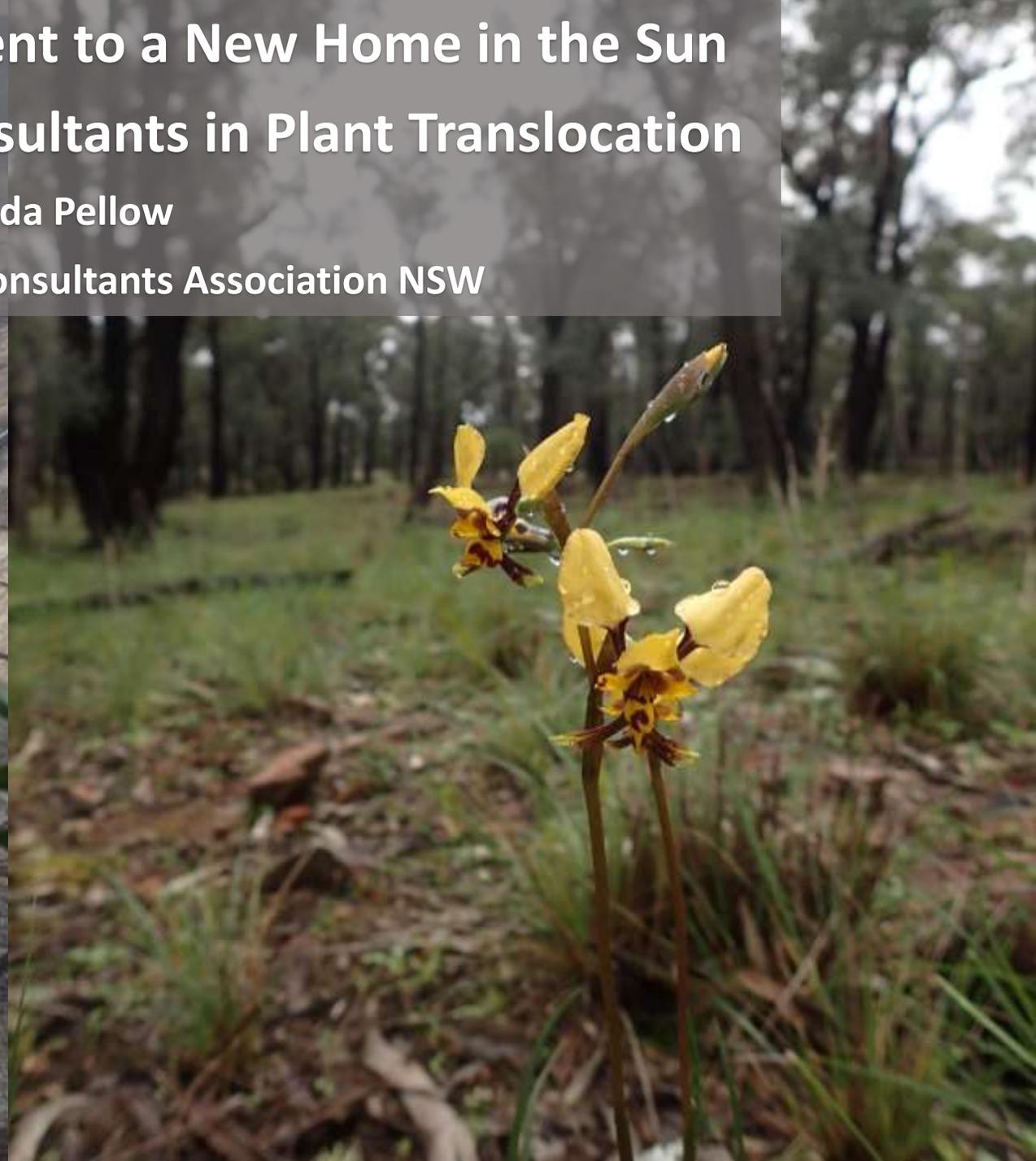
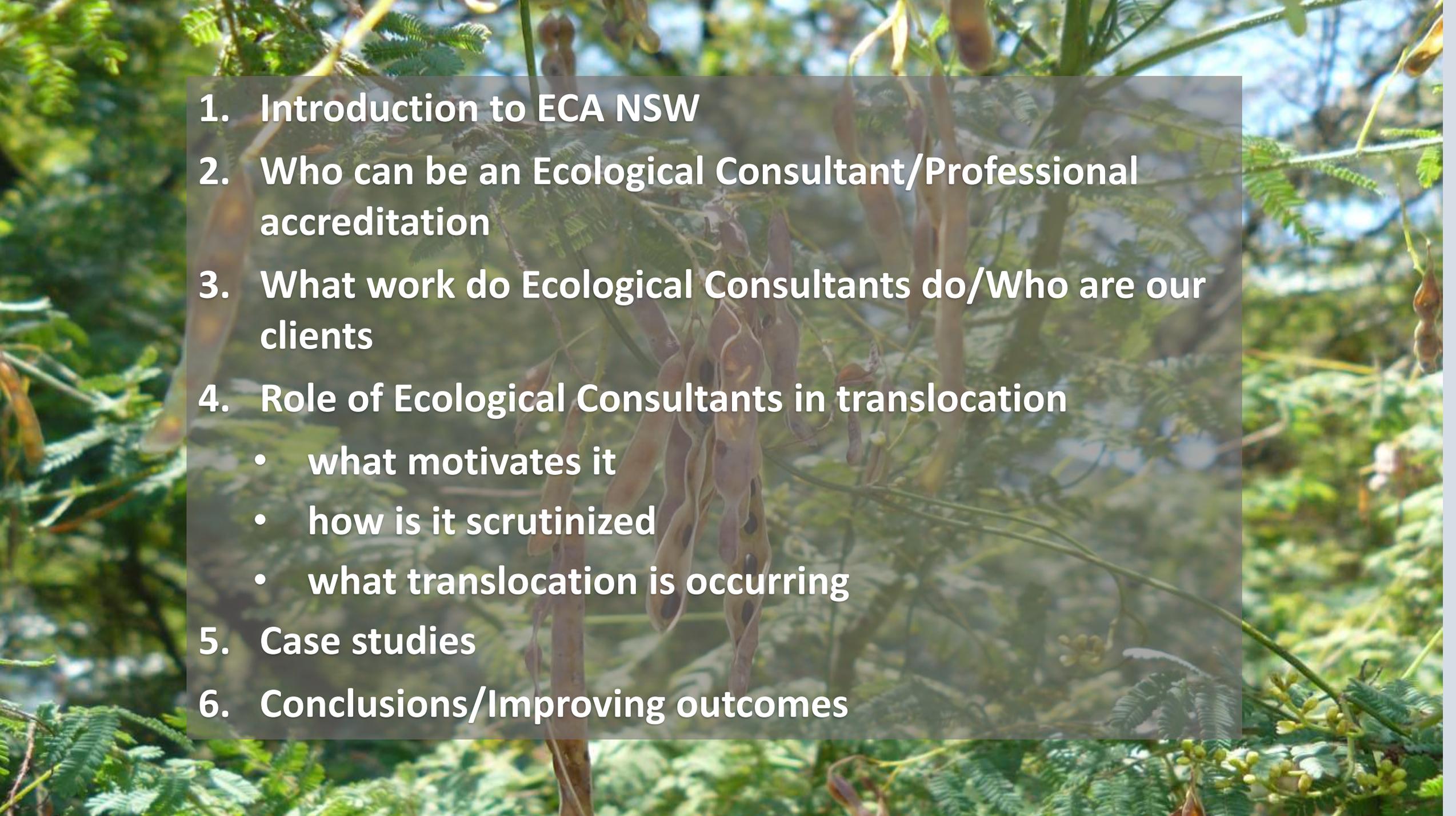


# From a Burnt-Out Basement to a New Home in the Sun The Role of Ecological Consultants in Plant Translocation

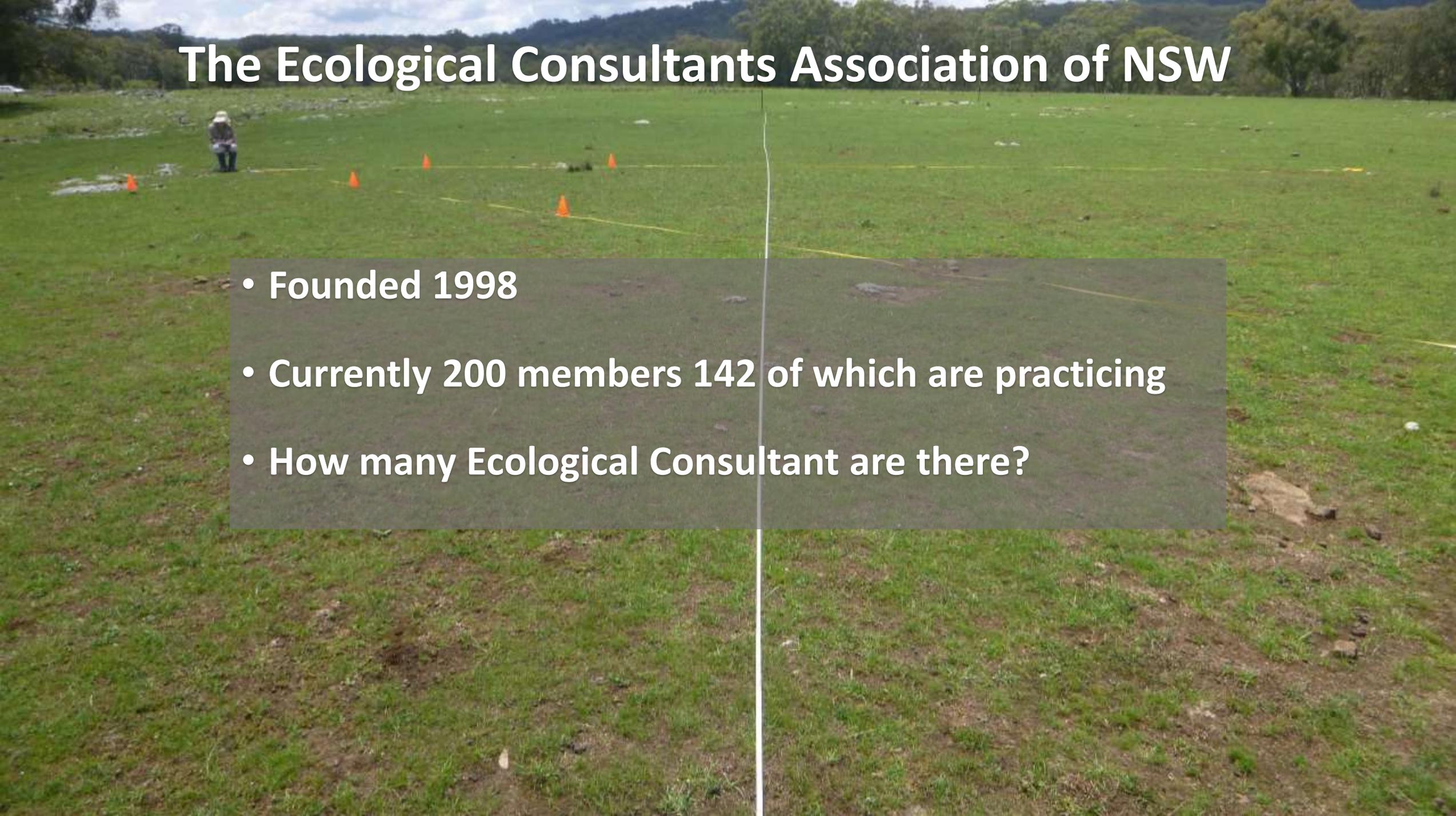
Belinda Pellow

President Ecological Consultants Association NSW



- 
1. Introduction to ECA NSW
  2. Who can be an Ecological Consultant/Professional accreditation
  3. What work do Ecological Consultants do/Who are our clients
  4. Role of Ecological Consultants in translocation
    - what motivates it
    - how is it scrutinized
    - what translocation is occurring
  5. Case studies
  6. Conclusions/Improving outcomes

# The Ecological Consultants Association of NSW



- **Founded 1998**
- **Currently 200 members 142 of which are practicing**
- **How many Ecological Consultant are there?**

# Who can be an Ecological Consultant?

- 1998 ECA NSW – code of ethics and disciplinary process for all practicing members
- 2008 OEH BioBanking scheme
- 2016 ECA NSW – Certified Practicing Ecological Consultant (CPEC)
- 2017 OEH Biodiversity Assessment Method (BAM) - now a legislated requirement for the assessment of development impacts

Still possible for anyone to set themselves up as an Ecological Consultant.





**Environmental Legislation**  
Commonwealth - EPBC Act  
NSW - EP&A Act, BC Act, Fisheries Act, LLS Act, Biosecurity Act, SEPP's, LPP's, LEP's,  
official guidelines, etc



**CONSULTANT**  
**BAM, BDAR, BCAR, BSSAR**  
Flora and fauna assessments, tests of significance,  
surveys for threatened species



**Consent Authorities**  
Approved - issue conditions of consent  
Rejected - may go to Land & Environment court



**CONSULTANT**  
Plans (biodiversity management, nest box,  
translocation, offset, threatened species, monitoring)  
monitoring activities, preclearance surveys, nest box  
installations, court work

**CONSULTANT**  
peer review,  
surveys for  
individual  
species or to  
collect data,  
expert advice,  
REF

**CONSULTANT**  
professional  
development,  
publication of  
results, training  
others.

# Who are our Clients

- **Individuals** e.g. removal of a tree or vegetation for new home
- **Local government** e.g. peer review, REF, Vegetation mapping
- **Commonwealth/State Government** e.g. infrastructure, data collection, guideline preparation, trial of new methods, peer review, regional development plans
- **Developers** e.g. subdivision, mining, gas
- **Universities** e.g. specialist training, research support

# Translocation and Ecological Consultants



## What motivates translocation?

- mitigation of impact

## How do consultants get to do translocation?

- implementation of development consent conditions

## What policy governs it?

- Commonwealth EPBC Act
- State legislation and policy



**EPBC Act - “a translocation associated with an action will be unlikely to be approved”** (Translocation Policy Statement)

For actions referred under the EPBC Act, the low success of translocation proposals mean that unless it can be shown that there is a high degree of certainty that a translocation will be successful in contributing to the long term conservation of the species or community, a proposal will be unlikely to be approved.

**“NSW OEH does not consider that translocation of threatened species, populations and ecological communities is an appropriate ameliorative strategy for the purposes of considering impacts of a particular development/activity”**  
(Chief Executive’s Requirements for a species impact statement)

The translocation of threatened species, populations and ecological communities is only supported by the OEH in specific conservation programs (e.g. recovery planning) but only as a last resort, and only when in-situ conservation options have been exhausted

## How is it scrutinized?

- Commonwealth and State government licensing
- NSW government has a public register of licenses issued for this purpose

However.....

- proponents can remove a species from a donor site without a license, if their development approval provides a “defence”
  - part of development site and project approval
  - translocation to different site will be licensed separately

## Other forms of scrutiny

- approval of translocation plans
- submission of annual reports



# Translocation in Practice

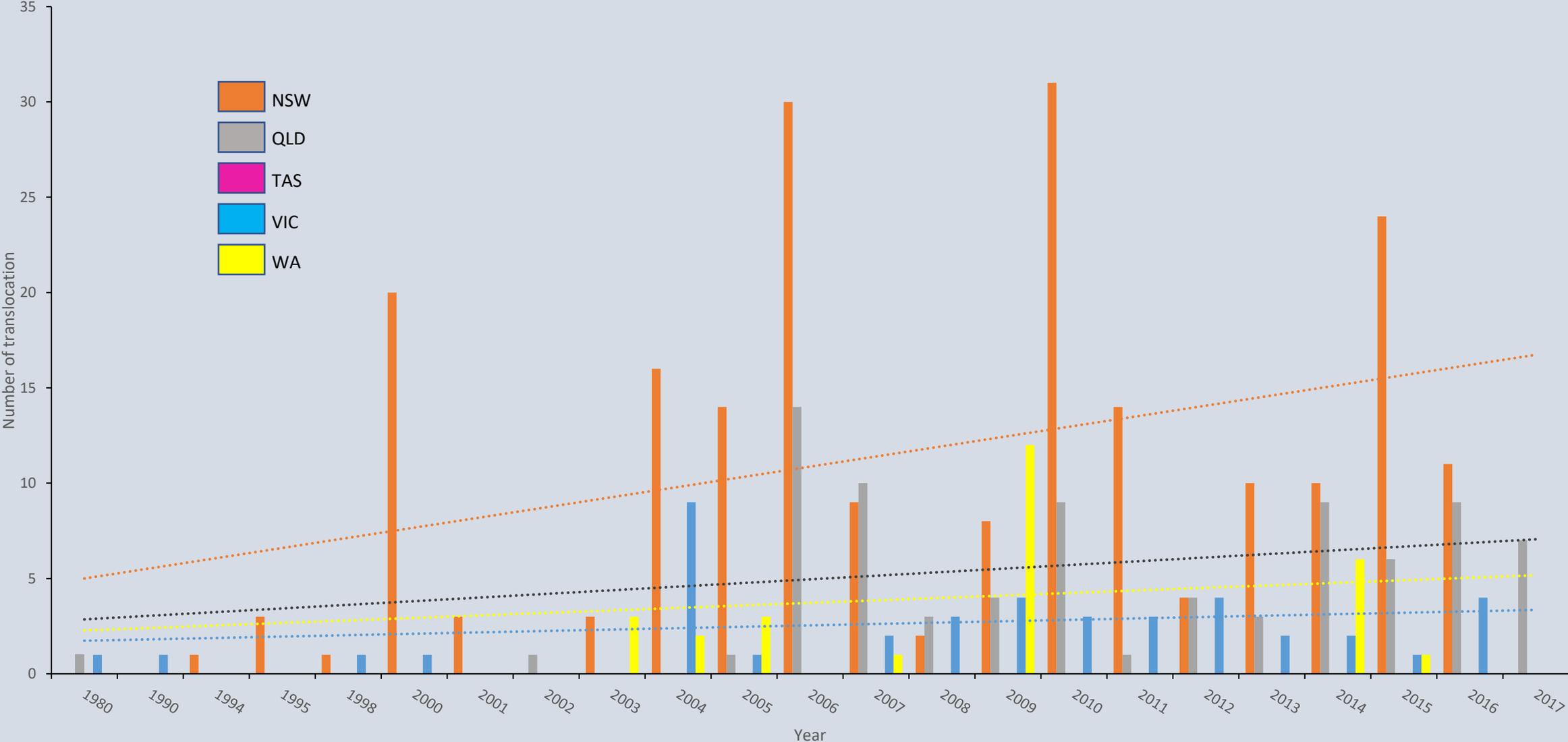


## Sources of Information

1. **Threatened Species Recovery Hub translocation database**  
(Silcock et al. in prep.)
2. **Canvassing of ECA NSW members**
3. **NSW public register of Section 91 licenses (TSC Act 1995)**
4. **EPBC register of applications to harm or move a threatened plants**

# Threatened Species Recovery Hub

(Silcock et al. in prep.)



## Threatened Species Recovery Hub (Silcock et al. in prep.)

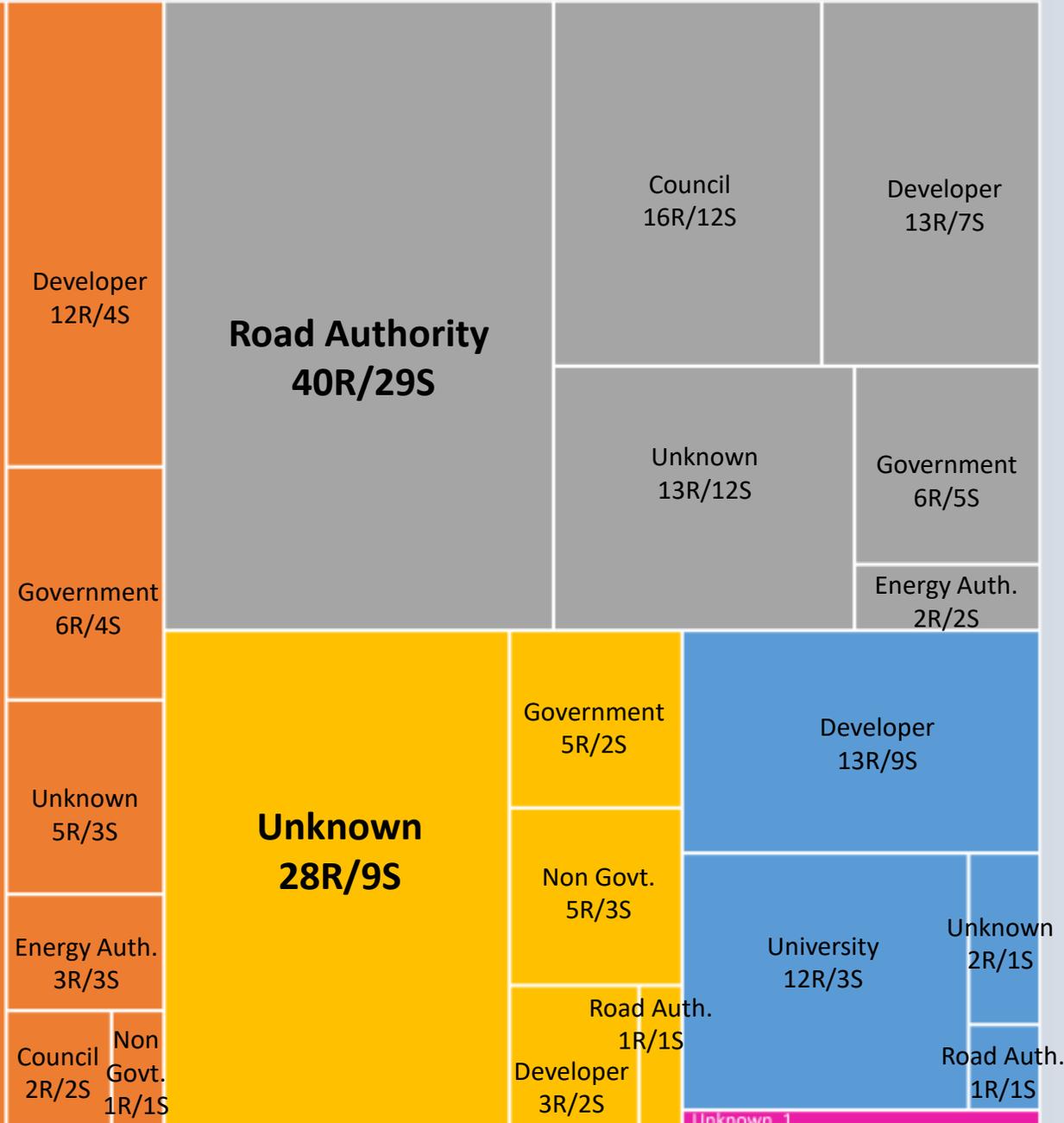
State	Total Records (Development Mitigation) 1980-2017	Number of Consultants	Records attributed to one consultant	Number of species
NSW	227	14	179	67
QLD	90	28	19	55
TAS	1	1		1
VIC	42	12		11
WA	28	8		12
TOTAL	388			

# Threatened Species Recovery Hub (Silcock et al. (in prep.))

- NSW
- QLD
- TAS
- WA
- VIC

**Road Authority  
198R/54S**

R = record  
S = species



## ECA NSW Member Questionnaire

Information	Result
Number of Species	13 (2 not listed as threatened)
Year of translocation	1998-2017
General Location	NSW North Coast, Sydney, NW NSW
Relocation or Propagation	Transplanted: 8 Cuttings: 5 Seed: 3
Were the translocated species monitored over time; if so for how long?	Yes: 10/13 (1 to 3 years with 2 requiring ongoing monitoring)

## ECA NSW Member Questionnaire - continued

Information	Result
<b>Was the translocation successful?</b>	No: 5 (all dead) Yes: 8 for at least 2 years, to varying degrees
<b>If not successful any ideas why?</b>	Planted in hot, dry year; no follow up watering Plants selected for translocation in very poor condition Approval conditions not enforced Inappropriate recipient site
<b>Any other information</b>	2/13 conducted under NSW Section 91 licence (NSW TSC Act)

# **NSW and Commonwealth licence/permit records**

**NSW Section 91 licence: 15 (2006 – 2017)**

- **cf. 227 records for NSW (TSR Hub data)**

**Commonwealth EPBC Act permit: 1 in 2013; 1 in 2018.**

- **cf. 388 records Nationally (TSR Hub data)**

# Flora Translocation Strategy Pacific Highway Upgrade NSW (one of many plans for this project)

(Transport, Roads and Maritime Service 2015)

- approved by the NSW Minister for Planning & under Commonwealth EPBC Act
- approval required the applicant to prepare and implement a Flora Translocation Strategy

*Grevillea quadricauda* (V)

*Endiandra muelleri* subsp. *bracteata* (E)

*Arthraxon hispidus* (V)

*Syzygium hodgkinsoniae* (V)

*Macadamia tetraphylla* (V)

*Prostanthera cineolifera* (V)

*Lindsaea incisa* (E)

*Cryptocarya foetida* (V)

*Persicaria elatior* (V)

*Melaleuca irbyana* (E)

*Archidendron hendersonii* (V)

*Oberonia complanata* (E)



# *Grevillea juniperina* ssp. *juniperina* R.Br.

- Divot Transplanting 2003
  - Penrith Council requirement as part of development consent. No licence required
  - Monitored for 12 months
  - Current Status: All plants gone/dead site now a car park
- Source: Judie Rawlings (UBM)



# *Pomaderris prunifolia* var. *prunifolia* Fenzl

- Divot Transplanting 2005
- NSW Land and Property Management Authority. Translocation plan approved by NSW environment agency
- Monitored for 3 years
- Current Status: thriving; seed collected 2011 and many seedlings propagated

Source: Judie Rawlings (UBM)





## ***Micromyrtus blakelyi* J.W.Green**

- **Translocation & Propagation 2017**
- **Council requirement as part of development consent. No licence required**
- **No formal monitoring**
- **Current Status: 25 out of 45 translocated still living**



## ***Tylophora linearis* P.I.Forst**

- **Seedling translocation 2015**
- **Requirement of NSW project approval and Commonwealth consent**
- **Consent given by Planning NSW. No licence required**
- **Monitored weekly after planting and then monthly**
- **Current Status: all 88 assumed dead 2016; 1 individual resprouting in Dec 2017**





## ***Hibbertia spanantha* Toelken & A.F.Rob**

- **Propagation (cuttings) 2015; (consent given for propagation from seed)**
- **Condition of consent for state infrastructure development. Section 91 licence required**
- **Eight planted and watered for a period of 6 weeks**
- **Additional work: soil chemistry analysed**
- **Monitored regularly over a 12 month period**
- **Current Status: all plants dead, November 2016**

**Source: Chantelle Doyle (AMBS Ecology & Heritage)**

# *Hibbertia spanantha* Toelken & A.F.Rob - continued

## Pot soils differed from field soils

- higher moisture content (%), pH, Available P, ammonia, nitrate/nitrite

- further work to develop propagation techniques

- funded by OEH and Hornsby Council

- nursery trial; 5 nutrient treatments (N=25), including provenance soil

- easily propagated from cuttings but no seed set despite prolific flowers
- high NPK (+10g fertiliser) appears to retard growth
- root growth differs between provenance and high NPK treatment

- planned population expansion program for 2019/2020



# General Conclusions

- Most translocation undertaken by consultant is not publicly documented
- Mismatch between documented translocation and actual works being undertaken
- No central record of impact mitigation translocations & outcomes
- Lack of knowledge transfer and communication is a barrier to translocation success
- Development approvals and conditions need to acknowledge high risks of translocation failure under current limitations to knowledge and technology

# Why do many translocation projects fail?

## 1. Unrealistic objectives

- set by consent authorities, management plans

## 2. Inadequate knowledge/technology

- unable to learn from others results – follow up on failures

## 3. Inadequate planning framework, guidelines and reporting

- all translocation should be licenced and reported
- approval conditions consistent with standard guidelines

## 4. Failure to enforce conditions of consent

- inadequate monitoring, no compliance
- poor consultation with stakeholders

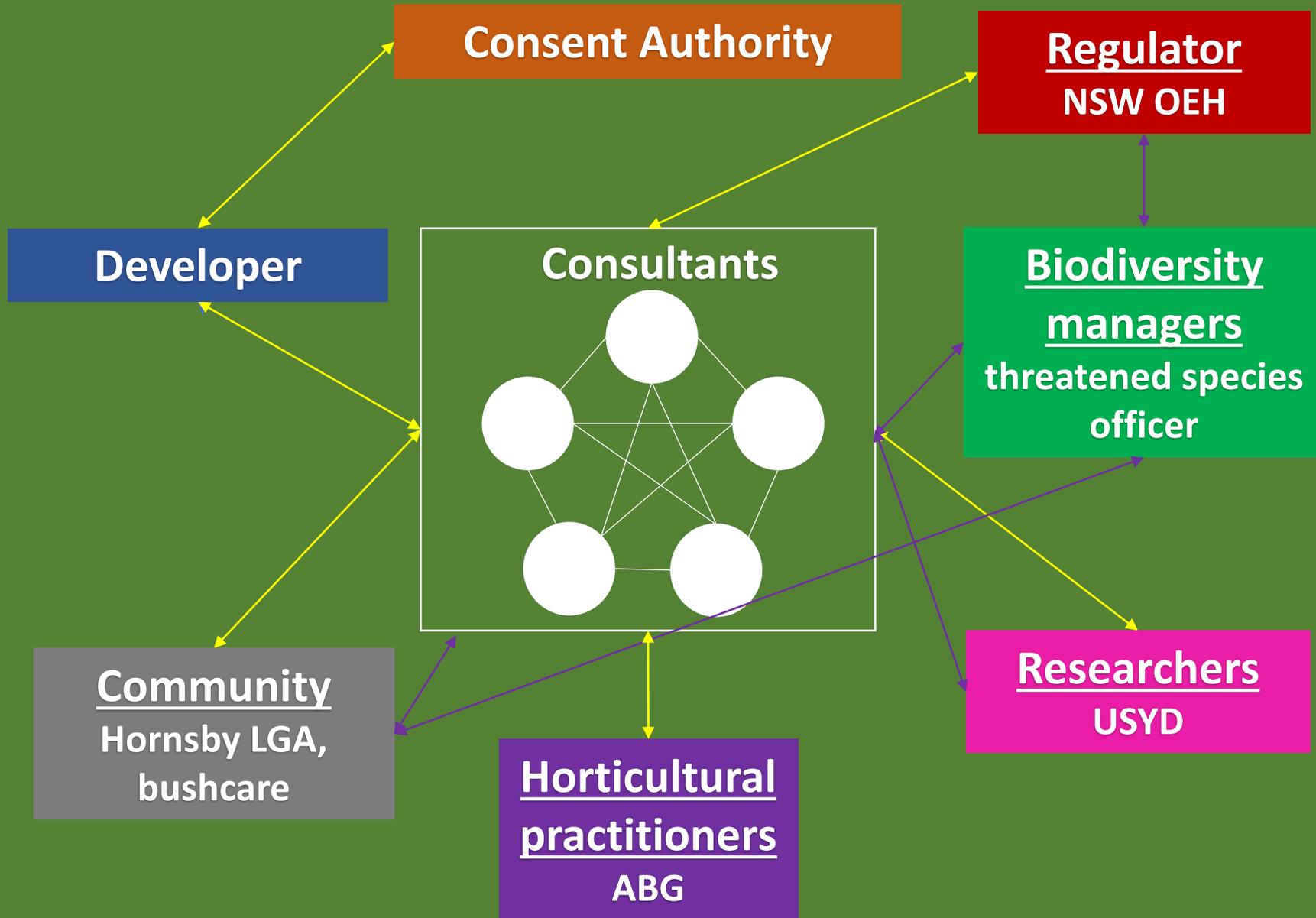


## Improving translocation outcomes networking/partnerships

- establishing central register, mandatory reporting for all translocations
- more engagement of researchers
- increasing the level of networking between stakeholders
- increasing contact between developers, consultants and researchers in reciprocal partnerships
- engaging the community – ongoing monitoring/in situ care
- building knowledge base in consent authorities



# Improving outcomes: Translocation Networking/Partnership



*Hibbertia spanantha* Toelken & A.F.Rob

- Propagation (cuttings) 2015; (consent given for propagation from seed)
- Condition of consent for state infrastructure development. Section 91 licence required
- Eight plants planted and watered regularly for a period of 6 weeks
- Monitored regularly over a 12 month period
- Current Status: all plants dead, November 2016
- Additional work: Soil chemistry analysed

Source: Chantelle Doyle (AMBS Ecology & Heritage)



“Flying mother nature’s silver seed to a new home in the sun”

Thank you  
Chantelle Doyle, Judie Rawlings, Dan Clarke and all  
other consultants that contributed information  
Jennifer Silcock, TSR Hub

Neil Young

