Research Centre for
Ecosystem Resilience

ESTABLISHING KNOWLEDGE INFRASTRUCTURE TO SUPPORT RESTORATION SUCCESS

Maurizio Rossetto

Head of ReCER

www.recer.org.au

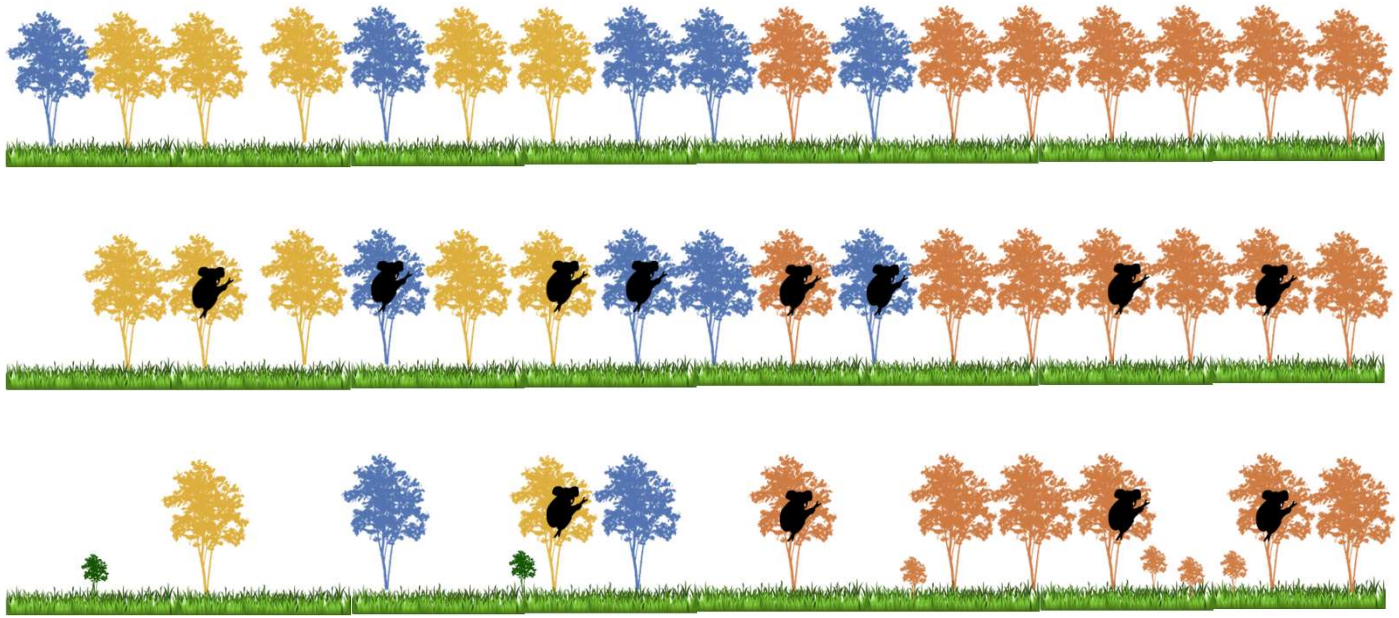
We acknowledge the Traditional Custodians of all the Lands we live and work on

Restoration success is a long-term game

Quantity ≠ Quality

Knowledge gathering and on-ground activities are not mutually exclusive processes

MEASURING SUCCESS

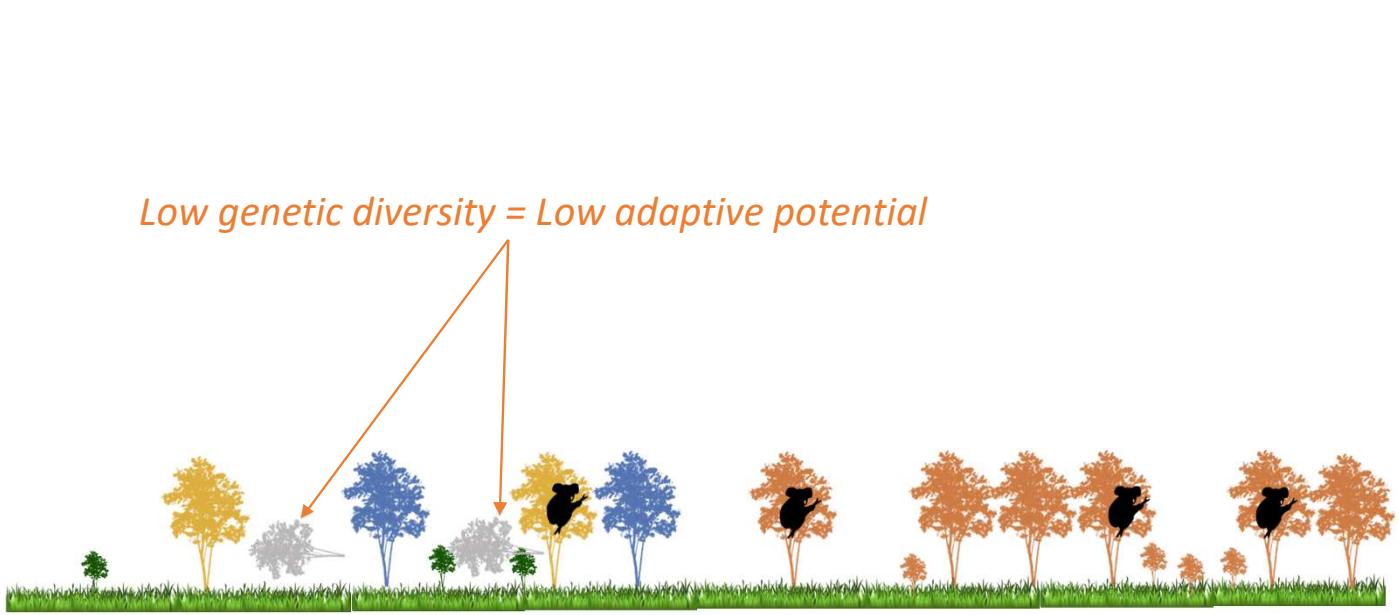


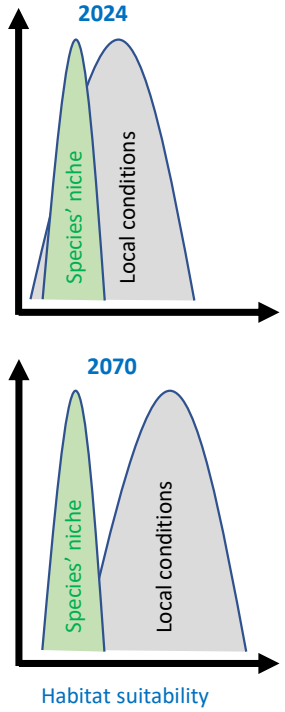
Restoration Stage 1

Restoration Stage 2

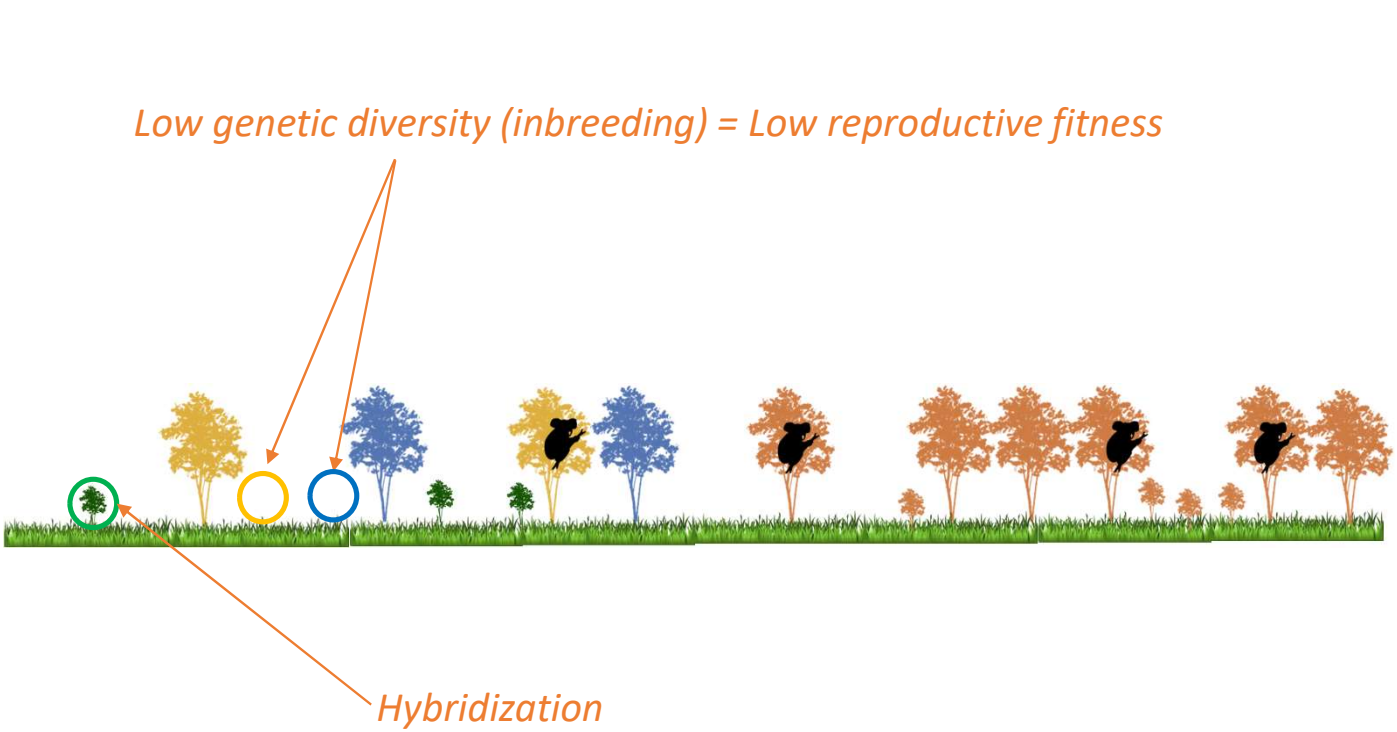
Restoration Stage 3

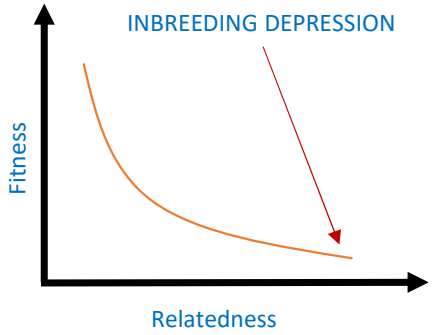
MEASURING SUCCESS



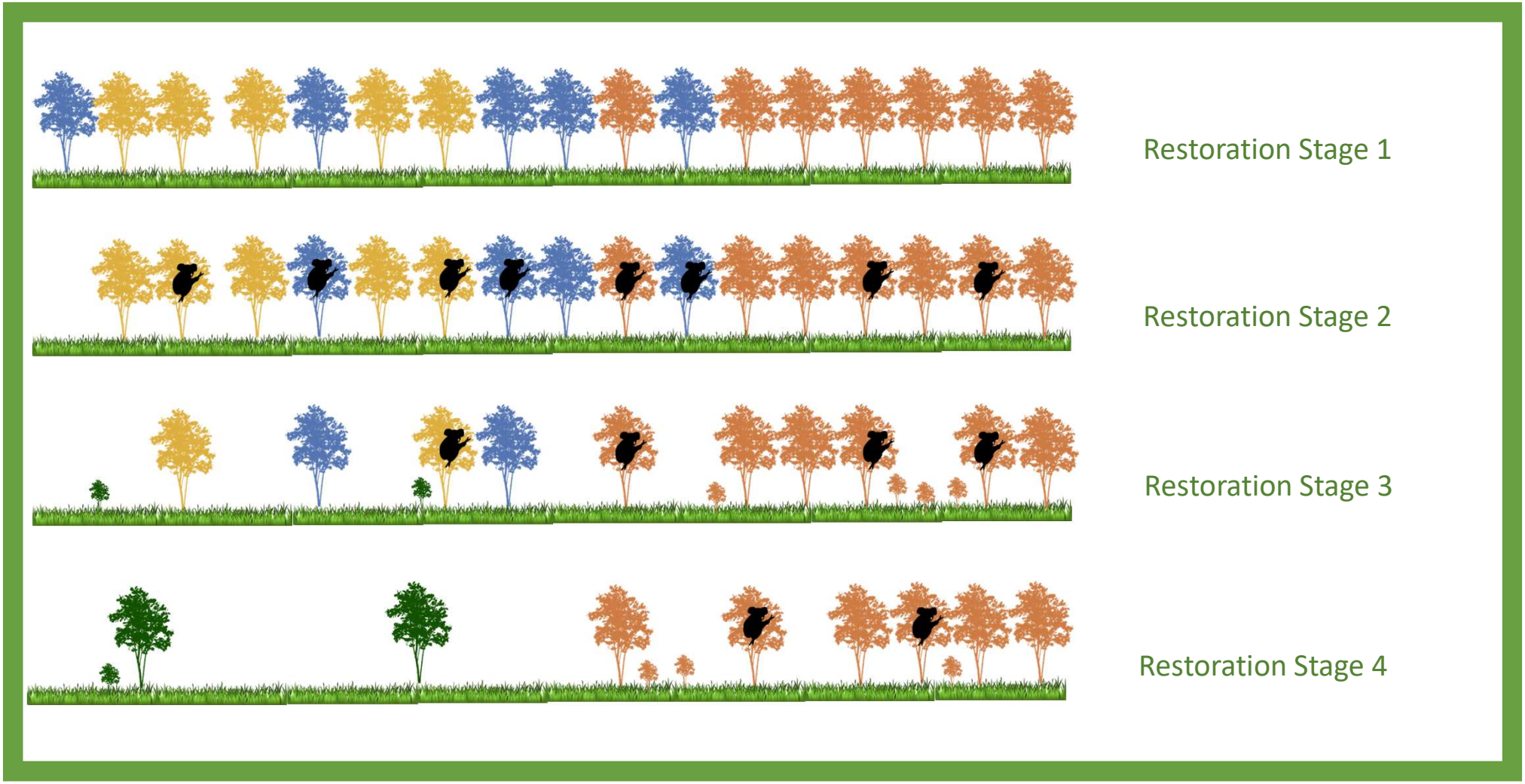


MEASURING SUCCESS



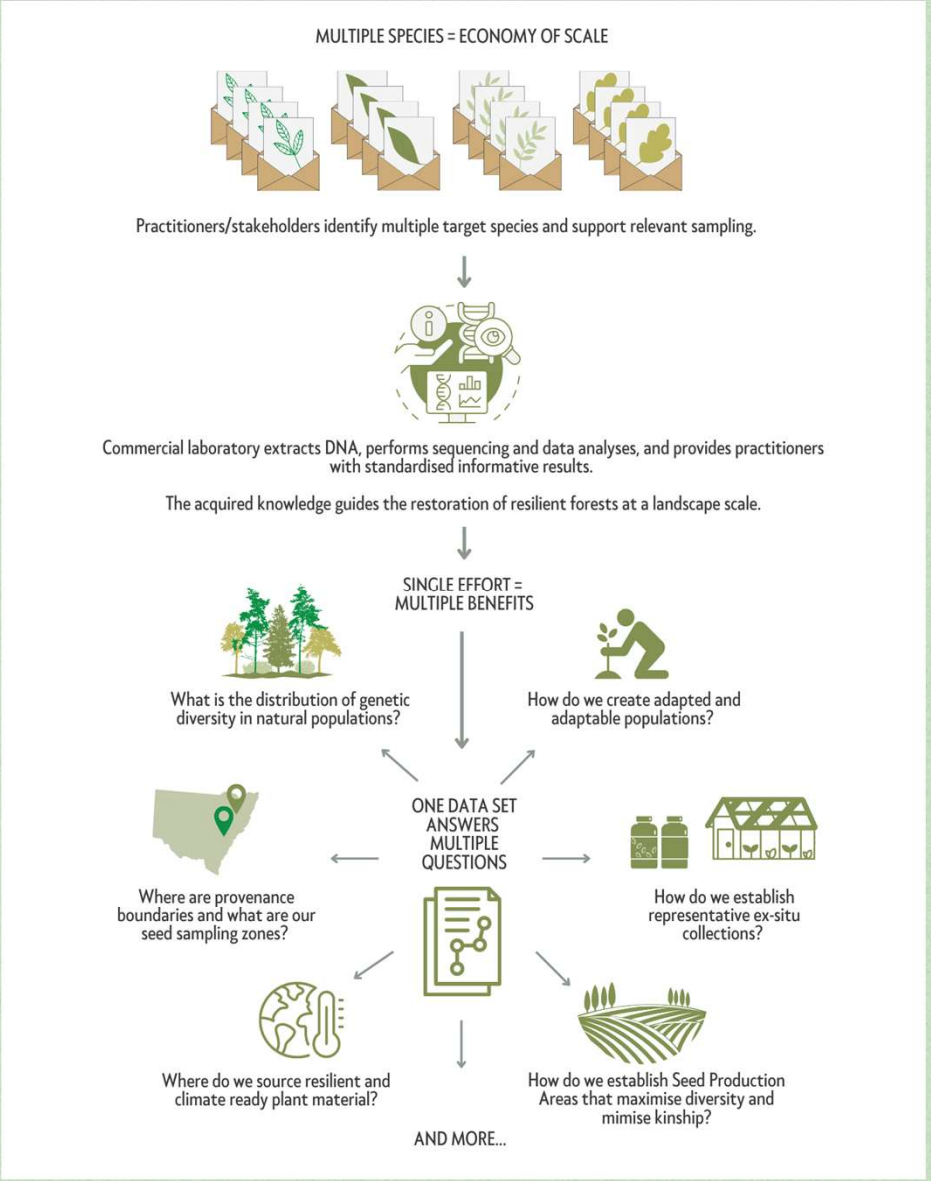


MEASURING SUCCESS

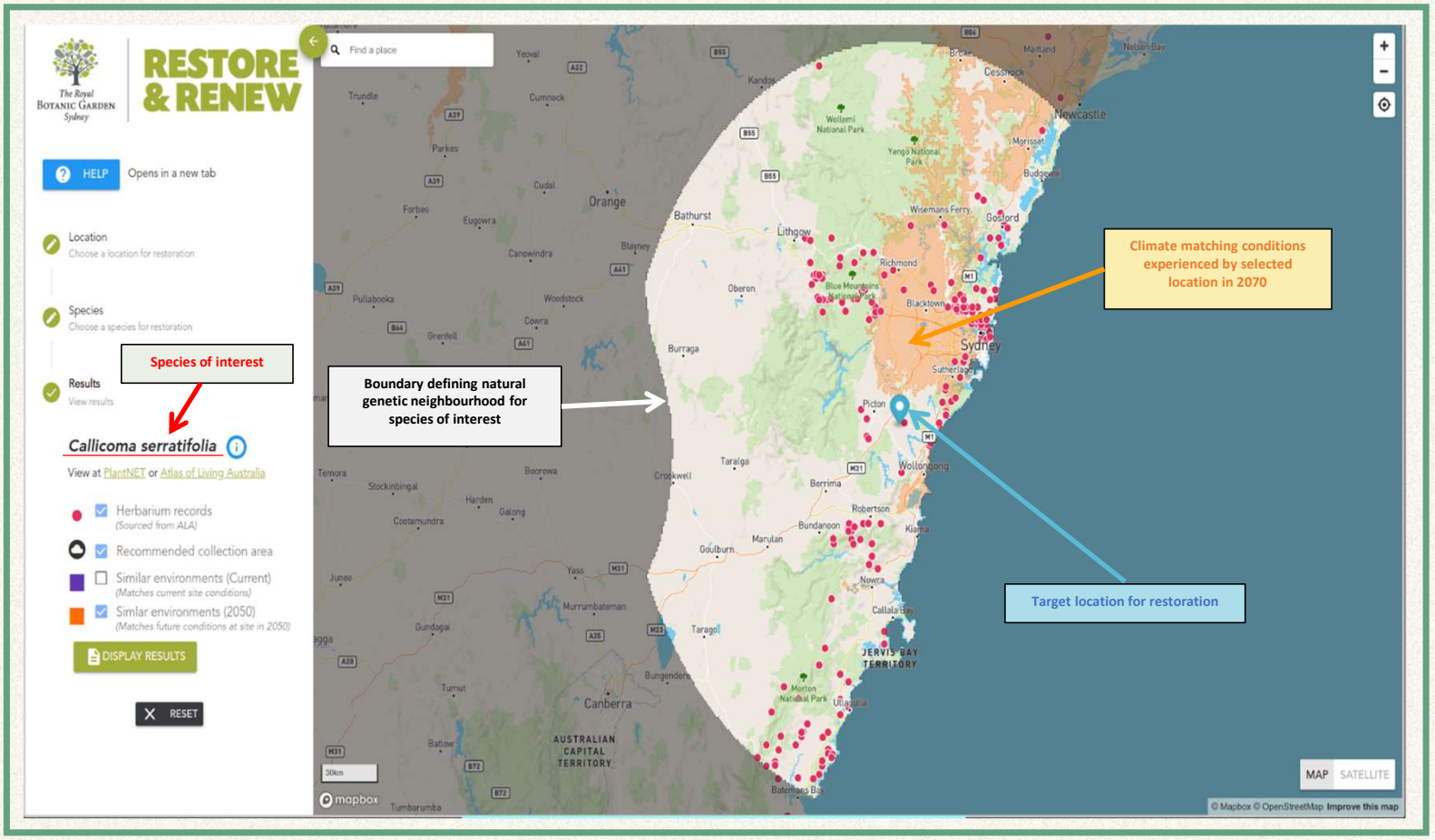


Genomic Knowledge Infrastructure

Technological advancements and economy of scale
= unprecedented opportunities



Restore & Renew restore-and-renew.org.au

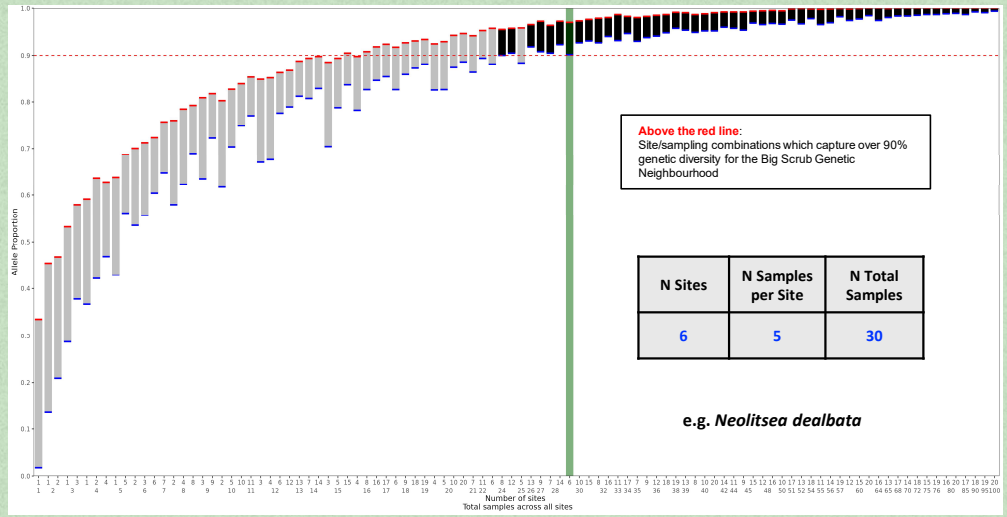


NSW GOVERNMENT AdaptNSW

Provide easily accessible, evidence-based, genetic and climatic guidance to restoration practitioners

Genetically optimised seed production areas

- Design Seed Production Areas for 60 rainforest trees (including common and rare species)
- Maximise diversity, consider climate resilience, include practical considerations

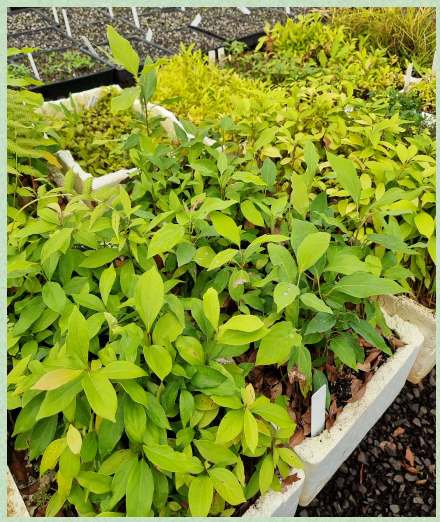


Big Scrub Rainforest Conservancy
https://bigscrubrainforest.org/

Research Centre for Ecosystem Resilience (ReCER) www.recer.org.au

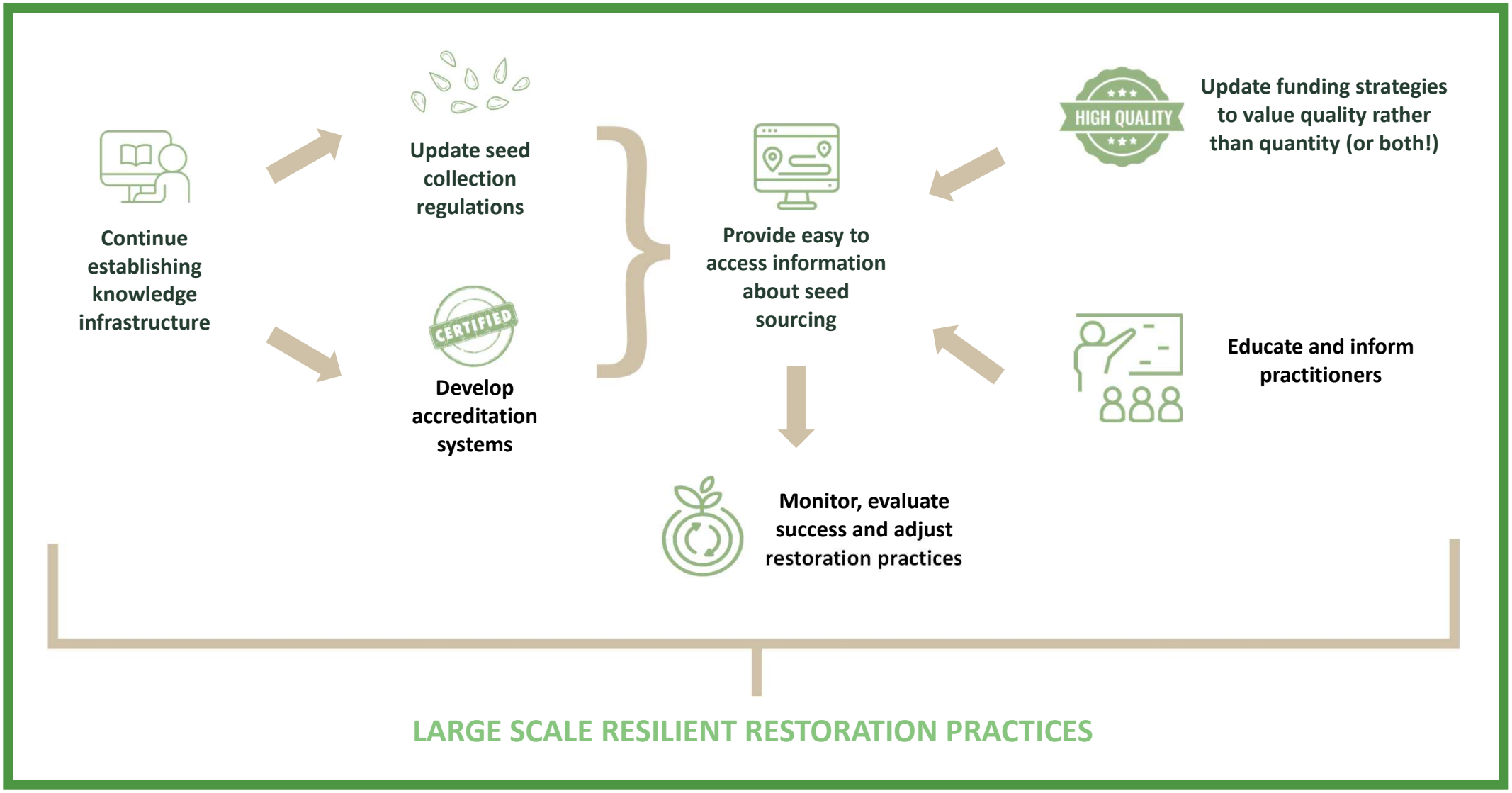
Genetically optimised seed production areas

- Validation trials



- Same information can be used to sample wild seed while waiting for plantations to grow

Stage 1- 23 key structural species	NNSW			Future Climate			Combined total trees for planting
Scientific name	No. of Sites	Samples per site	Total trees for NNSW GN	No. of Sites	Samples per site	Total trees for future climate GN	
Argyrodendron trifoliolatum	5	5	25	3	3	9	34
Brachychiton acerifolius	6	4	24	0	0	0	24
Cryptocarya glaucescens	4	5	20	2	5	10	30
Cryptocarya obovata	4	4	16	2	4	8	24
Cryptocarya triplinervis var. pubens	3	5	15	1	5	5	20
Diospyros pentamera	5	5	25	2	4	8	33
Diploglottis australis	5	5	25	2	3	6	31
Doryphora sassafras	5	5	25	0	0	0	25
Dysoxylum mollissimum	4	4	16	2	4	8	24
Elaeocarpus obovatus	4	3	12	2	4	8	20
Flindersia australis	3	4	12	2	5	10	22
Flindersia schottiana	3	5	15	2	5	10	25
Flindersia xanthoxyla	3	4	12	2	4	8	20
Neolitsea dealbata	8	3	24	3	4	12	36
Pentaceras australe	3	5	15	2	4	8	23
Planchonella australis	4	5	20	0	0	0	20
Sloanea australis	5	4	20	0	0	0	20
Sloanea woollsii	6	4	24	2	3	6	30
Stenocarpus sinuatus	4	4	16	2	4	8	24
Syzygium crebrinerve	4	5	20	0	0	0	20
Syzygium ingens	5	4	20	1	5	5	25
Syzygium luehmannii	3	5	15	2	4	8	23
Wilkiea hugeliana	4	5	20	0	0	0	20


Continue establishing knowledge infrastructure
Update seed collection regulations
Develop accreditation systems
Provide easy to access information about seed sourcing
Update funding strategies to value quality rather than quantity (or both!)
Educate and inform practitioners
Monitor, evaluate success and adjust restoration practices
LARGE SCALE RESILIENT RESTORATION PRACTICES

Research Centre for Ecosystem Resilience

Thank You

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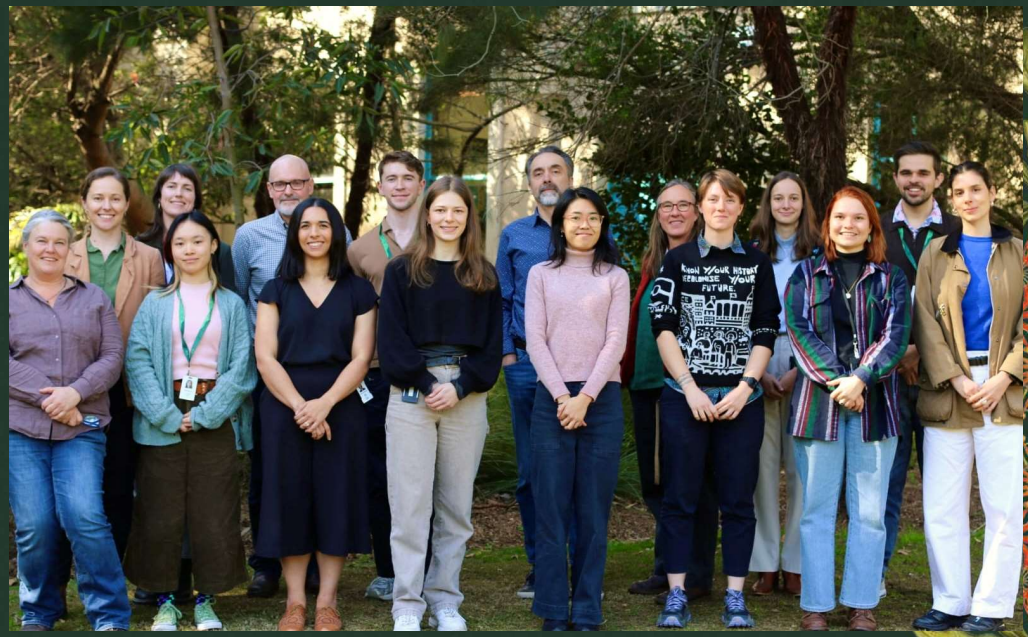

Funding & Collaborators

Royal Botanic Garden Sydney | Australian Botanic Garden Mount Annan | Blue Mountains Botanic Garden Mount Tomah | The Domain Sydney | Australian Institute of Botanical Science