PROJECT PHOENIX

REVEALED!

THE NATIONAL NATIVE NURSERY NETWORK

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Australian Government

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Across all of our Project Phoenix activities and actions we pay respect to the Traditional Owners and Custodians of the lands and waters on which we work. We honour the resilience and continuing connection to country, culture and community of all Aboriginal and Torres Strait Islander people across Australia. We recognise the decisions we make today will impact the lives of generations to come.

ACKNOWLEDGEMENTS

Greening Australia would like to acknowledge the hard work and dedication of the Project Phoenix Management Team: Samantha Craigie, Patricia Verden, Brian Ramsay, Irene Walker, Courtney Sullivan, Rowan Wood, Paul Della Libera, Kim Phillipponi and Ella Campen.

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INTRODUCTION

As part of the national response to the 2019–20 Black Summer bushfires, Greening Australia received $5 million in initial funding from the Federal Government for a strategic program to build and secure native seed and plant supply for landscape restoration, recovery and resilience in bushfire-affected areas and other vulnerable landscapes.

KG2 was commissioned to conduct a survey among general nurseries, council nurseries and Indigenous nurseries to understand the size of the native plant/seed market and to assess the following:

- Do you grow native plants for restoration from native seed?
- Do you collect or buy native seed for your nursery?
- How many plants do you produce annually?
- Could you produce more plants if there was greater demand?
- Can you access enough seed to meet the demand for native plant production?
- Do you routinely test or ask for seed testing data?
- How do you test seed (internal/external testing)?
- Have any of your staff undertaken native seed management training?
- Would you like to access native seed management training?
- Is this nursery owned or managed by a Traditional Owner Group?

The brief also included an investigation into native nurseries on farms. This was conducted separately to the nursery survey due to a different sampling base.

'Native seed represents growth, potential and hope, which is why Project Phoenix has an emphasis on practical action. We must ensure future bushfire recovery can be undertaken with the confidence of having a strong seed and native plant supply sector to support it.

This strategic project includes the planning and mobilisation of key activities in the native seed and plant sector, as well as the development of a self-sustaining, sector supporting Indigenous groups, regional communities and landholders.'

METHODOLOGY

KG2 owns and manages Australia's most comprehensive agriculture database and provided access for this survey to a full list of nurseries and councils as well as farmers to report on their native nurseries where applicable. Public data was used to supplement any gaps.

KG2 called 1,620 nursery enterprises (1,147 general nurseries, 345 councils and 128 Indigenous nurseries). From these, a report on the result of the calls has been provided to identify the reasons for being unable to contact them or, if contacted, why they were not eligible for the survey. For the native nurseries on farms, 738 farmers were called, resulting in conversations with 182 farmers. The sample was drawn from grain, cattle and mixed farming contacts on the KG2 database.

Eligibility to participate in the nursery or farmer survey took two forms. The first included those who had a nursery but did not grow native plants or produced native seed. These 92 nurseries and three farmers were only involved in the first section of the survey. The remaining 128 nurseries and six farmers were asked the full survey.

As well as establishing an overview of the market, the full survey provided feedback on the ten areas of interest to Project Phoenix outlined in the introduction. Nurseries were also asked if they would be willing to provide their details to provide future feedback to Project Phoenix.

All calls were made from KG2's in-house call centre using a CATI (computer assisted telephone interviews) system by trained, experienced interviewers. Being almost exclusively university agriculture graduate and post-graduate students, they have knowledge and understanding that enabled them to create a rapport with nurseries and farmers to probe their responses appropriately. Data analysis, outputs and reporting were all completed in-house at KG2.

NATIVE NURSERIES

Call report — Nurseries

KG2 placed 1,620 calls (1,147 general nurseries, 345 local government councils and 128 Indigenous nurseries). This was effectively a census of the potential market. The sample was sourced from KG2's database, supplemented by public data. The breakdown of the 1,620 calls is shown in **Table 1**, including the reasons for having not been contacted or why they had not participated.

The main reasons for non-participation were that 238 councils did not have a nursery, 235 calls went to an answering machine or was not answered, and 224 calls were to disconnected numbers. Among those spoken to but not surveyed, 195 were unable to be contacted for their scheduled call back time, 120 said they had no native plants or seed and were not intending to, and 110 were not interested.

TABLE 1. CALL REPORT BREAKDOWN

	ALL NURSERIES	NURSERIES	COUNCIL NURSERIES	INDIGENOUS NURSERIES
TOTAL RECORDS	**1,620**	**1,147**	**345**	**128**
SURVEY PARTICIPANTS				
Completed total survey	128	96	31	2
Soft complete (first section only)	91	88	0	3
SURVEY NON-PARTICIPANTS				
Council doesn't have nursery	238	0	211	27
Answering machine/No answer	235	173	16	46
Disconnected	224	192	17	15
Call back (rescheduled call not completed)	195	132	44	18
No native and not planning to build any	120	110	8	2
Not interested	110	102	5	3
Wrong nursery type for survey	81	80	1	0
Not or never was a nursery	66	62	2	2
Not applicable/does not qualify	28	23	2	3
Retired OR sold nursery	22	20	2	0
Don't do phone surveys/research	21	20	1	0
No one appropriate at this number	13	8	2	3
Respondent not manager/decision maker	11	8	3	0
No native but planning in future	10	9	1	0
Wrong number	10	7	0	3
No longer/leaving nursey business	9	8	1	0
Deaf/no English	4	1	3	0
Do not call again/remove from database	4	2	1	1

Market size estimate

Within the 1,620 starting sample, 613 nurseries were potentially eligible but were excluded as ineligible (e.g., council with no nursery, disconnected phone, no native plants or seeds, sold nursery/retired, etc.). By extrapolating the incidence of native nurseries to the total eligible number of contacts, we estimate there may be 176 native nurseries in total, 142 general nurseries, 31 council nurseries and 3 Indigenous nurseries.

This is a rough estimate of the market size, and the estimate of the Indigenous nurseries is the least reliable given the very small sample in the survey.

TABLE 2. MARKET SIZING ESTIMATE

	ALL NURSERIES	NURSERIES	COUNCIL NURSERIES	INDIGENOUS NURSERIES
TOTAL NURSERIES ON DATABASE	**1,620**	**1,147**	**345**	**128**
128 native nurseries as % total records	8%	9%	7%	2%
Nurseries involved in native plants/seed surveyed	**128**	**101**	**25**	**2**
Potentially eligible but not surveyed (excludes council without nursery, no native, not applicable, sold/retired, etc)	**613**	**462**	**76**	**74**
Potential total native nurseries missed in survey	48	41	6	1
Estimated market size (actual and potential)	**176**	**142**	**31**	**3**

Insights and recommendations

Please note that there are many small samples in this report, the results of which should be seen as indicative rather than definitive.

Participation or expansion in growing native plants or producing native seed

- This survey estimates that 8% of nurseries are involved in growing native plants or producing native seed.
- The incidence in the survey data is highest among general nurseries (9%) but lower for council (7%) and Indigenous (2%) nurseries.
- The feedback on the barriers to expanding a native nursery was varied but focused on available space, staffing/training and funding.

ACTION: The limited incidence of growing native plants or producing native seed suggests an opportunity to involve more nurseries in Project Phoenix. This is likely to require further in-depth analysis to identify ways to manage or increase demand, the areas or types of nursery most likely to participate, and communication of the benefits.

Staff native seed management training

- With around one third of respondents indicating staff had been exposed to some training, it is apparent that training is available in many places, although the low levels of training in WA, NT and TAS suggest it is not universally available or accessed.
- With 69% overall and 88% of councils keen to access training, there is a clear appetite and need for it.
- Trained staff was the second most mentioned barrier to expanding the native nursery. More and accessible training would be a benefit for both staff and nurseries.

ACTION: Investigate the availability of training options, communicate to producers, and investigate options for those in areas where it is currently not available.

Testing of native seed

- There was a very low level of seed testing done which may threaten quality.
- It is not clear if this is due to a lack of awareness, lack of available options or a perceived lack of need.

ACTION: The importance of best practice procedures and the benefits of testing need to be communicated and monitored.

Demand

- 56% overall said they can access enough native seed to meet demand.
- More than 7 in 10 would produce more native plants or seeds if there was more demand.
- This indicates a significant unmet demand, especially among general nurseries (38% were not meeting demand and 75% would produce more to meet an increase).

ACTION: The project should seek to understand where, why and what products the demand is not currently meeting.

Response to Project Phoenix

- While a small proportion of respondents, particularly in councils, were aware of the project prior to the survey, its value was well regarded among those who had heard of it.
- 97% of respondents were happy to provide their details for future contact about the project.

ACTION: There is enthusiasm for the project and increasing awareness of it and how nurseries can be involved should be a priority.

SURVEY DATA ANALYSIS

The first section of this report is the data collected from the 220 nursery owners/managers that KG2 was able to speak with. While only about half of these people were involved with native plants or seed and could continue with the rest of the survey, they provided valuable information and feedback.[1]

Overview

- Among the 220 contacts, 184 (84%) were general nurseries, 25 (11%) were council nurseries, 5 were seed producers (2%) and 5 were Indigenous nurseries (2%).
- 76% had less than 10 employees.
- 11% were owned and/or managed by Traditional Owners.
- Overall, 55% of nurseries surveyed grew native plants for seed. This included 100% of the council nurseries and 51% of general nurseries, but only 20% of the five Indigenous nurseries were growers/producers.
- 24% overall produced native seed for restoration, mostly among council nurseries (52%) and Indigenous nurseries (40%). Less than one in five general nurseries produced native seed.
- 92 nurseries who did not grow native plants or produce native seed were only involved in the first section of the survey.
- 77% of those who are not involved with native plants or seed said they have considered it.
- The main reasons for not having considered growing natives for restoration (if did not) were growing native plants were 'not our target market/business model', 'no space for it' and that they were a retail operation only.

Variations between nursery types and states

Note: Many small samples

Nurseries tended to be small in scale, have few staff, and were unlikely to be owned or managed by a Traditional Owner Group. Producing native seed for restoration was done considerably less than growing plants (24% versus 55%) but producing seed was done by a large 60% of the small sample in the NT. Indigenous nurseries were the only type to be more likely to produce native seed than grow native plants.

[1] Bolding identifies that there are statistically significantly differences to other nursery types or state — affected by the result but also by the reliability of the sample size. Where a sample is too small to say a result is statistically significant, it is likely to be indicative.

Council nurseries had a larger proportion than general or Indigenous nurseries who:

- grew native plants or produced native seed and
- had fewer than five employees.

General nurseries had a larger proportion than others who:

- did not grow native plants or produce native seed
- reported 'not our target market', being a retail nursery, not wanting to compete in that market, and not enough demand as reasons for not considering growing native plants or producing native seed.

Indigenous nurseries had a notably larger proportion who:

- had more than 100 employees
- were owned or managed by a Traditional Owner Group
- have considered growing native plants or producing native seed if not already doing so, but who said they were not skilled/equipped to consider growing or producing native plants or seed, and
- produce native seed rather than growing native plants.

There were some **variations between states** (again noting many small samples).

For example:

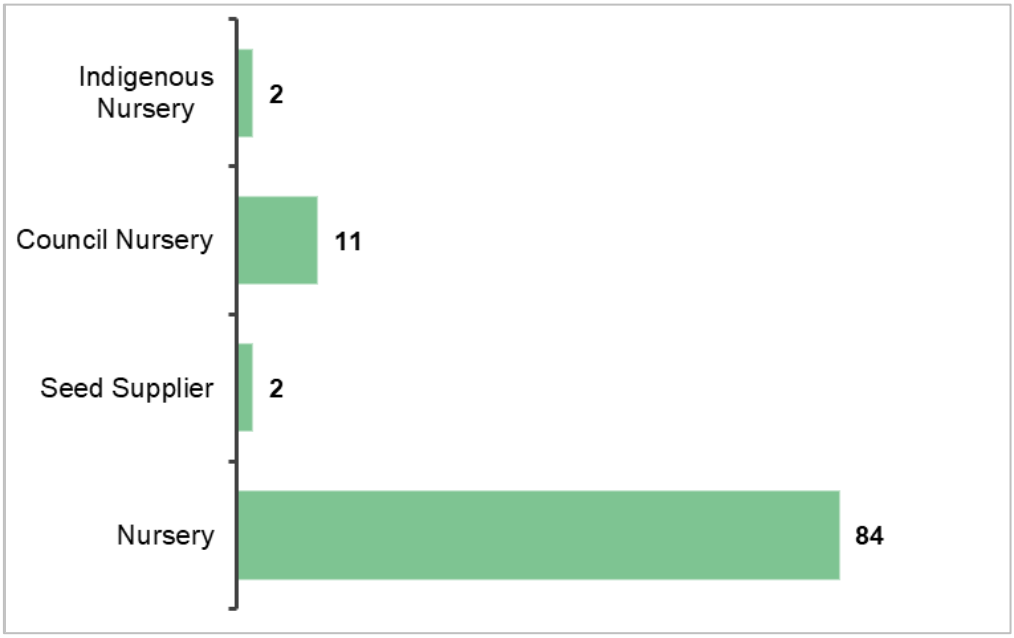
- While 84% of all respondents worked in a general nursery, they were most likely to be found in NSW (88% of the state sample), and least likely to be in WA (67%) and NT (60%).
- Respondents from council nurseries made up just 9% of NSW and VIC respondents but accounted for 40% in NT and 13% to 17% in other states.
- Seventeen per cent of respondents in WA were from Indigenous nurseries compared with none in NSW, SA, NT or TAS.
- Respondents in NSW (62%), WA (67%) and NT (80%) were the most likely to grow native plants for restoration.
- While being too small/not having enough room was the second most mentioned reason not to consider growing native plants or produce native seed, it was relatively infrequently mentioned in VIC or TAS. Being too busy/not having time was mentioned by 16%–17% in NSW and WA while 42% in NSW and 40% in VIC said it was not their target market, 40% of VIC respondents did not want to compete in this market and 23% in QLD said there was not enough demand.

Growing native plants and producing native seed for restoration was highest in NT (80% and 60%) and lowest in TAS where only 33% grew native plants and only 17% produced native seed.

Nurseries type

Among the 220 contacts, 184 (84%) were general nurseries, 25 (11%) were council nurseries, five were seed producers (2%) and five were Indigenous nurseries (2%). General nurseries were most likely to be found in NSW (88% of the sample), and least likely to be in WA (67%), while 40% of respondents in the NT were from council nurseries. See **Figure 1**.

FIGURE 1. TYPE OF NURSERY (%) N=220



		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	220	190	25	5	81	54	40	18	16	5	6
Nursery	84	**97**	**0**	**0**	**88**	85	83	**67**	88	60	83
Seed Supplier	2	3	0	0	2	4	3	0	0	0	0
Council Nursery	11	**0**	**100**	**0**	9	9	13	17	13	40	17
Indigenous Nursery	2	**0**	**0**	**100**	**0**	**2**	3	**17**	0	0	0
Nursery On Farm	0	1	0	0	1	0	0	0	0	0	0

State distribution

The sample of 220 who completed the first section of the survey was distributed by state as shown below. As general nurseries made up 84% of the sample, they had the highest representation in each state but it varied from 67% of WA to 88% of NSW and SA. Council nurseries represented 11% of the sample, rising to 17% in WA and 40% in NT. The small sample of Indigenous nurseries was spread across VIC, QLD (1 each) and WA (3). (See **Table 3** below)

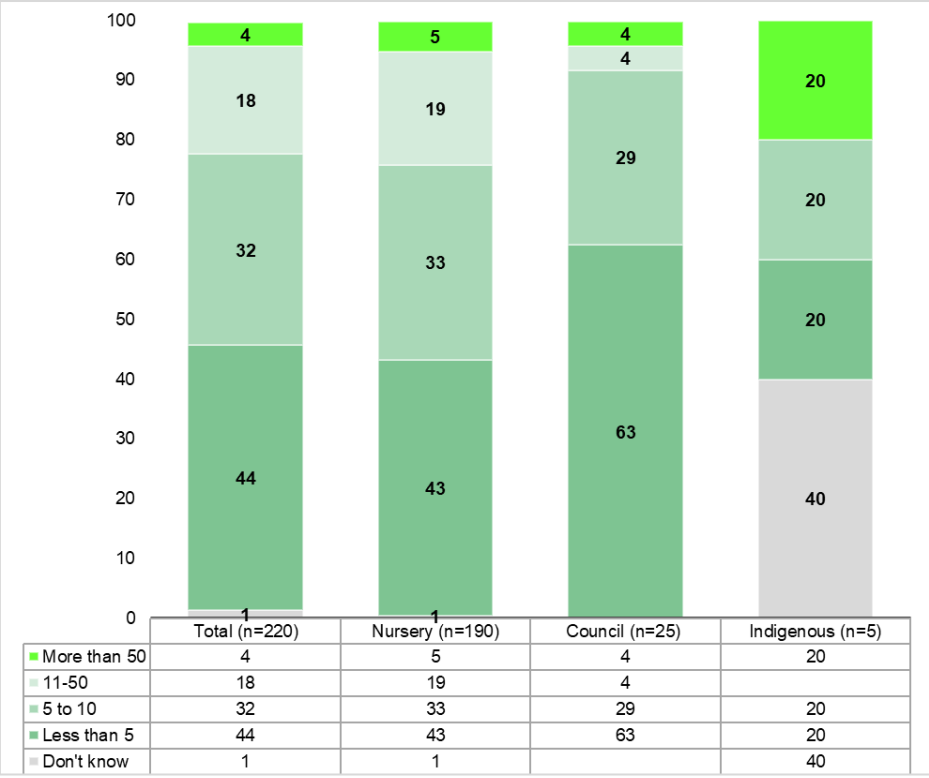
TABLE 3. STATE DISTRIBUTION

	ALL NURERIES BY STATE								NURSERY TYPE/FARM STATE																
									NURSERY							COUNCIL NURSERY							INDIGENOUS NURSERY		
	TOTAL	NSW	VIC	QLD	WA	SA	NT	TAS	NSW	VIC	QLD	WA	SA	NT	TAS	NSW	VIC	QLD	WA	SA	NT	TAS	VIC	QLD	WA
Nursery type																									
Sample Size	220	81	54	40	18	16	5	6	74	48	34	12	14	3	5	7	5	5	3	2	2	1	1	1	3
General nursery																									
Count	184	**71**	46	33	**12**	14	3	5	**71**	**46**	**33**	**12**	**14**	**3**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	0	**0**
Column %	84	**88**	85	83	**67**	88	60	83	**96**	**96**	**97**	**100**	**100**	**100**	**100**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	0	**0**
Seed supplier																									
Count	5	2	2	1	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Column %	2	2	4	3	0	0	0	0	3	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Council nursery																									
Count	25	7	5	5	3	2	2	1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**5**	**5**	**3**	**2**	**2**	**1**	0	0	**0**
Column %	11	9	9	13	17	13	40	17	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	0	0	**0**
Indigenous nursery																									
Count	5	**0**	**1**	1	**3**	0	0	0	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	**0**	**0**	0	0	0	0	**1**	**1**	**3**
Column %	2	**0**	**2**	3	**17**	0	0	0	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	**0**	**0**	0	0	0	0	**100**	**100**	**100**
Nursery on farm																									
Count	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Column %	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Question 1 — Number of employees

- A substantial 44% of respondents worked in nurseries with less than 5 employees. This rose to 63% among council nurseries.
- Only 22% overall and only 8% of council nurseries employed more than 10 people.
- 40% of the small sample of Indigenous nurseries did not know how many, while 20% reported that more than 100 were employed.

FIGURE 2. NUMBER OF EMPLOYEES (%) N=219



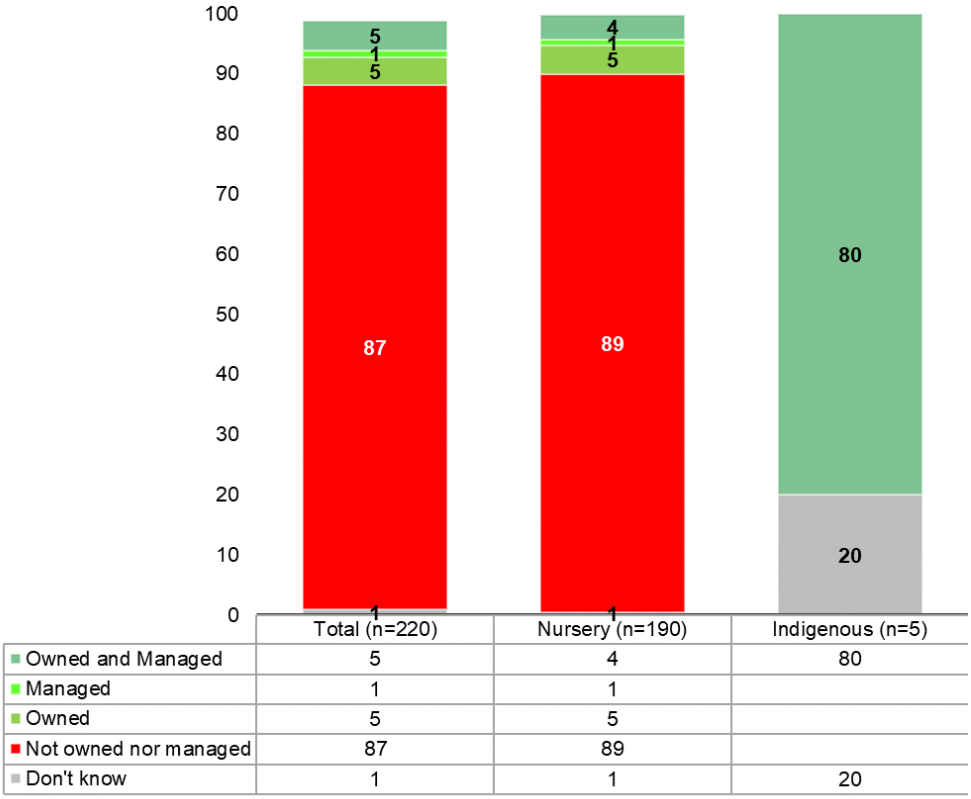
	Total (n=220)	Nursery (n=190)	Council (n=25)	Indigenous (n=5)
More than 50	4	5	4	20
11-50	18	19	4	
5 to 10	32	33	29	20
Less than 5	44	43	63	20
Don't know	1	1		40

		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	219	190	24	5	81	54	40	17	16	5	6
Less than 5	44	43	63	20	**47**	**41**	**58**	**6**	**44**	**40**	**67**
5 to 10	32	33	29	20	32	35	25	41	38	20	17
11 to 20	10	11	0	0	10	7	5	24	13	0	17
21 to 50	8	8	4	0	9	7	3	18	6	20	0
51 to 75	2	2	4	0	**0**	2	**8**	0	0	20	0
76 to 100	0	1	0	0	0	2	0	0	0	0	0
More than 100	2	2	0	20	2	2	3	6	0	0	0
Don't know	1	**1**	**0**	**40**	0	4	0	6	0	0	0

Question 2 — Ownership or management by a Traditional Owner Group

- 80% of the Indigenous nurseries were owned or managed by a Traditional Owner Group, compared with only 13% overall, 11% of general nurseries and no council nurseries.
- 27% of general nurseries in WA were owned or managed by a Traditional Owner Group, more than for any other state.

FIGURE 3. OWNED OR MANAGED BY TRADITIONAL OWNER GROUP (%) N=195



	Total (n=220)	Nursery (n=190)	Indigenous (n=5)
Owned and Managed	5	4	80
Managed	1	1	
Owned	5	5	
Not owned nor managed	87	89	
Don't know	1	1	20

		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	195	190	–	5	74	49	35	15	14	3	5
Owned	5	5	–	0	7	4	0	7	7	0	0
Managed	1	1	–	0	0	2	0	0	7	0	0
Owned and managed	6	**4**	–	**80**	5	4	9	20	0	0	0
Neither owned nor managed	87	**89**	–	**0**	88	90	86	73	86	100	100

Question 3 — Grow native plants or native seed for restoration

- Overall, 55% of nurseries surveyed grew native plants for seed, including 100% of council nurseries, 51% of general nurseries and 20% of the five Indigenous nurseries.
- When asked if they produced native seed for restoration, 24% overall did, mostly among general nurseries (78%). About half of council nurseries and 60% of Indigenous nurseries produced seed. Less than one in five general nurseries produced seed.
- NSW, WA and NT had the largest proportion who grew native plants for restoration (62%, 67% and 80% respectively) while QLD, WA and NT (25%, 29% and 60%) were most likely to produce seed.

FIGURE 4A. GROW NATIVE PLANTS FOR RESTORATION (%) N=220

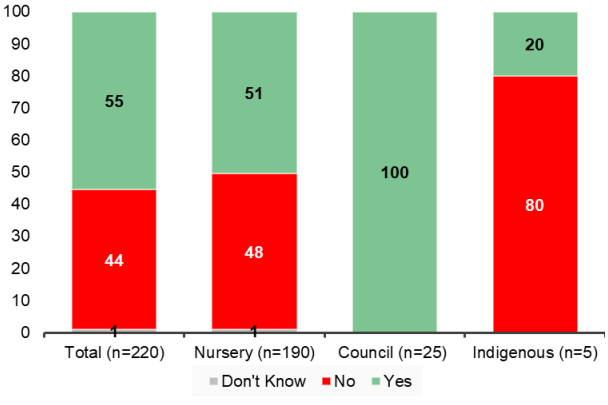
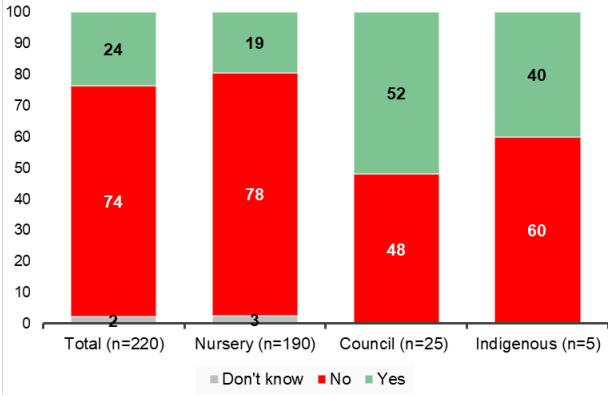


FIGURE 4B. PRODUCE NATIVE SEED FOR RESTORATION (%) N=220

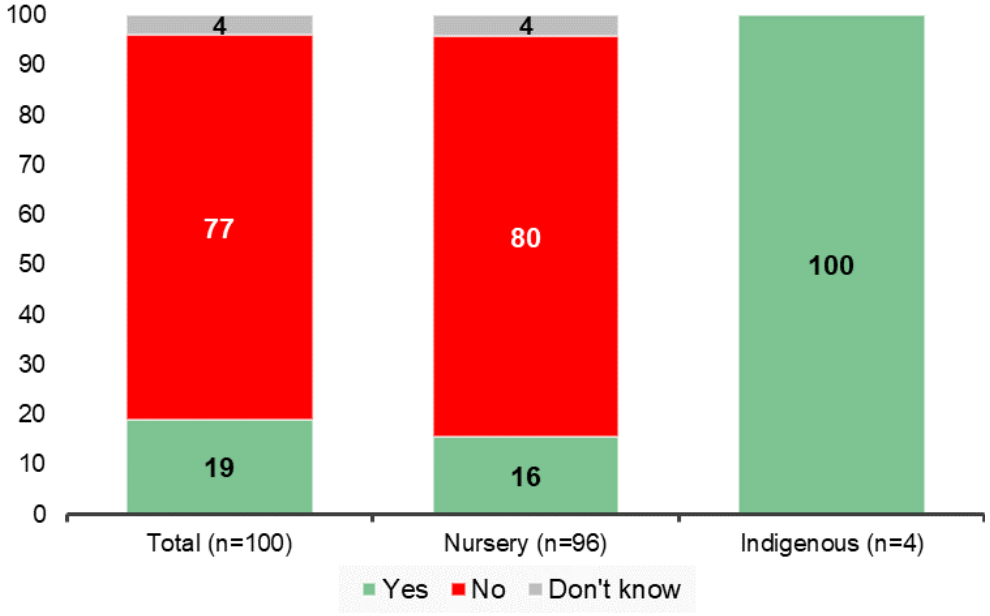


		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
GROW NATIVE PLANTS											
Sample size	220	190	25	5	81	54	40	18	16	5	6
Yes	55	**51**	**100**	**20**	62	54	45	67	44	80	33
No	44	**48**	**0**	**80**	37	46	53	33	56	20	67
Don't know	1	1	0	0	1	0	3	0	0	0	0
PRODUCE NATIVE SEED											
Sample size	216	186	25	5	78	54	40	17	16	5	6
Yes	24	**19**	**52**	40	23	20	25	29	19	60	17
No	74	**78**	**48**	60	73	78	73	71	81	40	83
Don't know	2	3	0	0	4	2	3	0	0	0	0

Question 3A — Considered growing native plants for restoration

- Most general nurseries (77%) who did not grow native plants for restoration said they had not considered growing them.
- All of the Indigenous nurseries who were not growing native plants for restoration said they had considered it.
- Within the small state samples, those in WA, NT and NSW were more likely than others to have considered growing native plants.

FIGURE 5. HAS NURSERY CONSIDERED GROWING NATIVE PLANTS FOR RESTORATION? (%) N=100

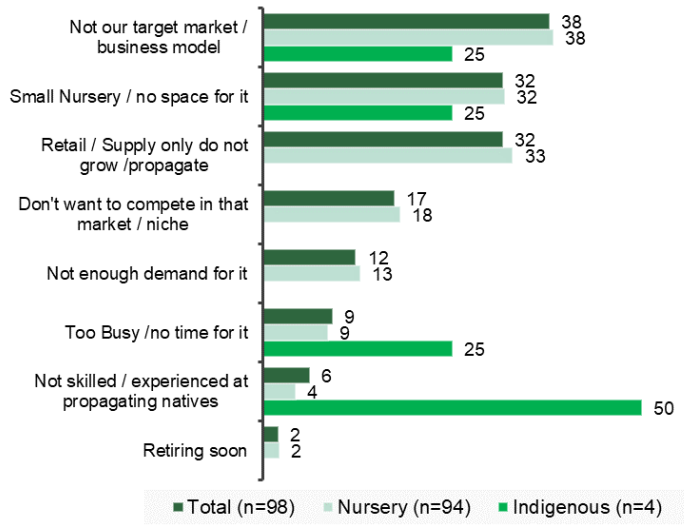


		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	100	96	–	4	31	27	22	6	9	1	4
Yes	19	**16**	–	**100**	23	15	14	50	11	100	0
No	77	**80**	–	**0**	71	81	82	50	89	0	100
Don't know	4	4	–	0	6	4	5	0	0	0	0

Question 3B — Reasons for having not considered growing native plants for restoration

- The main reasons given for not having considered growing native plants were 'not our target market/business model', 'no space for it' and that they were a retail operation only.
- Half of the small number of Indigenous nurseries said they were not skilled or experienced at propagating natives.
- Not being enough demand was only mentioned by 12–13% but was reported by 23% in QLD, suggesting that there is a recognised market.
- Being a retailer only was mostly cited by those in SA (44%) and QLD (41%), while not having the space was a less mentioned reason by respondents in VIC (24%) and TAS (25%).
- 40% in VIC did not want to compete in this market and the same proportion said this was not their target market or business model.

FIGURE 6. WHY NOT CONSIDERED GROWING NATIVE PLANTS FOR RESTORATION (%) N=98



	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	98	94	–	4	31	25	22	6	9	1	4
Not our target market/ business model	38	38	–	25	42	40	32	50	33	0	25
Retail/Supply only do not grow/propagate	32	33	–	0	32	24	41	17	44	0	25
Small Nursery/no space for it	32	32	–	25	32	24	32	50	33	100	25
Don't want to compete in that market/niche	17	18	–	0	10	40	14	0	11	0	0
Not enough demand for it	12	13	–	0	10	12	23	0	0	0	25
Too busy/no time for it	9	9	–	25	16	8	0	17	11	0	0
Not skilled/experienced at propagating natives	6	4	–	50	6	0	0	33	0	100	25
Retiring soon	2	2	–	0	6	0	0	0	0	0	0

NURSERIES — SEED AND PLANTS FOR RESTORATION

This section reports the data collected from nurseries that either grew native plants or produced native seed for restoration.

Overview

- Among the 128 nurseries who grew native plants for restoration, 41% overall grew between 10,000 and 25,000 plants annually, with 49% growing at least 25,000.
- Council nurseries grew the largest number of plants with 56% growing more than 25,000 and only 4% less than 10,000.
- Among nurseries that produced native seed for restoration, 59% produced more than 50kgs. Councils averaged the largest weight of native seed, with 77% producing more than 50kgs.
- 96% of all respondent nurseries bought or collected native seed, with 50% both buying and collecting native seed, including 56% of general nurseries and the two Indigenous nurseries.

Only 28% of council nurseries both bought and collected, with 64% only collecting seed. Only buying seed was highest in NSW (15%) and QLD (16%). The highest proportion who only collected was in QLD (47%), WA (42%) and SA (43%).

- 56% overall said they can access enough seed to meet demand. However, 34% said they could not, including 38% in general nurseries, indicating that there is untapped demand in the market. Access to enough seed was less of a concern for council nurseries where 76% said they could meet demand but it varied by state, from 42% of those VIC to 86% of SA and 83% in WA.
- Among the nine nurseries who were owned or managed by a Traditional Owner Group, the two factors given the strongest importance rating of 9 or 10 out of 10 were what's best for the environment (78%) and being able to meet demand (66%).

The two factors given the most importance ratings of less than 7 were the financial benefit (44%) and what's best for the community (55%).

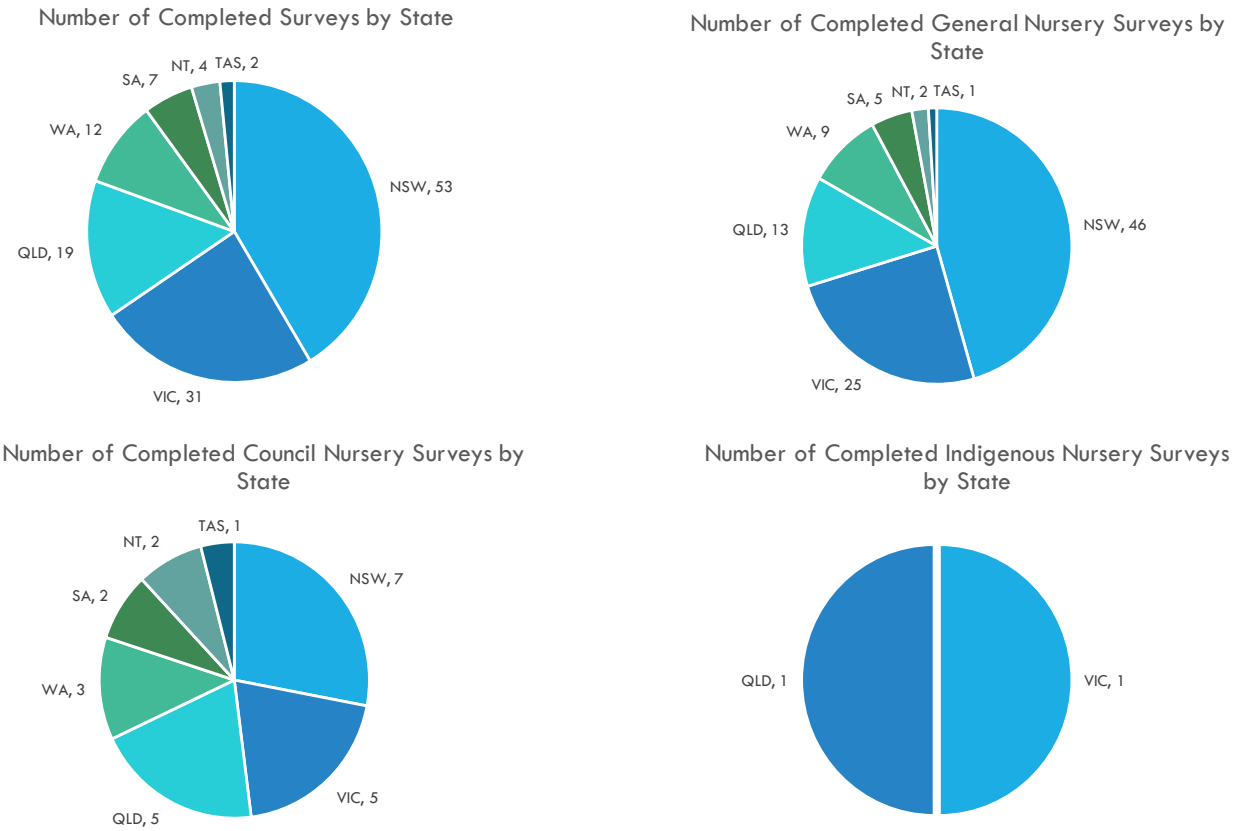
- 71% of respondents said they would produce more native plants/seed if there was greater demand. This was particularly true among general nurseries (75%), Indigenous nurseries (100%) and in QLD (84%) while only 52% of council nurseries would.
- Only 17% of respondents regularly test their seed or ask for seed testing and 71% rarely or never do. Councils were the least likely to test their seed with only 8% at least occasionally doing so, and 64% never testing. A very high 58% of those in QLD and 57% in NSW never test their seed or ask for seed testing.

- Barriers to expansion were dominated by 'space' (30%), training/staffing (21%) and 'no funding' (23%), with these barriers being more reported by council nurseries (32%, 28% and 36% respectively) than general nurseries (30%, 25% and 19% respectively). A 'lack of demand' was mentioned by no more than 17%, and less than 10% mentioned a 'lack of public awareness'. The availability of seed or stock was a barrier for 20% of councils.
- A variety of opportunities by expanding the native nursery were mentioned, indicating no clear position on the benefits of expansion. *'To maintain or improve the environment or biodiversity'* was the most mentioned (34%), followed by 'increase sales' (18%).
- Only 34% had undertaken seed management training of staff. While 32% of councils report staff had undertaken training (lower than general nurseries or Indigenous nurseries), 12% in councils did not know. Training was highest in VIC (48%).
- A notable 69% of all respondents would like access to seed management training, and interest was highest among council nurseries (88%).
- Only 23% had heard of Project Phoenix before today. If they had, 45% rated the value of the program at 9 or 10/10 but 21% did not know.
- 97% of respondents agreed to provide their details to Project Phoenix for future communication and feedback.

State distribution

The charts below show the state by state distribution for the 128 respondents who qualified and completed the full survey. NSW (53), VIC (31) and QLD (19) accounted for 103 of the 128 full surveys.

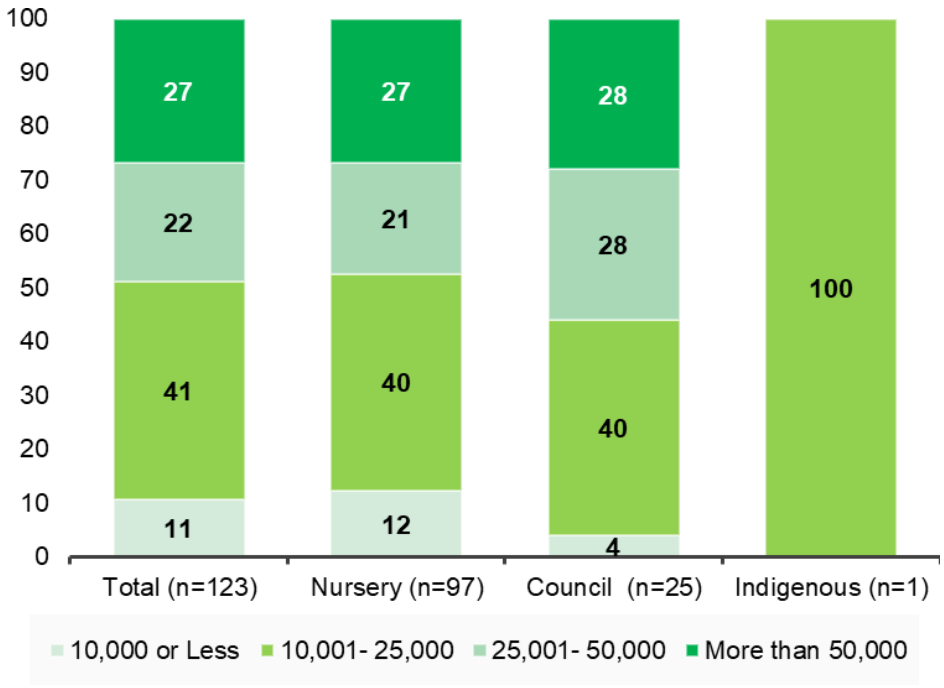
FIGURE 7. STATE DISTRIBUTION



Question 4 — Number of native plants for restoration produced annually

- Among those who grew native plants for restoration, 41% overall grew between 10,000 and 25,000 plants with 49% growing more than 25,000.
- Council nurseries grew the largest number of plants, with 56% growing more than 25,000 and only 4% less than 10,000.
- Both Indigenous nurseries grew 10,000–25,000 plants a year.
- 72% of SA respondents grew less than 25,000 plants, compared with 53% overall, 39% in QLD and 45% in VIC.
- 38% in VIC grew more than 50,000 plants, a larger percentage than in other states.

FIGURE 8. NUMBER OF NATIVE PLANTS GROWN FOR RESTORATION (%) N=123

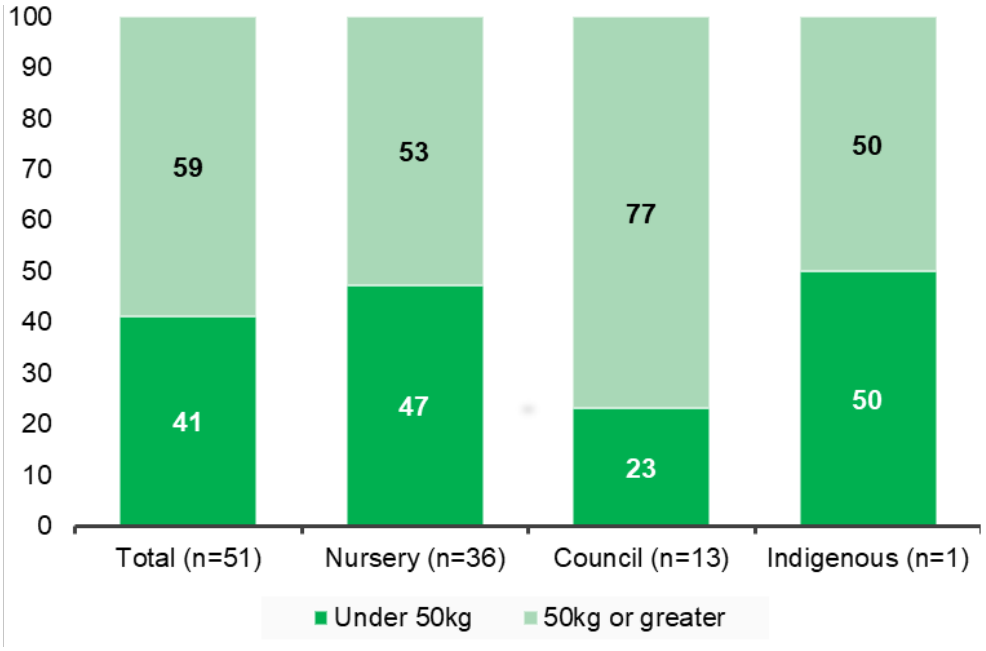


		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	123	97	25	1	51	29	18	12	7	4	2
Under 10,001	11	12	4	0	12	14	6	0	29	0	0
10,001–25,000	41	40	40	100	41	**31**	33	**67**	43	50	50
25,001– 50,000	22	21	28	0	22	17	39	17	14	25	0
More than 50,000	27	27	28	0	25	38	22	17	14	25	50

Question 4A — Kg of native seed for restoration produced annually

- Among the 51 nurseries that produced native seed for restoration, 59% grew more than 50kgs.
- Councils produced the largest weight of native seed, with 77% producing more than 50kgs.
- Producing in excess of 50kgs was highest in NSW (67%) and WA (60%) and lowest in NT (33%) and VIC (45%).

FIGURE 9. KG OF NATIVE SEED PRODUCED FOR RESTORATION (%) N=51



	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	51	36	13	2	18	11	10	5	3	3	1
Under 50kg	41	47	23	50	33	55	50	40	0	67	0
50kg or greater	59	53	77	50	67	45	50	60	100	33	100

Question 5 — Collect or buy native seed for nursery

- 96% of respondents buy and/or collect native seed.
- 50% of all nurseries both buy and collect, rising to 56% among general nurseries but was low (28%) among council nurseries, and nil for Indigenous nurseries.
- 34% only collect seed, but this was the case for only 26% of general nurseries, and was much higher among council nurseries (64%) and Indigenous nurseries (100%) than general nurseries (76%).
- Only buying seed was done by just 12%, and was highest in NSW (15%) and QLD (16%).
- The highest proportion who only collected seed was in QLD (47%), WA (42%) and SA (43%).
- Buying and collecting was lowest among those in QLD (37%) and highest in VIC (78%), NT (75%) and SA (57%).

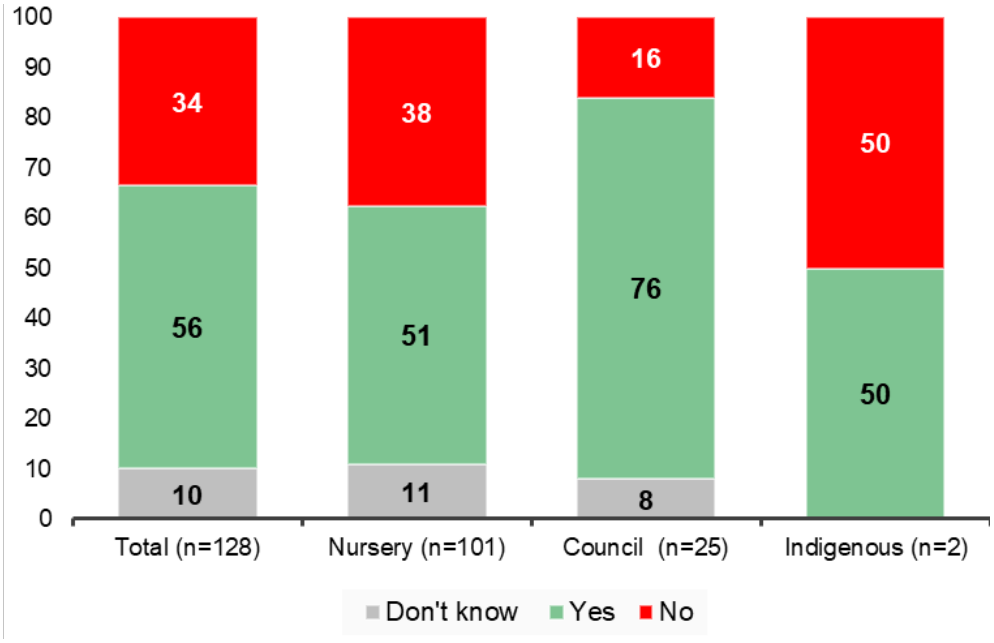
FIGURE 10. BUY OR COLLECT NATIVE SEE FOR NURSERY (%) N=128

	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Buy only	12	**15**	**0**	0	15	10	16	8	0	0	0
Collect only	34	**26**	**64**	100	30	29	47	42	43	25	50
Buy and collect	50	**56**	**28**	0	47	58	37	50	57	75	50
Neither buy nor collect	4	3	8	0	8	3	0	0	0	0	0

Question 6 — Can access enough seed to meet demand for native plants for restoration

- While 56% overall said they can access enough seed to meet demand, 34% said they could not, indicating that there is untapped demand in the market.
- Access to enough seed was less of a concern for council nurseries where 76% said they could meet demand and only 16% said they could not.
- Access to enough seed varied by state, from 42% of those in VIC to 86% of SA and 83% in WA.

FIGURE 11. CAN ACCESS ENOUGH SEED TO MEET DEMAND FOR NATIVE PLANTS FOR RESTORATION (%) N=128



	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	56	**51**	**76**	50	51	**42**	68	**83**	86	50	50
No	34	38	16	50	36	39	32	17	14	50	50
Don't know	10	11	8	0	13	19	0	0	0	0	0

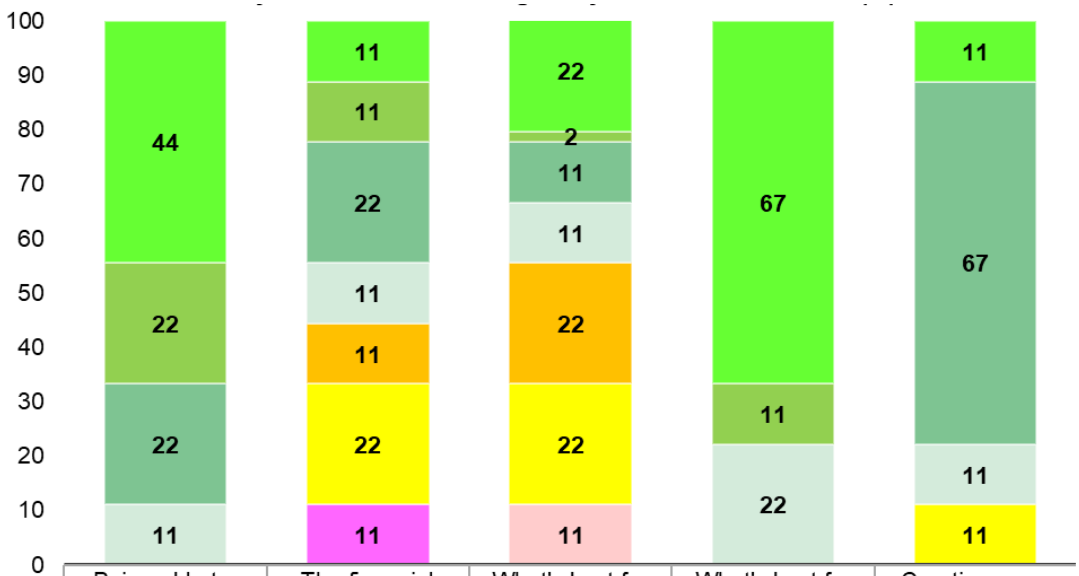
Question 7 — Importance of factors when making decisions to expand native nursery

(only asked if owned or managed by Traditional Owner Group)

Note: very small sample

- The survey asked respondents in nurseries owned or managed by a Traditional Owner Group to rate the importance of factors when considering expansion.
- Two factors were given the strongest rating importance of 9 or 10 out of 10 — what's best for the environment (78%) and being able to meet demand (66%).
- The two factors given the most importance ratings of less than 7/10 were the financial benefit (44%) and what's best for the community (55%).
- Financial benefit was the only factor to attract any ratings of less than 4, with 11% rating its importance at 3/10.
- Creating more jobs mostly attracted an importance rating of 8 out of 10, but only 11% rated it more highly.

FIGURE 12. IMPORTANCE OF FACTORS WHEN CONSIDERING EXPANSION OF NATIVE NURSERY IF OWNED OR MANAGED BY TRADITIONAL OWNER (%) N=9

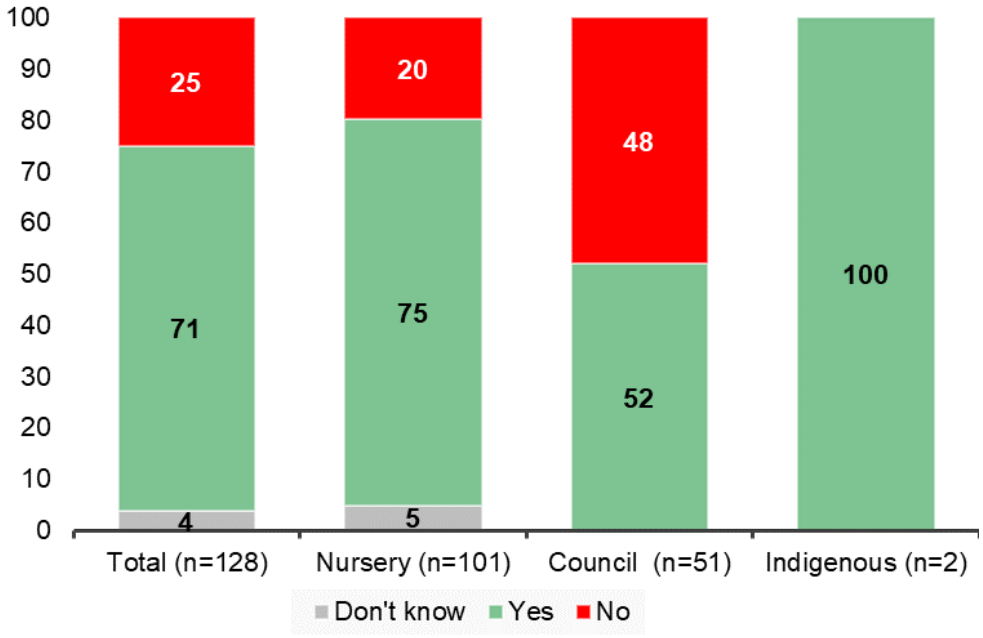


	Being able to meet demand	The financial benefit	What's best for the community	What's best for the environment	Creating more jobs
10	44	11	22	67	11
9	22	11	2	11	
8	22	22	11		67
7	11	11	11	22	11
6		11	22		
5		22	22		11
4			11		
3		11			
2					
1					

Question 8 — Would produce more native plants or seed if demand was greater

- 71% of respondents said they would produce more native plants/seed if there was greater demand.
- This was particularly true among general nurseries (75%) and Indigenous nurseries (100%) while only 52% of council nurseries said they would.
- Agreement that they would produce more if there was more demand was particularly high in QLD (84%) but low in WA (33%) and neither of the respondents in TAS would produce more.

FIGURE 12. WOULD PRODUCE MORE NATIVE PLANTS OR SEED IF DEMAND WAS GREATER (%) N=128

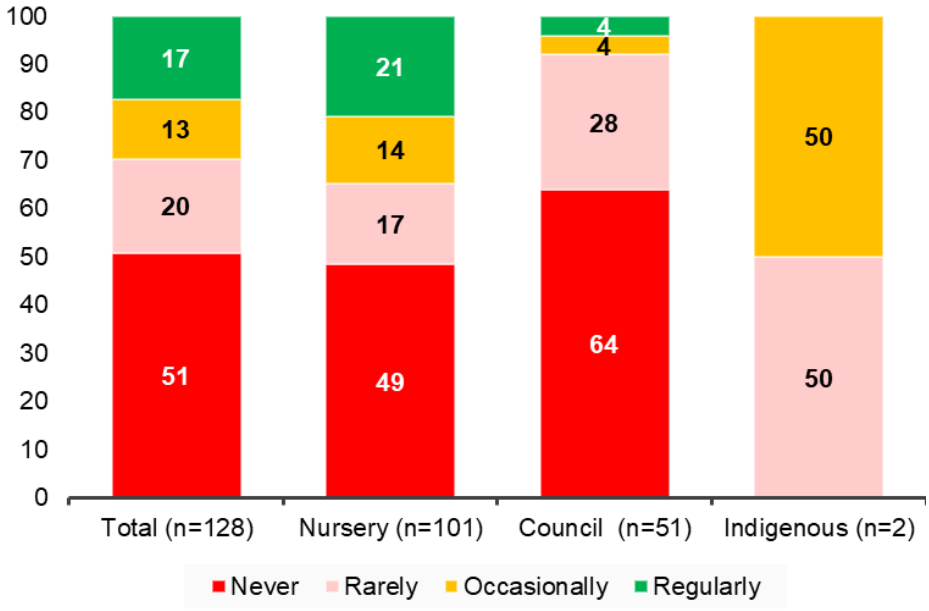


	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	71	**75**	**52**	100	**75**	**74**	**84**	**33**	71	75	0
No	25	**20**	**48**	0	**21**	**19**	**16**	**58**	29	25	100
Don't know	4	5	0	0	4	6	0	8	0	0	0

Question 9 — How often test or ask for testing of seed

- Only 17% of respondents regularly test their seed or ask for seed testing, and 71% rarely or never do.
- Councils were the least likely to test their seed with only 8% at least occasionally doing so, and 64% never testing and only 8% testing more often than 'rarely'.
- A very high 58% of those in QLD and 57% in NSW never test their seed or ask for seed testing.
- Those in SA were the most likely to ever test with only 14% never testing. However, they also had the highest incidence (43%) who 'rarely' tested.

FIGURE 13. HOW OFTEN TEST OR ASK FOR TESTING OF SEED (%) N=128



	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Regularly	17	21	4	0	13	19	16	25	14	25	50
Occasionally	13	14	4	50	9	10	5	33	29	25	0
Rarely	20	17	28	50	21	19	21	8	43	0	0
Never	51	49	64	0	**57**	52	58	33	**14**	50	50

Question 10 — Main barriers to expanding native nursery

- Barriers to expansion were dominated by 'space' (30%), staffing/trained staff (25%) and 'no funding' (23%), with these barriers being most reported by council nurseries (32%, 28% and 36% respectively) than general nurseries (30%, 25% and 19% respectively).
- Cost and lack of funding were an issue among the two Indigenous nurseries who also noted *'transport and logistics'*, *'seed/stock availability'*.
- A 'lack of demand' was mentioned by 16% (but higher in VIC, QLD and NT), and 7% mentioned a 'lack of public awareness'.
- VIC respondents had a high propensity to mention transport/logistics (23%) and 47% of QLD respondents mentioned staffing/training staff as the main barrier.
- Those in WA reported high levels of space (42%), and competition/profitability (33%) as barriers.

FIGURE 14. MAIN BARRIERS TO EXPANDING NATIVE NURSERY (%) N=128

		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Space	30	**30**	**32**	0	53	31	19	12	7	4	2
Staffing/trained staff	25	**25**	**28**	0	30	19	32	42	71	0	0
No funding	23	**19**	**36**	50	23	19	47	25	14	0	50
Competition/ profitability	16	19	8	0	23	23	21	17	14	25	100
Lack of demand	16	17	12	0	19	19	0	33	14	0	0
Seed/stock availability	15	**13**	**20**	50	13	23	21	8	0	25	0
Transport/logistics	14	14	12	50	15	10	16	17	0	75	0
Costs/overheads	13	14	4	50	15	23	11	8	0	0	0
Lack of public knowledge/awareness	7	8	4	0	19	6	16	0	14	0	0
Getting too old/retiring	5	7	0	0	4	16	5	0	14	0	0
Restrictions/ regulations to harvest seeds/stock	5	6	0	0	4	10	5	8	0	0	0
Government support	2	3	0	0	6	3	5	8	0	0	0
Lack of time to do it	2	3	0	0	4	0	0	0	0	25	0
Don't know	2	2	0	0	2	6	0	0	0	0	0

Question 11 — Main opportunities by expanding native nursery

- The suggested opportunities by expanding the native nursery were varied, with most respondents offering more than one opportunity.
- Most were mentioned by less than 20%, indicating no clear position on the benefits of expansion. However, *'to maintain or improve the environment or biodiversity'* was the most mentioned overall (34%) and *'increased seed/stock sales'* (18%).
- For general nurseries, there was an almost even distribution of responses covering *'increase in production capacity'*, *'engage with more environmental projects/contracts'*, *'improved sustainability of business'*, *'employ more staff'* and *'increased seed/stock sales'* (15–19% each).
- Councils were above average for reporting opportunities such as *'to maintain or improve the environment or biodiversity'* (48%), *'support the local community'* (28%) and '*employ more staff*' (24%).
- For the two Indigenous nurseries, the opportunities were '*to maintain or improve the environment or biodiversity'* (100%), *'support the local community'* (50%).

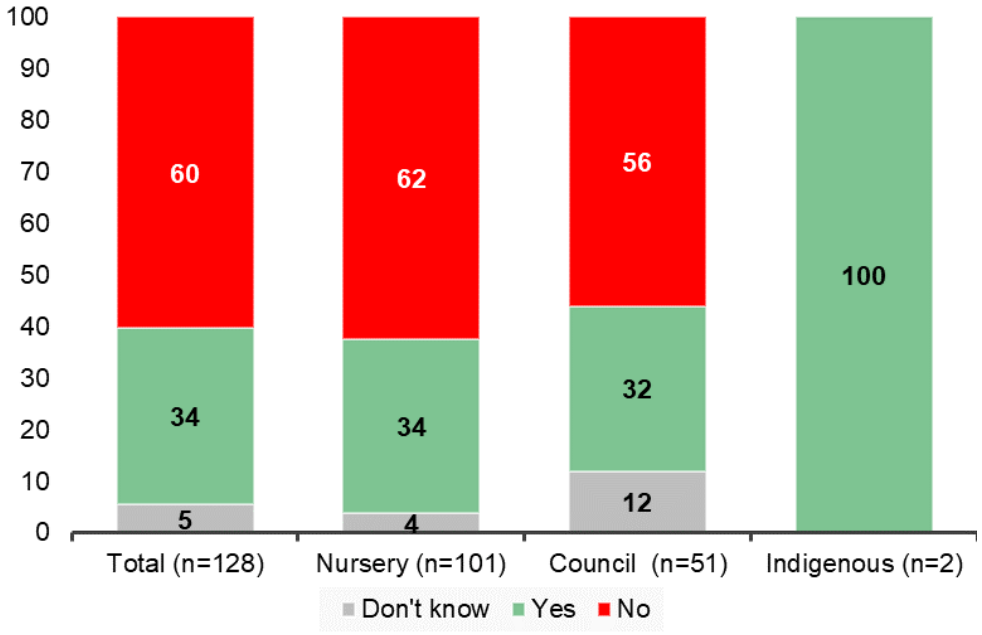
FIGURE 15. MAIN OPPORTUNITIES BY EXPANDING NATIVE NURSERY (%) N=128

		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
To maintain/improve the environment/ biodiversity	34	**29**	**48**	100	30	35	42	17	29	50	100
Increased seed/stock sales	18	18	20	0	23	16	11	25	0	25	0
Increase in production capacity	16	17	16	0	15	16	21	8	43	0	0
Engage with more environmental projects/ contracts	16	16	20	0	23	10	21	17	0	0	0
Improved sustainability of business	16	19	8	0	17	16	5	17	29	25	50
Employ more staff	16	**15**	**24**	0	9	16	32	25	29	0	0
Support local community	13	**9**	**28**	50	11	10	21	17	14	0	50
Access to more/better stock supplies	10	9	16	0	13	3	11	8	0	50	0
Increased revenue	9	11	0	0	8	10	5	8	29	0	0
Improved operational systems/quality control	7	8	4	0	8	6	11	0	0	25	0
Improve business profile/advertise	5	6	4	0	4	6	11	0	14	0	0
No benefits	5	6	4	0	6	10	0	0	14	0	0
Contribute to climate change amelioration	2	1	4	0	2	0	0	8	0	0	0
Don't know	6	8	0	0	6	10	0	17	0	0	0

Question 12 — Have staff undertaken native seed management training?

- Only 34% noted that staff in their nursery had undertaken seed management training.
- 32% of councils report staff had undertaken training (lower than general nurseries or Indigenous), but 12% in councils did not know.
- Training was highest in VIC (48%) and lowest in NT (25%), WA (25%) and TAS (nil).

FIGURE 16. HAVE STAFF UNDERTAKEN SEED MANAGEMENT TRAINING? (%) N=128

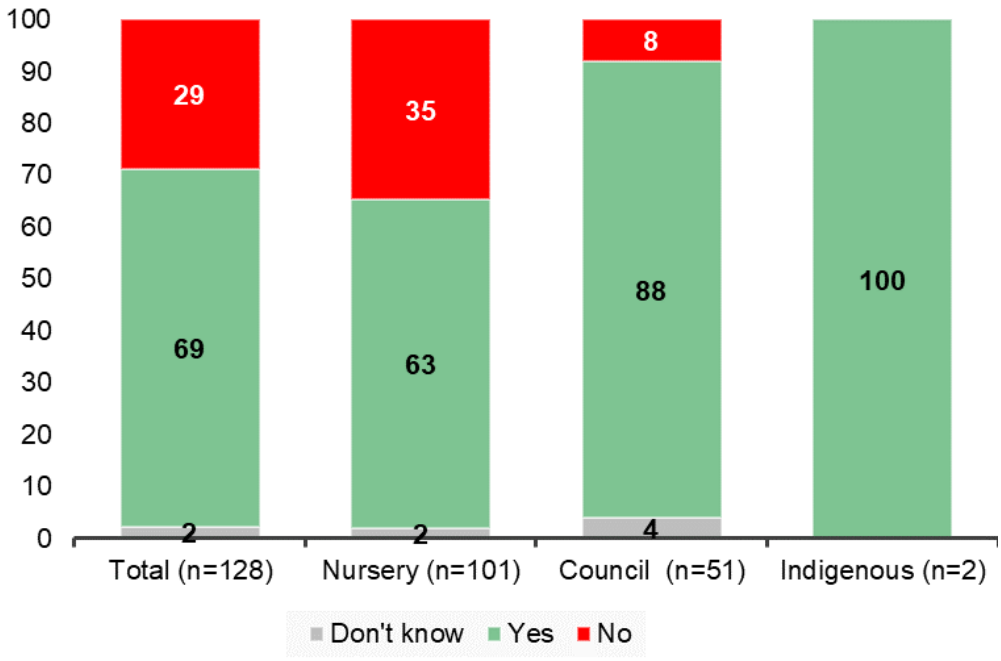


	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	34	34	32	100	30	48	37	25	29	75	0
No	60	62	56	0	60	52	58	75	57	25	100
Don't know	5	4	12	0	10	0	5	0	14	0	0

Question 13 — Would you like access to native seed training for staff?

- Given the low levels of staff training for native seed, it is not surprising that 69% overall would like access to training.
- 88% of council nurseries, who had the lowest level of training (32%), would like access.

FIGURE 17. WOULD LIKE ACCESS TO SEED MANAGEMENT TRAINING (%) N=128

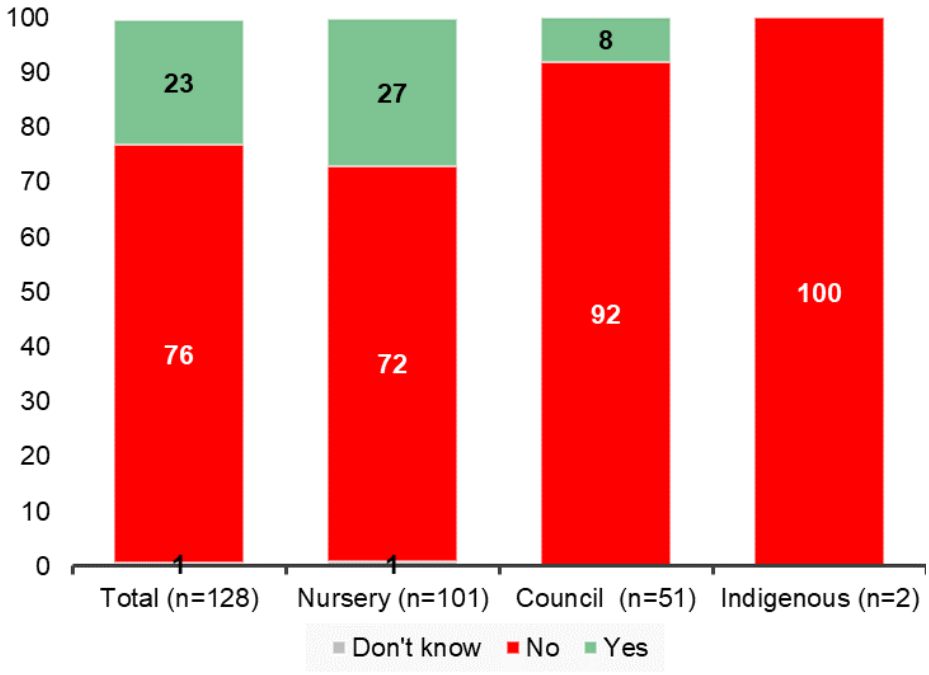


		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	69	**63**	**88**	100	68	**55**	**89**	67	71	100	50
No	29	**35**	**8**	0	32	39	11	25	29	0	50
Don't know	2	2	4	0	0	6	0	8	0	0	0

Question 14 — Heard of Project Phoenix before this survey

- Less than a quarter of respondents had heard of Project Phoenix prior to this survey.
- Recognition was highest among general nurseries (27%) but very low among council nurseries (8%) and neither of the Indigenous nurseries had heard of it.
- 42% of respondents in WA had heard of the project, with the next closest state for awareness was 26% in VIC.

FIGURE 18. HEARD OF PROJECT PHOENIX BEFORE TODAY (%) N=128



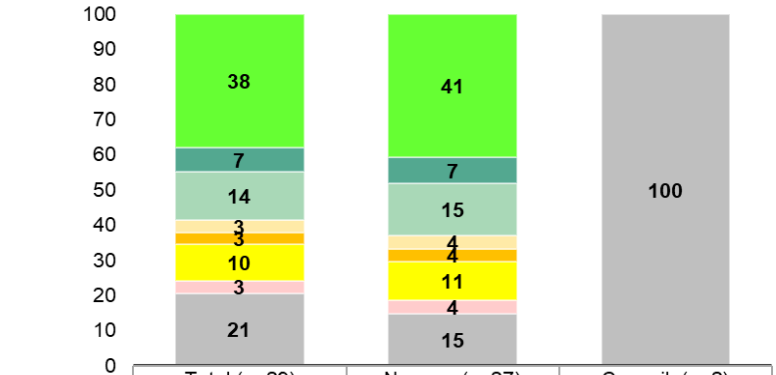
		NURSERY TYPE			STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	23	27	8	0	23	26	16	42	14	0	0
No	77	**72**	**92**	100	75	74	84	58	86	100	100
Don't know	1	1	0	0	2	0	0	0	0	0	0

Question 14A — Value of Project Phoenix (if aware) for ensuring regeneration of bushfire-affected vegetation or conservation of habitat

Note: small sample

- Those who had heard of Project Phoenix were asked to rate its value to ensure regeneration of vegetation or conservation of habitat.
- The dominant rating was 10/10, by 38%, and 59% rated the value at 8 or more out of 10.
- 21% overall could not give a rating.

FIGURE 19. VALUE OF PROJECT PHOENIX TO ENSURE REGENERATION AND CONSERVATION (%) N=29



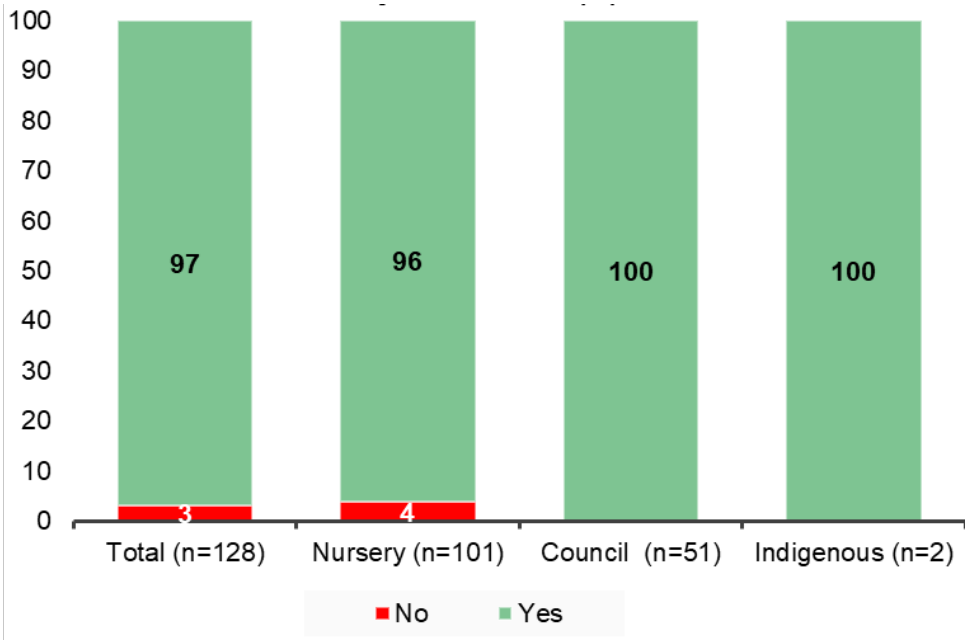
	Total (n=29)	Nursery (n=27)	Council (n=2)
10	38	41	
9	7	7	
8	14	15	
7	3	4	
6	3	4	
5	10	11	
3	3	4	
Don't know	21	15	100

	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	29	27	2	–	12	8	3	5	1	–	–
3	3	4	0	–	8	0	0	0	0	–	–
5	10	11	0	–	0	25	33	0	0	–	–
6	3	4	0	–	8	0	0	0	0	–	–
7	3	4	0	–	0	0	33	0	0	–	–
8	14	15	0	–	17	0	33	20	0	–	–
9	7	7	0	–	8	13	0	0	0	–	–
10 Very valuable	38	41	0	–	50	25	0	40	100	–	–
Don't know	21	**15**	**100**	–	8	38	0	40	0	–	–

Question 15 — Agreement to be contacted by Project Phoenix in the future

- A very healthy 97% of respondents to this survey said that they would agree to be contacted from time to time by Project Phoenix in the future when asked.
- The agreement varied little between groups other than one of the two Tasmanian contacts refusing to provide their details.
- KG2 has provided a file with details for these contacts as part of the deliverables for this survey.
- A map of these opt-ins is shown overleaf.

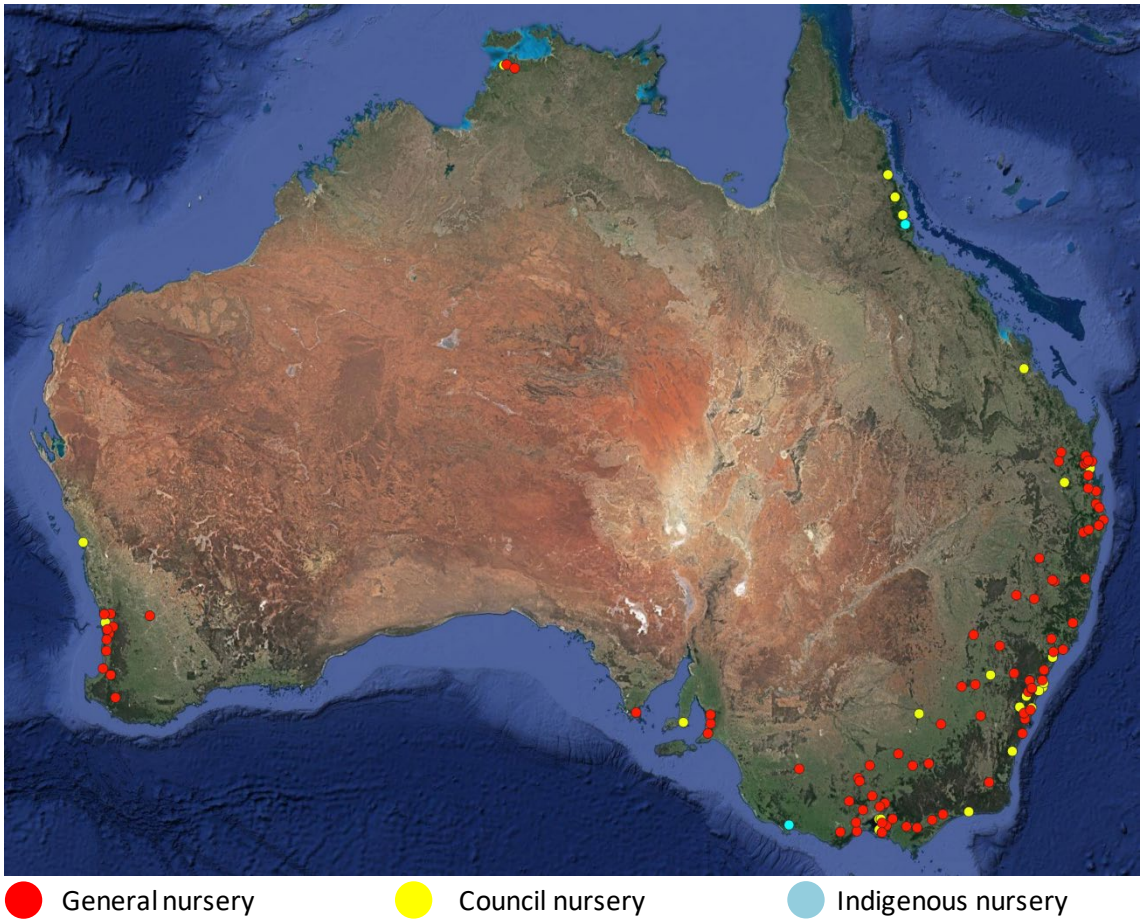
FIGURE 20. AGREE TO BE CONTACTED FROM TIME TO TIME BY PROJECT PHOENIX (%) N=128



	NURSERY TYPE				STATE						
	TOTAL	NURSERY	COUNCIL NURSERY	INDIGENOUS NURSERY	NSW	VIC	QLD	WA	SA	NT	TAS
Sample size	128	101	25	2	53	31	19	12	7	4	2
Yes	97	96	100	100	96	97	100	100	100	100	50
No	3	4	0	0	4	3	0	0	0	0	50

Greening Australia nursery 'opt-ins'

FIGURE 21. LOCATION OF NURSERIES



NATIVE NURSERIES ON FARMS

KG2 called 738 cattle (278), grain (361) or mixed (99) farmers to provide Project Phoenix with an assessment of the incidence of native nurseries on farms. This sample was drawn randomly from a database of 95,524 producers who met the criteria. These are shown on the map (**Figure 21**).

KG2 and Greening Australia were aware of the limited likelihood that farmers would have a native nursery or native regeneration capabilities. The 738 calls resulted in conversations with 182 producers (80 grain, 79 cattle and 23 mixed). From these 182 interactions, only six producers (3 cattle and 3 grain) had a native nursery that was not solely for their own use and we eligible to complete the full survey.

Three others completed only the first section as they had a nursery or regeneration capacity, but did not grow plants or supply seed for use beyond their property. These respondents were asked about their plans regarding native plants or seed in the future.

Overview

Less than 1% of the 182 farmers interviewed had some form of native nursery on their property that they used for native regeneration that wasn't for their own purposes.

Extrapolating this result to the 95,524 relevant prospects in the KG2 database indicates there are potentially 772 native nurseries on farms. However, the current situation appears to be that native nurseries are being used for regeneration on their own farm rather than supplying plants or seeds to any third party.

None of the mixed farms called were applicable for this study as they didn't have any nurseries on their properties or were not interested in the study. As a result, the data is based on cattle and grain producers although mixed farmers cannot be excluded from the potential for nurseries on farms.

As the sample of completed surveys is very small, the responses cannot be sensibly broken down in any way.

The three producers who only qualified for the first section of the survey had an interest in the native market but were not growing plants or producing native seed.

Those who completed the total study were split between grain specialists and cattle livestock producers.

Market size estimate

By extrapolating the incidence of native nurseries on farms to the total relevant farm community, we estimate there may be 772 native nurseries on farms, 108 on grain farms and 415 on cattle farms. The sample of 182 has a sample error of ±3–7% making this a reasonably reliable market size estimate. This is a rough estimate of the market size, and the estimate of the Indigenous nurseries is the least reliable given the very small sample in the survey.

TABLE 4. NATIVE NURSERIES ON FARM PROJECTION

	ALL FARMS	GRAIN	CATTLE	MIXED
TOTAL RECORDS CALLED	738	361	278	99
Farms involved in native plants/seed surveyed	6	3	3	0
Farms with nursery as % of total records	0.8%	0.8%	1.1%	0
Potential farm nurseries for 95,524 farms on database	772	108	415	0

Overview of completed farmer surveys

- Five of the six farmers noted that they had less than 5 employees on the property. The other farmer reported having 5–10 employees.
- One of the six farm properties was owned by a Traditional Owner Group.
- Five of the six farmers grew native plants from native seed for restoration, while two farmers produced native seed for restoration.
- The farmer that didn't grow natives but supplied seed noted that it was due to '*lack of time and operation complexity*'.
- The average annual amount of native plants grown for regeneration from farmer nurseries was 1,850 plants.
- Average kilograms of seed produced annually for native regeneration was 1kg.
- Of the six farmers collecting or buying their native seed supply, only one collected his seed, two neither bought nor collected their seed, and three only bought their seed.
- Five out of six farmers stated that 'Yes' they could access enough seed to meet their current demand for native plants for restoration, with the sixth not knowing.
- Four out of the six who completed the survey stated they would not produce more native plants or seed if there was a greater demand. The remaining two farmers noted that they would.
- None of the farmers did any form of seed testing for their natives.
- The main barriers to expanding the native nurseries on the farm property was lack of time (two of the six), followed by not enough returns/cost too high by three and being unable to expand by two.
- Four out of the six farmers didn't note any opportunities to expand the native nursery. The focus was primarily on their farms and not the nursery. Two noted regeneration of native areas on the property as their opportunity for expanding.
- None of the farmers undertook any native seed management training for themselves or staff.
- Two wanted to access native seed management training but four weren't interested or didn't know if they wanted to access it.
- None of the farmers had heard of Project Phoenix before today.

Insights and recommendations

Please note that this is a very small sample of just six and the results can only be indicative.

Limited involvement or interest

- This survey estimated that less than 1% of farms has a native nursery for restoration.
- If they do, the focus seems to be on regeneration of their own property rather than supplying a third party.
- Even if there was an increase in demand, the majority would not expand their native nursery.

> **ACTION: While the interest may be low, the volume of farms suggests a potential worth investing in. The estimate from this survey points to in excess of 750 potential nurseries on farms.**

Further investigation of perceptions and attitudes towards having a native nursery on a farm and the motivators to consider it is warranted.

Response to Project Phoenix

- No one in the sample was aware of Project Phoenix. With no knowledge, it is also unclear what value they may put on it.

> **ACTION: Engage with farmers to increase awareness, understanding of Project Phoenix and the value of native nurseries on farms.**