

Threatened Flora of Victoria

Particularly of the Greater Geelong area

Neville Walsh
Senior Conservation Botanist
RBGV

Threatened Victorian flora

How big is the problem?



Current threat status of Victorian vascular plants [total no of natives 3708]

	State		National (EPBC)
*Extinct:	44	(1.1%)	3
*Endangered:	341	(9.1%)	65
*Vulnerable:	486	(13.1%)	98
Rare:	819	(22.1%)	

* = 'threatened'

Data from VicFlora: <http://data.rbg.vic.gov.au/vicflora/>



REASONS FOR RARITY

- Land modification (e.g. urbanisation; agriculture; recreation; mining; weeds; feral animals)
- Taxonomy
- Our perceptions – not always accurately reflecting the real situation (e.g. nearly 1/3 of R&T are orchids)
- Climate change (?yet)
- Inherent rarity (e.g. rare habitat, symbiosis – orchids, but not only orchids)



Land modification

- Fertile, easily cleared ground for cropping and grazing
- Mines (bluestone, Lara, Fyansford; limestone, Batesford; coal, Anglesea)
- Cities
- Resorts – loving them to death (Queenscliff, Anglesea)
- Rivers/dams (e.g. West Barwon, Stony Ck)
- Animal introductions (e.g. rabbits, horses, deer, goats, pigs)
- Weeds (e.g. Boneseed, Chilean Needle-grass, Serrated Tussock, Marram)



Land modification (ctd)

- Between 1971 and 2015 Victoria's population nearly trebled – currently 5.8 million and growing fast (projected to increase to c. 8 mill by 2020)
- Despite 'net gain' policy Victoria loses native vegetation by between 4,000 and 11,000 ha/yr



Taxonomy

- The science (art) of turning one common species into many rare ones – particularly a phenomenon for charismatic groups (e.g. orchids, eucalypts, *Grevillea*, *Callistemon*) – can lead to consumption of conservation resources on rarities that may not be (e.g. *Adriana quadripartita*).
- The flipside of this is the neglect of uncharismatic groups (e.g. grasses, sedges) that probably harbour yet-to-be-named rare species.

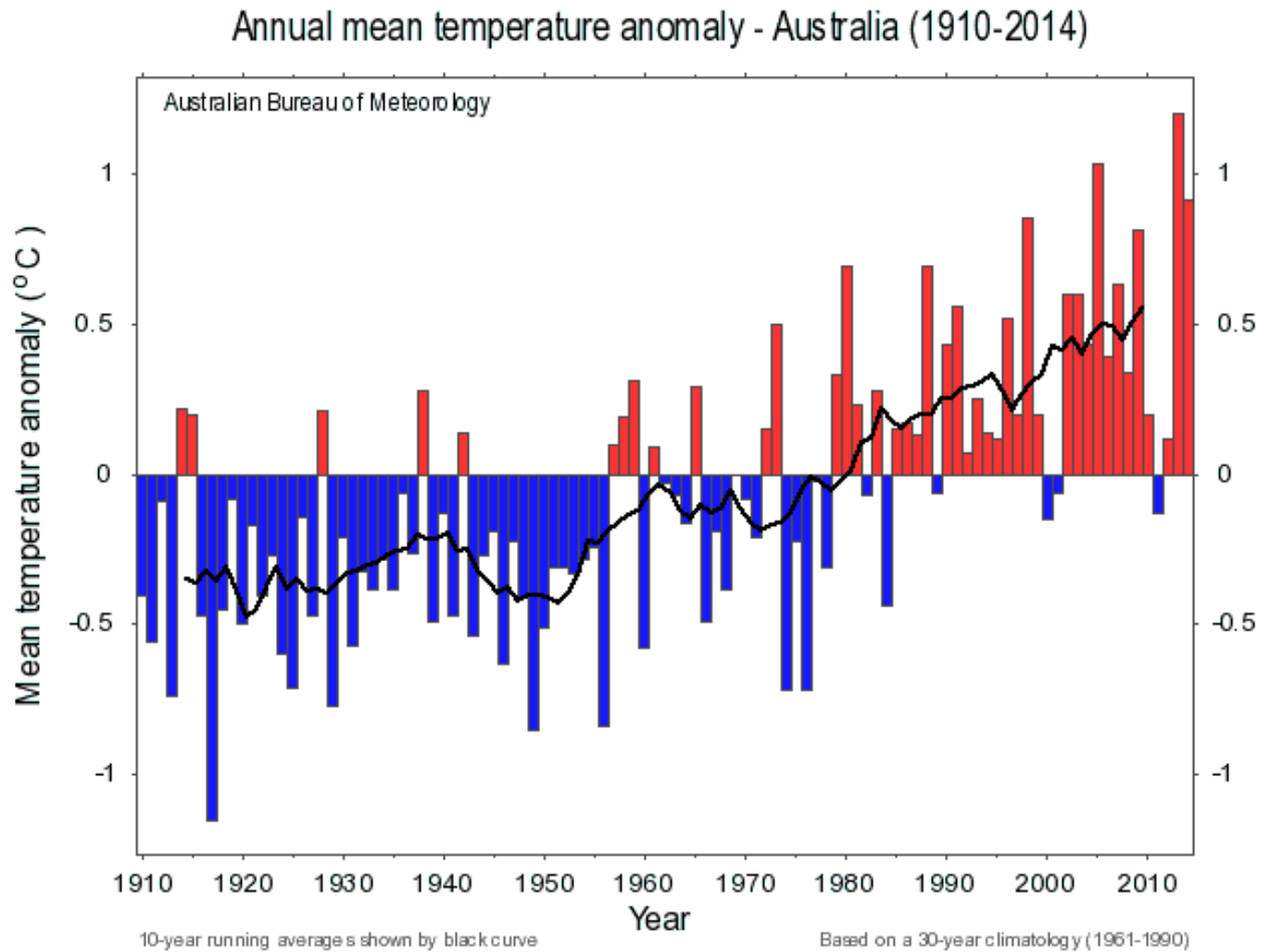


Climate Change

- Australia is 14th largest emitter per capita of Greenhouse Gases worldwide (Climate Council 2015)
- Victoria has increased emissions by 12% since 1990
- Australia's March mean temperature **hottest on record** at 1.70°C above average National March mean minimum temperatures **warmest on record**, with an anomaly of $+1.97^{\circ}\text{C}$ (BoM, Apr. 2016)
- Globally, February 2016 was the **hottest on record** even though El Nino was not particularly strong (Prof. David Karoly, Univ. of Melbourne).
- IPCC (2013) projected sea-level rise to 1 m by 2100 (more recent studies suggests that, depending on the behaviour of Greenland and Antarctica ice sheets, this could go out to 3 or even 5 m by 2100).



Deviation from mean temperature: going up.....



Saltmarsh – one of Victoria's most threatened



Western Port

It's not only plants we lose



Orange-bellied Parrot, Werribee. Photo: Chris Tzaros

Grasslands of the Victorian Volcanic Plain: a nationally endangered community



Well-maintained *Themeda* grassland near Nerrin Nerrin

photo: Debbie Reynolds

Geranium sp. 1: endangered in Victoria



Grasslands garden, RBGV, Melbourne

Pimelea spinescens, Little River area



Photo: Chris Clarke, Natureshare

Poa physoclina: salt lake margin specialist (note zonation)



Lake Burnie Bolac near Derrinallum. Photo A. Pritchard

Poa sallacustris: salt lake margin specialist



Lake Corangamite: note *Coxiella* shell substrate

Pomaderris halmaturina ssp. *continentis*



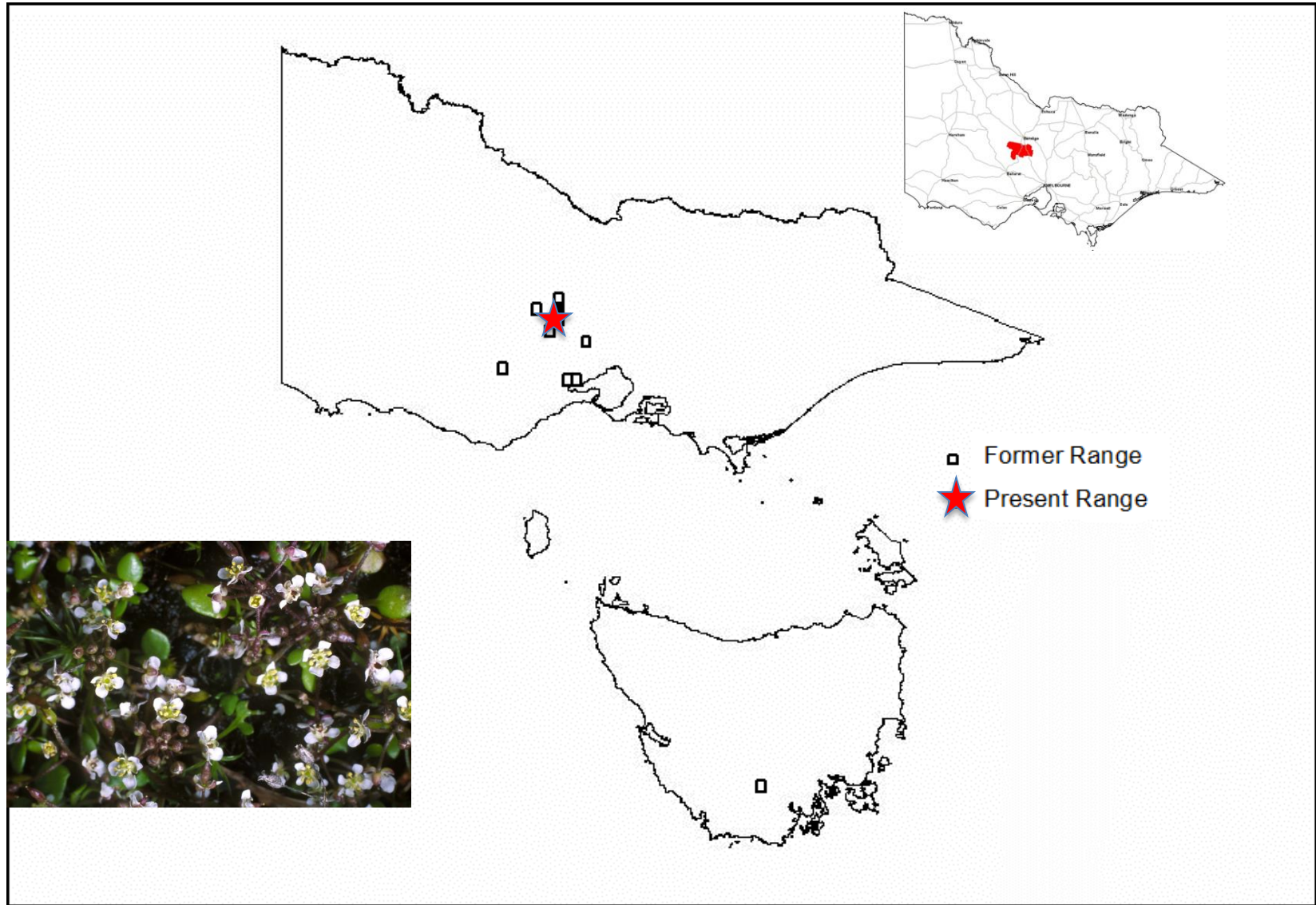
Thompsons Ck, Connewarre area

Southern Shepherds Purse: *Ballantinia antipoda*



Mt Alexander, Central Victoria

Ballantinia antipoda: previous and current range



Pterostylis truncata

‘Little Dumpies’

Photo: Chris Lindorff, Natureshare

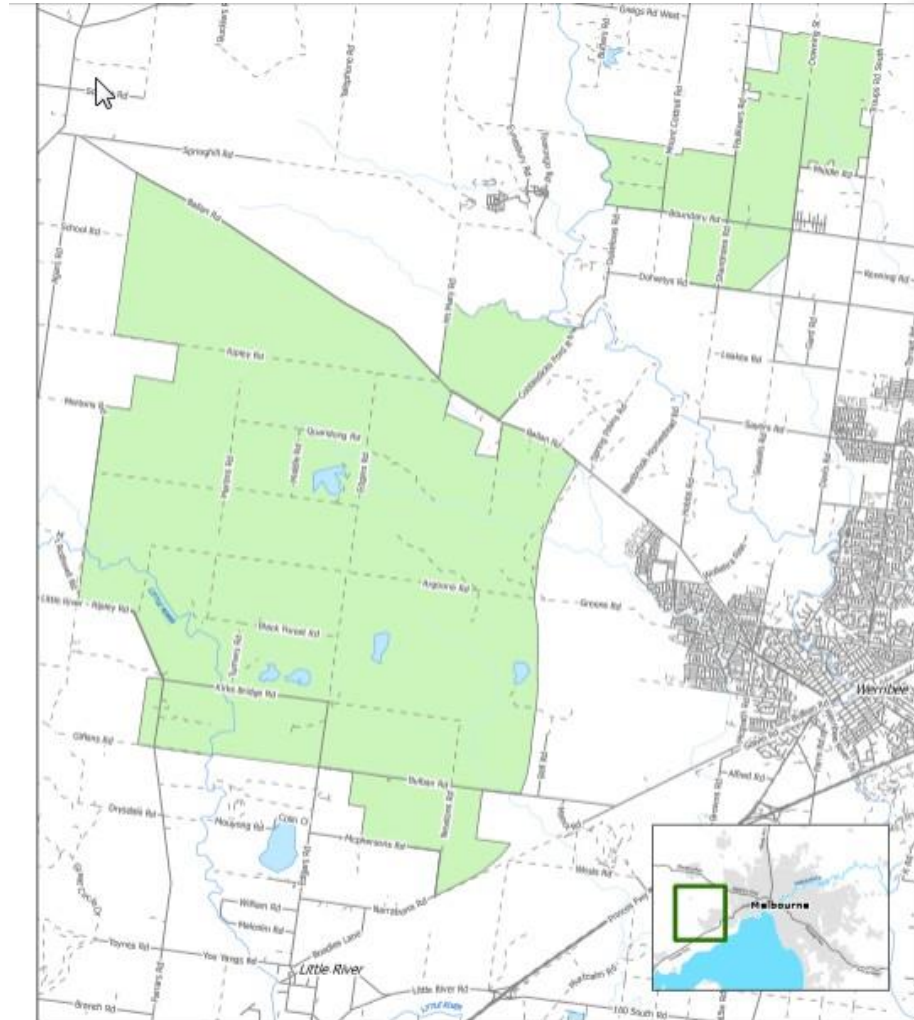


What to do?

- *In situ* protection (weeding, reinforcement – mostly landowners, friends groups & Govt authorities)
- ✓ Restoration (communities and species; seed-orcharding)
- ✓ *Ex-situ* conservation (e.g. seedbanking)
- ✓ Public education (regional rare plant collections; signage)



Habitat Restoration: e.g. Western Grasslands Reserve



Western Grassland Reserves



15,000 ha between the You Yangs and Werribee

Habitat creation as sea level rises? Not here!



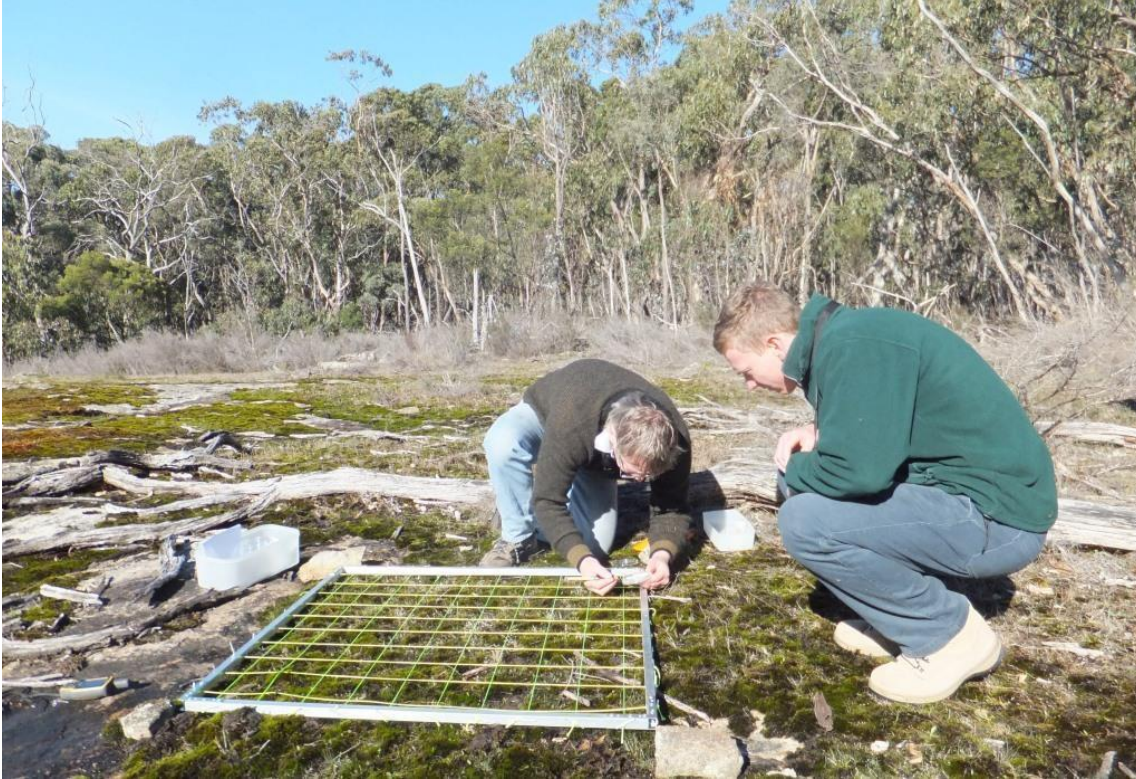
Hastings, Western Port; photo Paul Boon

Habitat Restoration: seed-orcharding



Swainsona behriana RBGV, Melbourne

Species Restoration/Translocation



Southern Shepherds-purse, *Ballantinia antipoda*, Mt Tarrengower.



Maybe reintroduce to You Yangs?

Species restoration: Population enhancement



Pomaderris halmaturina ssp. *continentis*:
Dans Reserve, Connewarre, Surf Coast shire

Seedbanking: bells and whistles



Millennium Seed Bank building, RBG Kew, Wakehurst Place



Seedbanking: compact, low-tech, but effective



Victorian Conservation Seedbank, RBGV, Melbourne

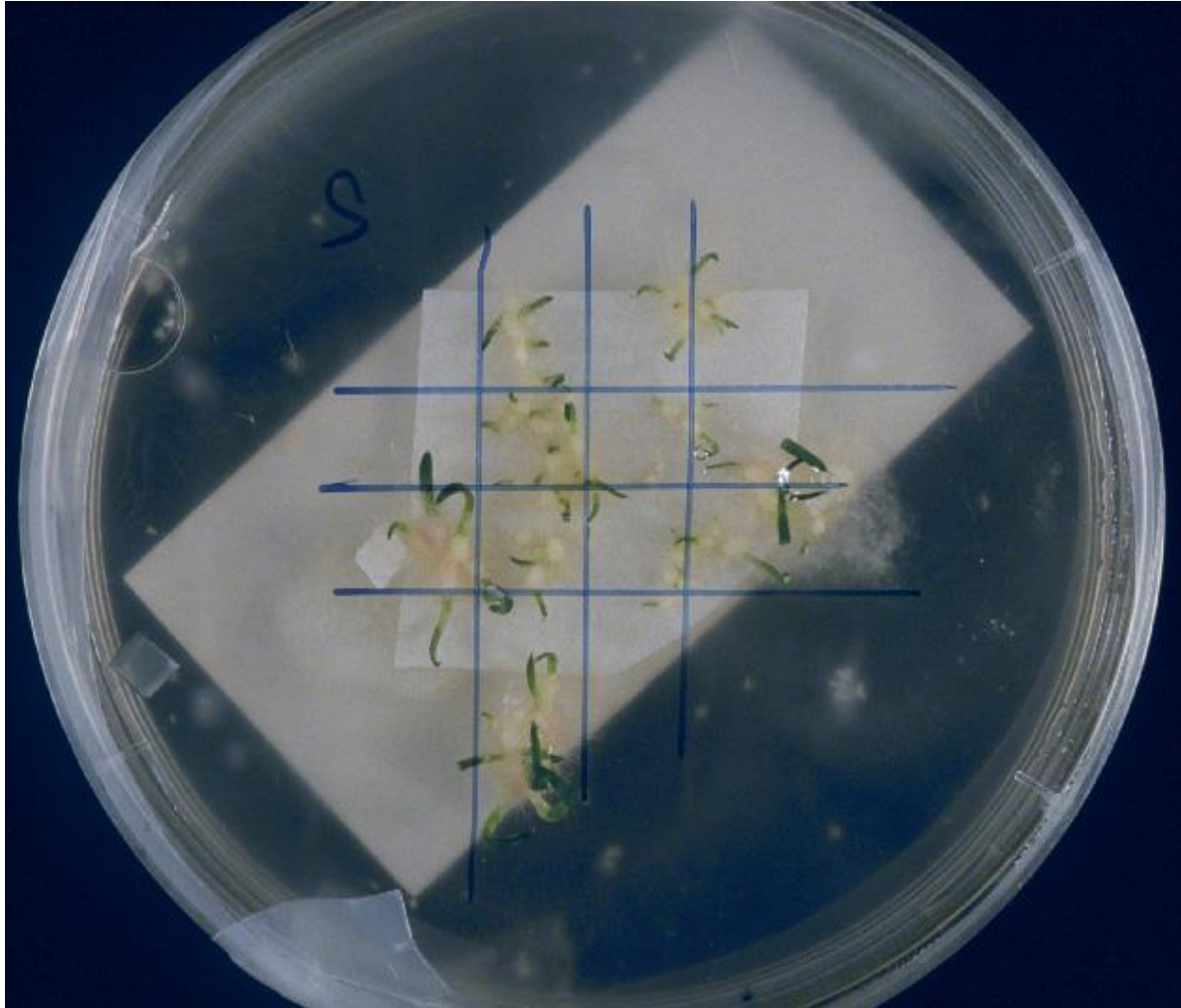


Species restoration: seedbanking for propagation

Caladenia fulva:
hand-pollination, near
Stawell



Species restoration: ex-situ propagation for translocation



Caladenia fulva seedlings, RBGV, Melbourne

Ex situ conservation + Public Education



Threatened species beds, RBGV Melbourne

Public education



Threatened species beds, RBGV Melbourne

Finito – hopefully not!

