Hughenden (contact Robyn Young, [redacted].
- Prickly acacia – War on Western Weeds adaptive management initiative managed by DAF. Case studies and economic comparison of best practice techniques (contact Nathan March, [redacted]
- Giant rats tail grass -Gympie Regional Council GRT Management Policy (contact Ben Curley, [redacted]
- Giant rats tail grass management trial – Elgin, Conondale, near Maleny (contact Joe Vitelli DAF, [redacted]
- Fireweed management – Southern Downs Regional Council (contact Craig Magnussen, [redacted]

Improved resources to local government, collaboration, regional champions and adaptive management are the way forward to gain best impact and return on government dollars invested into weed management. If you require any further information or clarification on this submission, please contact AgForce on [redacted] or email agforce@agforceqld.org.au

Yours sincerely

Andrew Freeman
Chief Executive Officer (Acting)