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
Flora and fauna assessments, tests of significance, surveys for threatened species

CONSULTANT
BAM, BDAR, BCAR, BSSAR

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
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
<table>
<thead>
<tr>
<th>State</th>
<th>Total Records (Development Mitigation) 1980-2017</th>
<th>Number of Consultants</th>
<th>Records attributed to one consultant</th>
<th>Number of species</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>227</td>
<td>14</td>
<td>179</td>
<td>67</td>
</tr>
<tr>
<td>QLD</td>
<td>90</td>
<td>28</td>
<td>19</td>
<td>55</td>
</tr>
<tr>
<td>TAS</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
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<tr>
<td>VIC</td>
<td>42</td>
<td>12</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>WA</td>
<td>28</td>
<td>8</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>388</td>
<td></td>
<td></td>
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</tbody>
</table>
Threatened Species Recovery Hub
(Silcock et al. (in prep.))

R = record
S = species
<table>
<thead>
<tr>
<th>Information</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Species</td>
<td>13 (2 not listed as threatened)</td>
</tr>
<tr>
<td>Year of translocation</td>
<td>1998-2017</td>
</tr>
<tr>
<td>General Location</td>
<td>NSW North Coast, Sydney, NW NSW</td>
</tr>
<tr>
<td>Relocation or Propagation</td>
<td>Transplanted: 8</td>
</tr>
<tr>
<td></td>
<td>Cuttings: 5</td>
</tr>
<tr>
<td></td>
<td>Seed: 3</td>
</tr>
<tr>
<td>Were the translocated species monitored over time; if so for how long?</td>
<td>Yes: 10/13 (1 to 3 years with 2 requiring ongoing monitoring)</td>
</tr>
<tr>
<td>Information</td>
<td>Result</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Was the translocation successful?</td>
<td>No: 5 (all dead)</td>
</tr>
<tr>
<td></td>
<td>Yes: 8 for at least 2 years, to varying degrees</td>
</tr>
<tr>
<td>If not successful any ideas why?</td>
<td>Planted in hot, dry year; no follow up watering</td>
</tr>
<tr>
<td></td>
<td>Plants selected for translocation in very poor condition</td>
</tr>
<tr>
<td></td>
<td>Approval conditions not enforced</td>
</tr>
<tr>
<td></td>
<td>Inappropriate recipient site</td>
</tr>
<tr>
<td>Any other information</td>
<td>2/13 conducted under NSW Section 91 licence (NSW TSC Act)</td>
</tr>
</tbody>
</table>
NSW and Commonwealth licence/permit records

NSW Section 91 licence: 15 (2006 – 2017)
  • cf. 227 records for NSW (TSR Hub data)

  • cf. 388 records Nationally (TSR Hub data)
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)

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

“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”

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 where the conservation options have been exhausted. Such programs should only be considered following extensive investigation of a demonstrated long term scientific commitment on behalf of the applicant.

Flora Translocation Strategy Pacific Highway Upgrade NSW
(one of many plans for this project)
(Transport, Roads and Maritime Service 2015)
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.Greeen

- 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 spanantheta 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 retards 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?

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<tr>
<td><strong>1. Unrealistic objectives</strong></td>
<td>• set by consent authorities, management plans</td>
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<tr>
<td><strong>2. Inadequate knowledge/technology</strong></td>
<td>• unable to learn from others results – follow up on failures</td>
</tr>
<tr>
<td><strong>3. Inadequate planning framework, guidelines and reporting</strong></td>
<td>• all translocation should be licenced and reported</td>
</tr>
<tr>
<td></td>
<td>• approval conditions consistent with standard guidelines</td>
</tr>
<tr>
<td><strong>4. Failure to enforce conditions of consent</strong></td>
<td>• inadequate monitoring, no compliance</td>
</tr>
<tr>
<td></td>
<td>• poor consultation with stakeholders</td>
</tr>
</tbody>
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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

- Consent Authority
- Regulator: NSW OEH
- Developer
- Consultants
- Biodiversity managers: threatened species officer
- Researchers: USYD
- Community:
  - Hornsby LGA, bushcare
- Horticultural practitioners: ABG

Hibbertia spananthe Toelken & A.F.Rob
- Propagation (cuttings) 2015; (consent given for propagation from seeds)
- Condition of consent for state infrastructure development. Section 51 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

Sources: Chantelle Doyle (AAHS Ecology & Heritage)
Thank you
Chantelle Doyle, Judie Rawlings, Dan Clarke and all other consultants that contributed information

Jennifer Silcock, TSR Hub

Neil Young

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