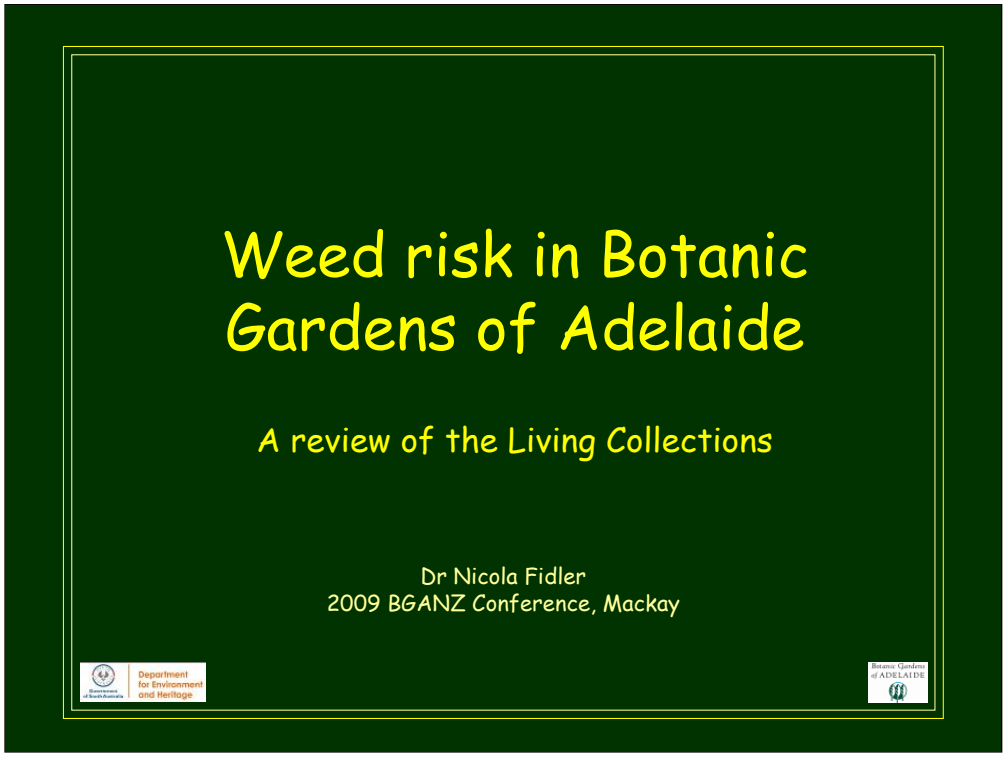


Good afternoon.

Today I'd like to tell you the process we went through in opening our plant collection to scrutiny regarding weediness.

As you may imagine, this had the potential to be a somewhat character building process for the horticultural staff but proved to be an extremely worthwhile exercise.

A number of factors came together which provided the impetus for this study:

•Action 1.1.1 of the Federal Australian Weeds Strategy is "**Identify pathways for weed invasion and assess the risk of introduction of new weeds**".

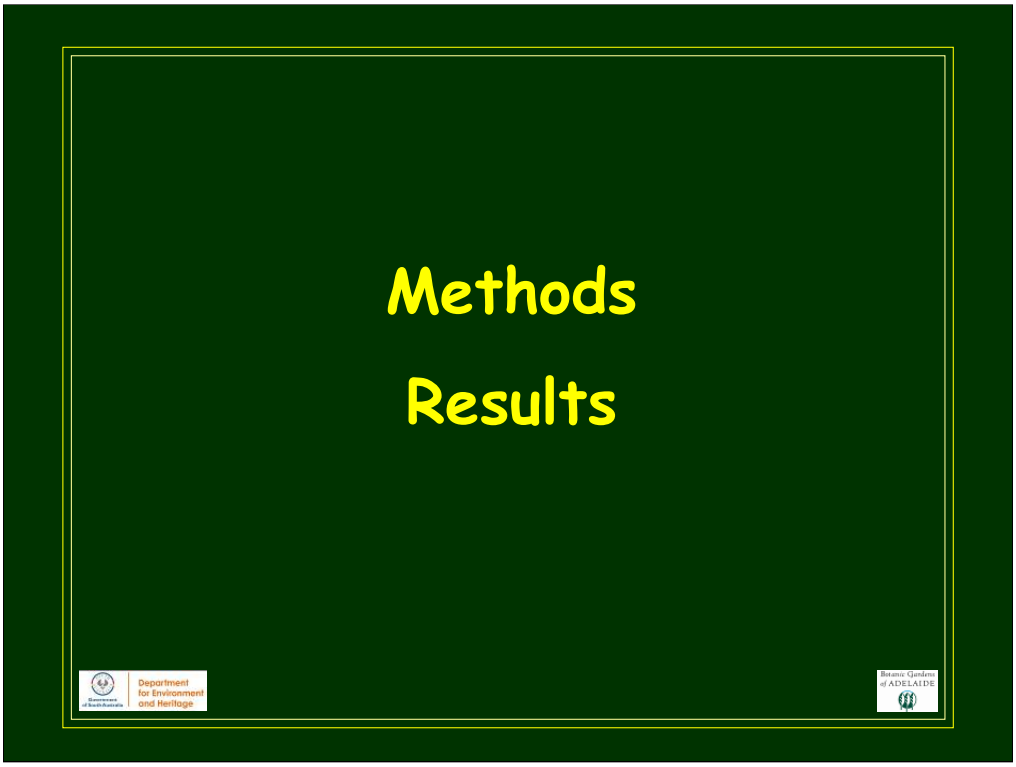
•Objective 1.5 of the draft SA Biosecurity Strategy is "**Routinely and rapidly assess and prioritize pest and disease species risks**"

•DWLBC works jointly with NRM program project "**Building SA's capacity to detect, manage and prevent weed threats**" with 10 component sub-programs

•This project is sub-program 5: **the identification of plant species in the Botanic Gardens of Adelaide's three gardens which have the potential for major weed impacts** (economic/environmental/social)

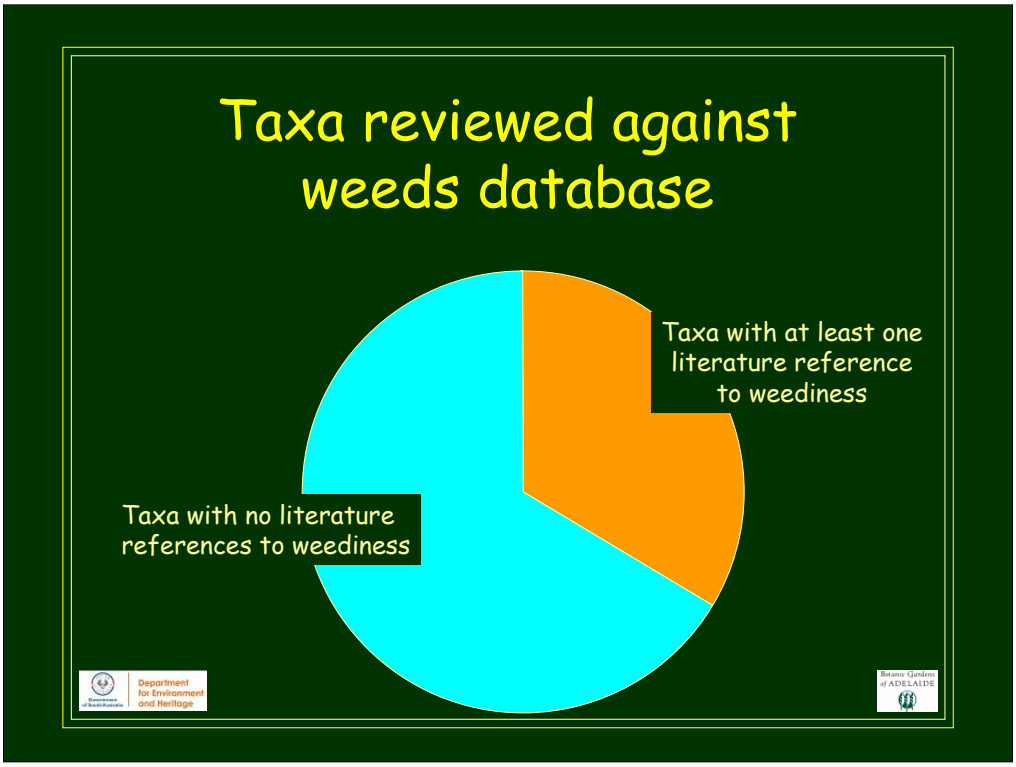
•Funding for 12 weeks with the focus on identifying new weed threats

- Historically about 2% of all plant introductions have become major weeds
- Nationally more than 8000 spp known only from BG collections
- Simple arithmetic suggests we could expect about 160 new weed threats from plants within our collections



•A list of approximately 9,500 exotic species was extracted from BGA Living Collections database BG-BASE

•Supplied to Mr Rod Randall, a member of the now disbanded Cooperative Research Centre for Weeds



•List passed through his database of worldwide literature weed references

•Overall approximately 30% of species in our collections had at least one reference to weediness in the scientific literature

Assigned categories

Status	Taxa	Weeds
Alternate name (synonyms)	919	292
Cultivated in Australia	969	69
Introduced	96	14
Introduced and cultivated	6428	2019
Introduced botanic gardens only	330	31
Introduced, cultivated and naturalised	731	729
Introduced, cultivated/accepted name	31	13
Invalid name (cannot be verified)	86	

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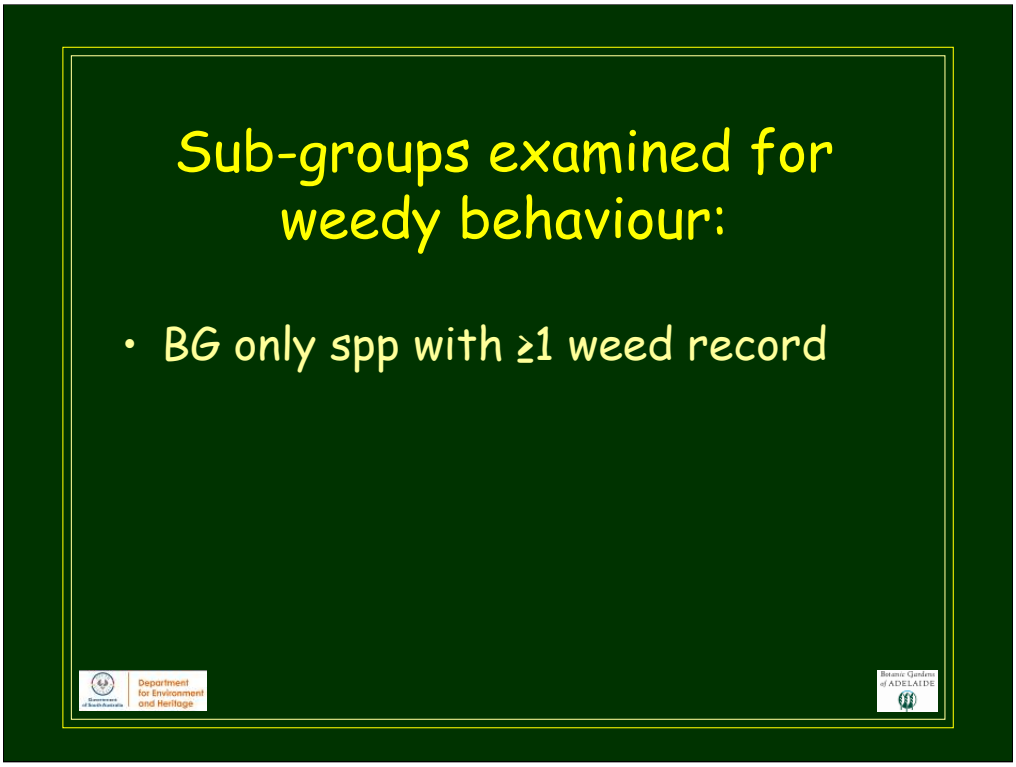
Introduced: evidence only of introduction, no evidence that these taxa are in cultivation

Introduced, cultivated and naturalised: the number of taxa in each column should be equal but you will see that two taxa had no reference to weediness in overseas literature viz., Artemisia thuscula (Asteraceae, Canary Islands) growing in ABG and Severinia buxifolia (Rutaceae, S China, Taiwan) growing in MLBG, neither of which appeared to be unreasonably weedy.

Introduced, cultivated – accepted name: name used in Australia is not the currently accepted name but its 'introduced, cultivated' status was determined by synonym

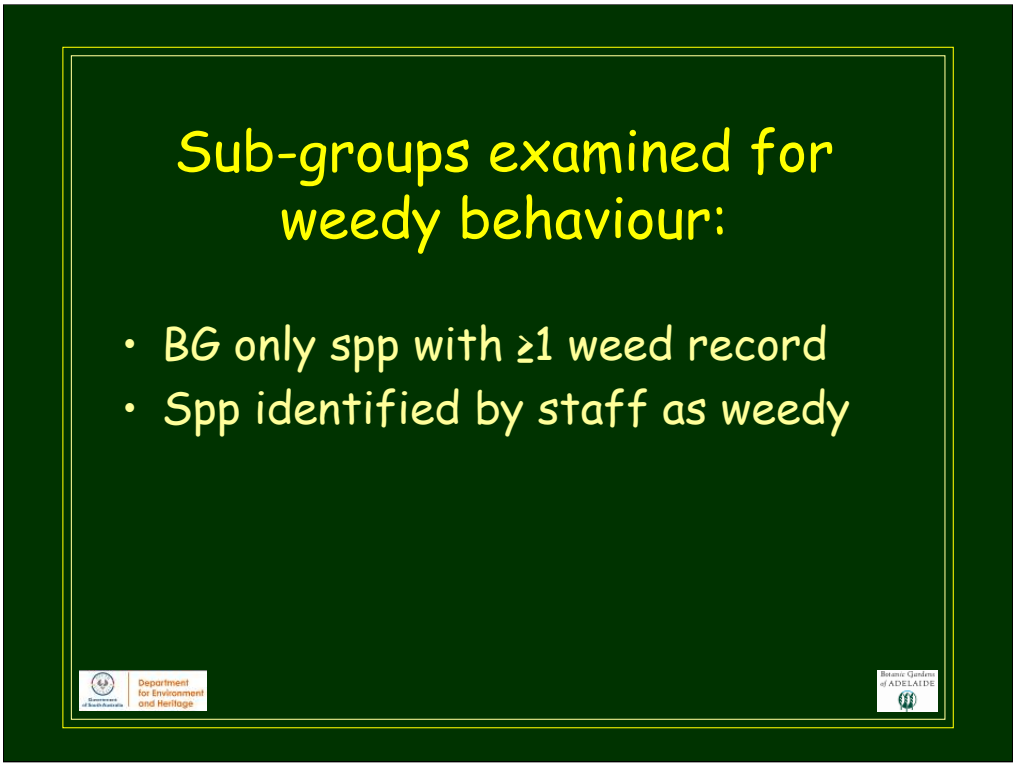
Sub-groups examined for weedy behaviour:



Given that we only had 12 weeks it was decided to focus firstly on the group "Introduced BG only" and examine the 31 taxa that had a record of weediness already overseas.

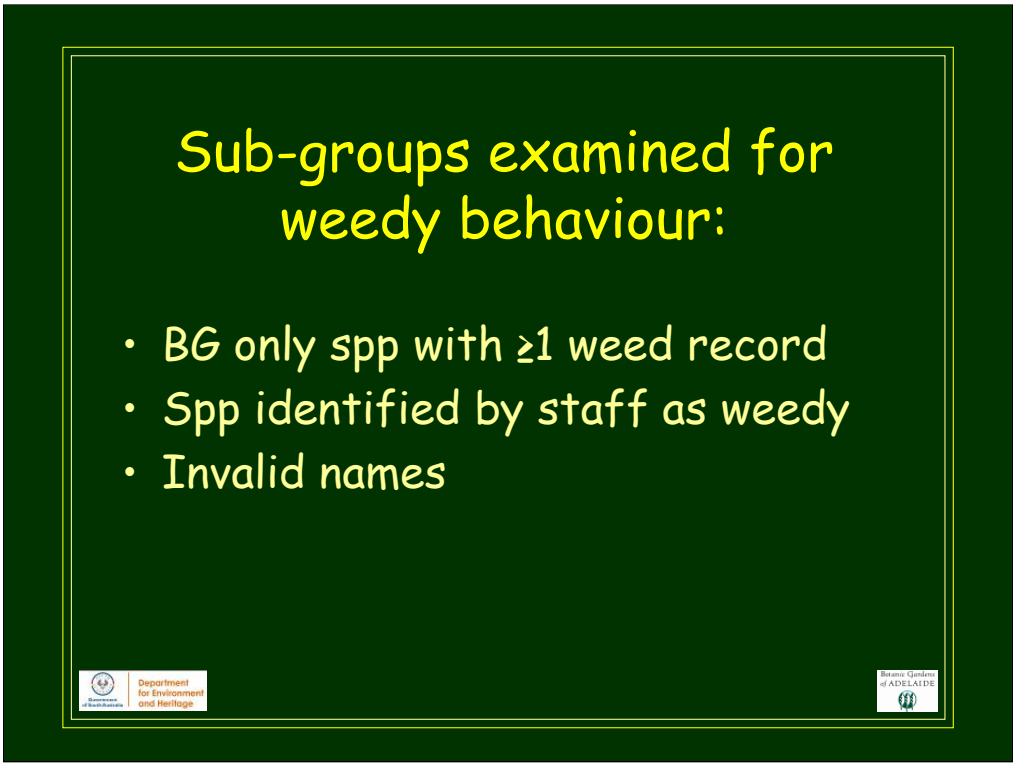
> 330 species in our collections known to be grown in Australia only in one or more botanic gardens – as I said before, this is the group from which new potential weeds may be quickly identified and controlled before they escape and naturalize

However it was clear that this was quite a small group and there was time to cast the net more widely so we set up consultations with various knowledgeable parties …



We also consulted the horticultural staff, the Friends Propagating Group and the weed scientists from DWLBC.

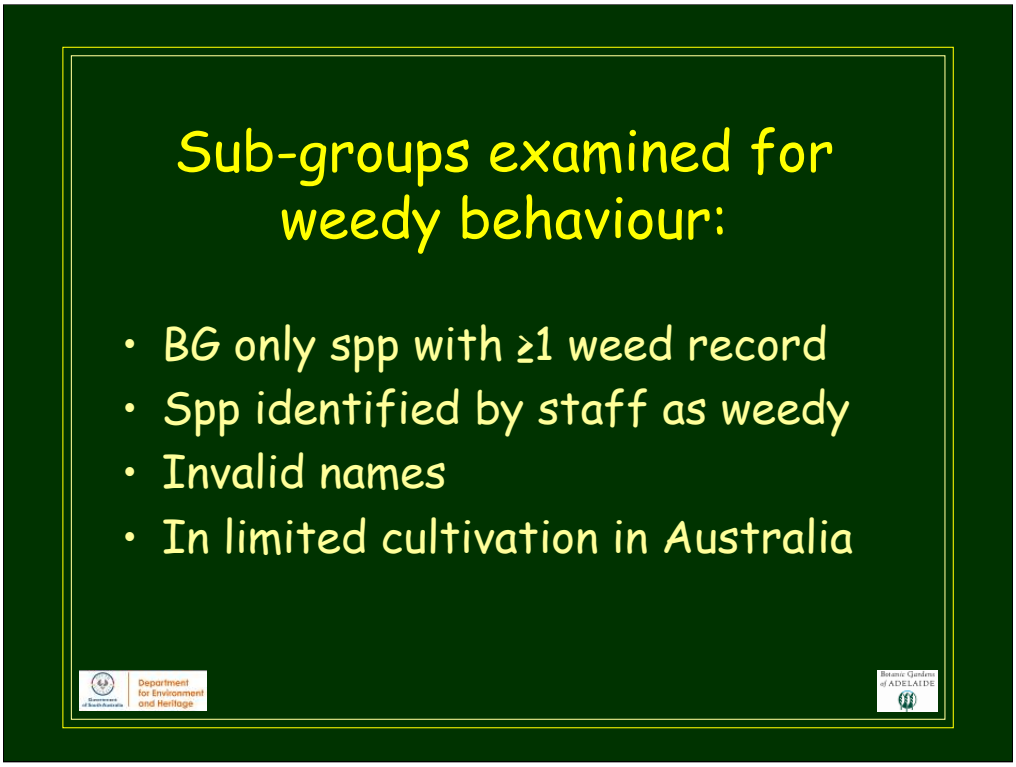
We also asked the hort staff about control measures they used for any species which tended to grow outside of its alloted space e.g. deadheading, hand pulling/spraying stolons or suckers &c.



•We also examined the group of 86 taxa for which the name we use is not recognized internationally in the scientific literature

•therefore it is not possible to identify any references to weediness

•However irrespective of what label is in front of the plant, the important factor is its potential for weediness in our climate. The nomenclature can always be sorted out later when resources became available.



Those species which are in limited cultivation in Australia:

•this group numbered 6,428, with about 1/3 having at least one weed reference attached.

•Within the time frame it was impossible to examine each taxon with weed record/s separately so we decided to check how widely they were commercially available, for later follow-up.

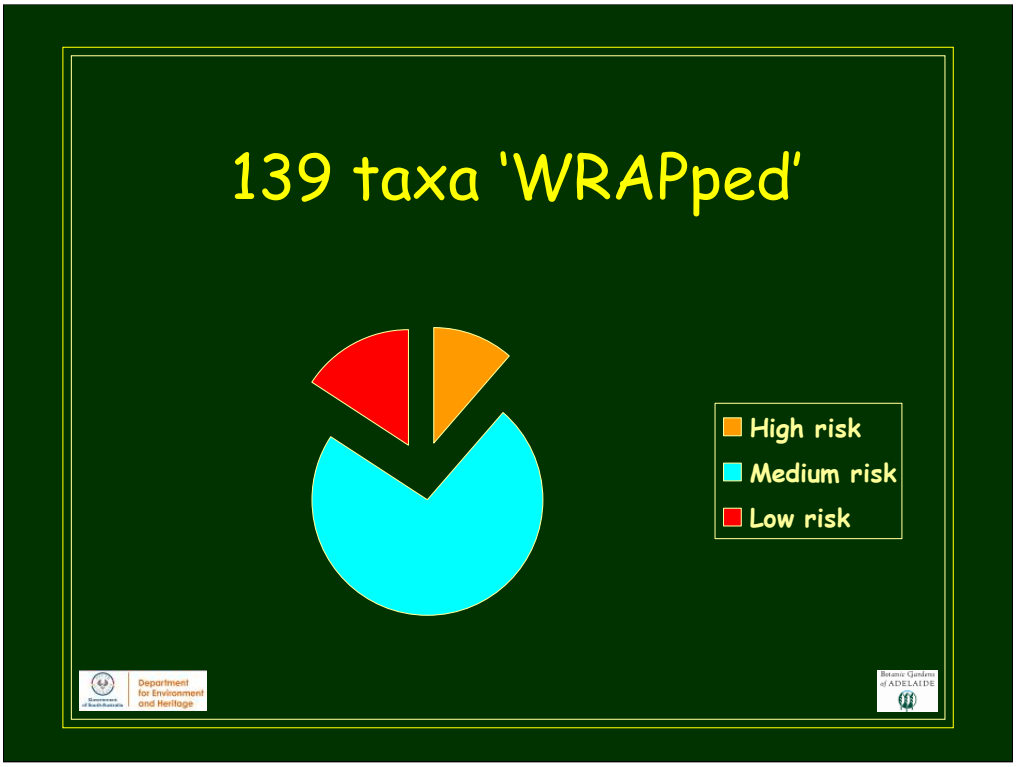
•Interestingly 34 of this group had already been nominated by staff members as having weedy tendencies, and 11 had no record of weediness either here or overseas. Obviously this group requires quite close scrutiny

In October 2004, CHABG agreed to the **development of common policies, procedures and a weed risk assessment methodology for Australia's BGs**

Which resulted in the development of software called WRAP – weed risk assessment protocol, based on a paper by Dr John Virtue of SA DWLBC and Dr Roger Spencer of RBG Melbourne published in 2008

Part 1 consists of a series of questions such as the species' weed history, its capacity to spread, its habit, for example whether it is thorny, its toxicity

The answer to each question generates a numerical score ie a **quantitative** score which in turn is converted to a qualitative high, medium or low risk.

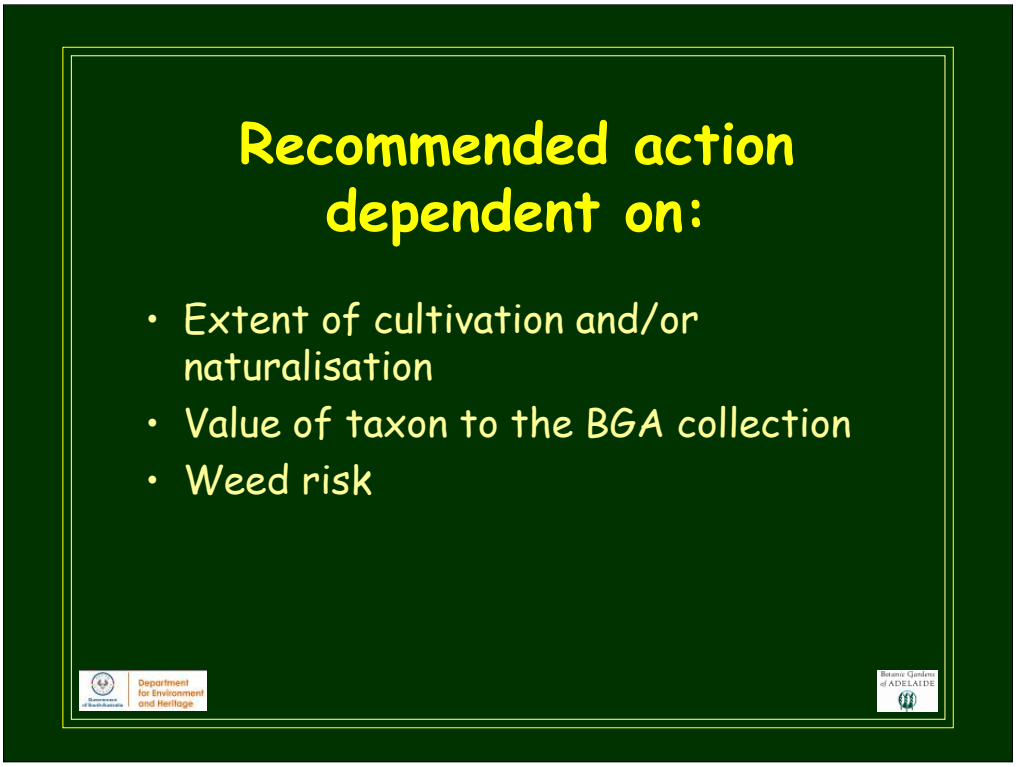


High risk: 16 (15 x Introduced, Cultivated and Naturalized; 1 x Alternate Name)

Medium risk: 101

Low risk: 22 (4 x ICN, 4 x Introduced and Cultivated, 14 x Botanic Gardens only)

This is then fed into part 2 - a decision matrix which contains recommendations for appropriate action



Our copy is centrally available to the horticultural staff and each person who does an assessment would be entering the data into the common database, resulting in an increasingly powerful information source, because it also records control measures to prevent weedy spread

WRAP DECISION MATRIX

STAGE OF INTRODUCTION

WEED RISK	PROPOSED NEW INTRODUCTION TO LIVING COLLECTION	CURRENTLY GROWN ONLY IN BOTANIC GARDENS and/or SPECIALIST COLLECTIONS	SOLD IN NURSERIES and/or INFREQUENTLY NATURALISED	WIDELY GROWN and/or WIDELY NATURALISED
LOW	**Grow** ·Monitor	**Grow** ·Monitor	**Grow**	**Grow**
MEDIUM	**Don't grow unless strong Botanic Garden value** ·Contain ·Monitor ·Interpret	**Don't grow unless strong Botanic Garden value** ·Contain ·Monitor ·Interpret	**Grow provided clear need within collection** ·Contain ·Monitor ·Interpret	**Grow** ·Interpret
HIGH	**Don't grow** (unless for research under quarantine, with relevant authority approval)	**Remove** (unless for research, under quarantine, with relevant authority approval) ·Interpret	**Remove** · Interpret if on public view and retained for special reasons	**Remove** (unless strong Botanic Garden value) · Interpret if on public view and retained for special reasons

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Dissemination of findings

- Workshop to familiarise staff in the use of the WRAP software and to review recommendations regarding weedy species
- Presentation of findings at this year's BGANZ Inc. congress in Mackay

Thank you

- Drs John Virtue, David Cooke and Tim Reynolds of SA DWLBC
- John Sandham, Trevor Christensen
- RBG Melbourne and Cranbourne staff
- Garden Managers, Supervisors, Curators and gardeners, FBGA Growing Group
- And you …