

Conserving plants in Australia's changing rural and urban landscapes

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Data

For 584 critically endangered and endangered
species

- Current status
- Habit
- Dispersal
- Region
- Past, present and future threats
- Population sizes
- Range
- Niche requirements
- Intrinsic vulnerability
- Adaptations

Past threats

The processes primarily responsible for a species being in its current state.

- (2) **dominant process**, influencing most or all of the populations and individuals
- (1) **important process**, not affecting most populations or most individuals

Landscape processes: Clearing for agriculture, feral grazing, domestic grazing, salinity, hydrology, disease, fire, urban and coastal development

Demographic processes: Narrow habitat, small range, low numbers, few populations

Other threats

Other processes: Mining, forestry, rubbish dumping, recreation, pollinator disruption, vehicle damage, dams, collecting, erosion, flooding

Grevillea caleyi R.Br.



Past

1 2 2 1

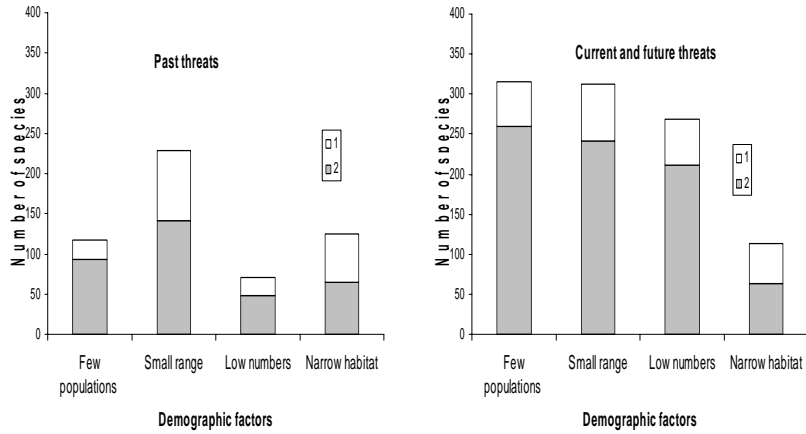
Fire, URBAN, SMALL RANGE, Few Populations

Present and future

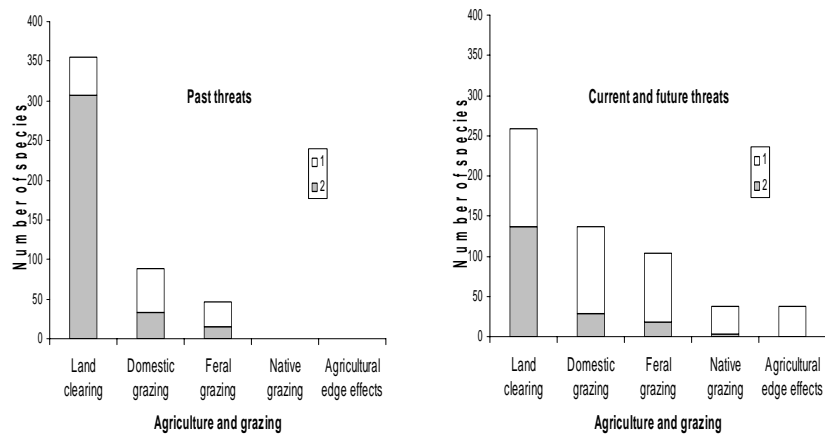
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Feral grazing, fire, URBAN, SMALL RANGE, low numbers, FEW POPULATIONS, road environment, fragmentation, seed predation

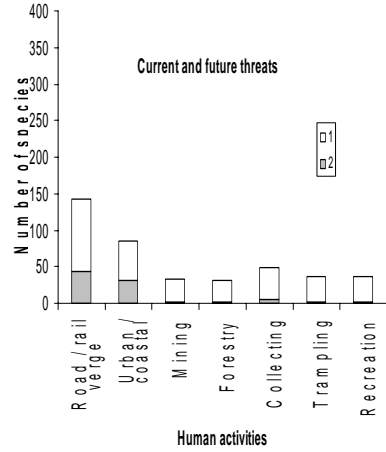
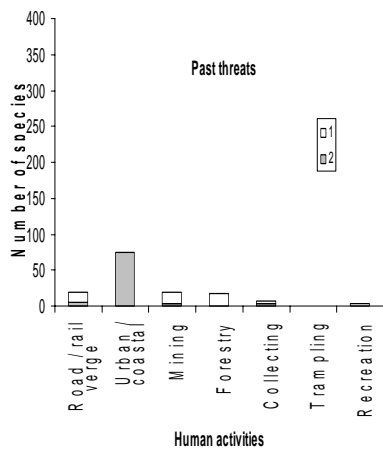
Demographic factors



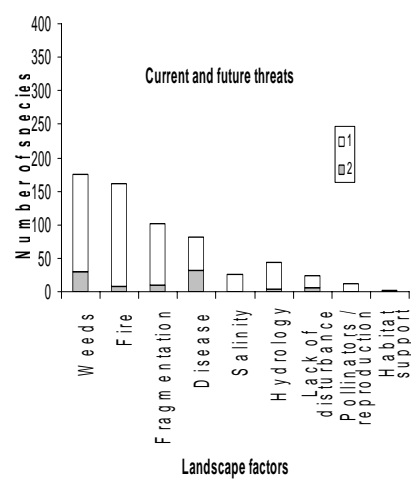
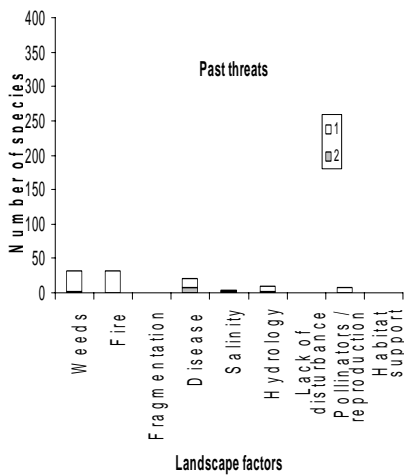
Agriculture & grazing



(Other) human activities



Landscape factors



Emerging issues

- Demographic and genetic factors
 - Limited sexual reproduction
 - Pollinator disruption
- Salinity
- Disease
- Habitat disturbance
 - Fragmentation
 - Trampling, mowing, fire wood collection
 - Road and dam construction
 - Bushrock removal
- Agricultural edge effects
- Herbicides, pollution
- Rubbish dumping
- Extreme environmental conditions
- Lack of fire
- Lack of 'supporting' habitat
- Plant collecting

Syndromes

- Syndrome 1.** Species with small to medium geographic ranges (usually 100 km^2 to about

Syndrome 2. Species with small to medium geographic ranges that intersect urban areas.

Syndrome 3. Narrow endemics with specific habitat requirements threatened by fire, weeds, disease, hydrological changes, salinity or other landscape-scale ecological changes.

Syndrome 4. Granite outcrops threatened by many factors including grazing by sheep, rabbits and goats, introduced weeds and dams for water.

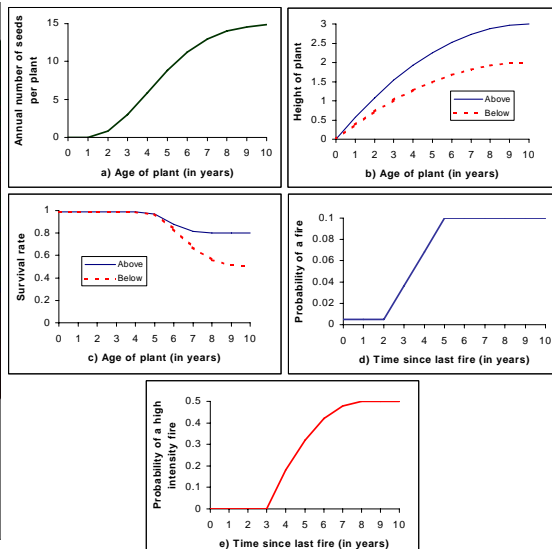
How can risk analysis help?

- understanding strategies to mitigate risk
- exploring alternatives that maximize robustness
- developing simple tools, approximations and rules of thumb

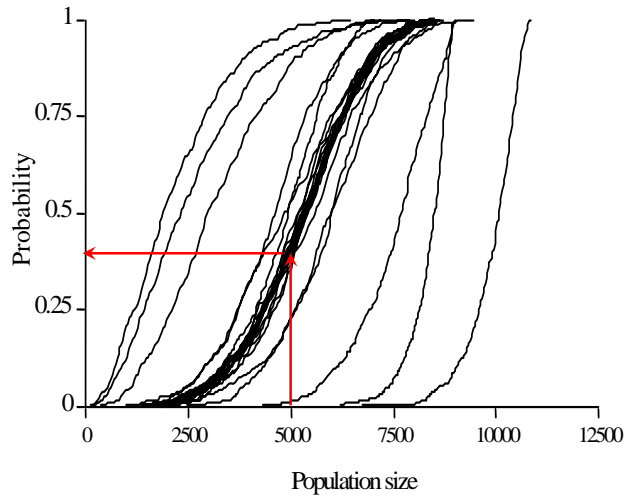
Model for *Grevillea caleyi*



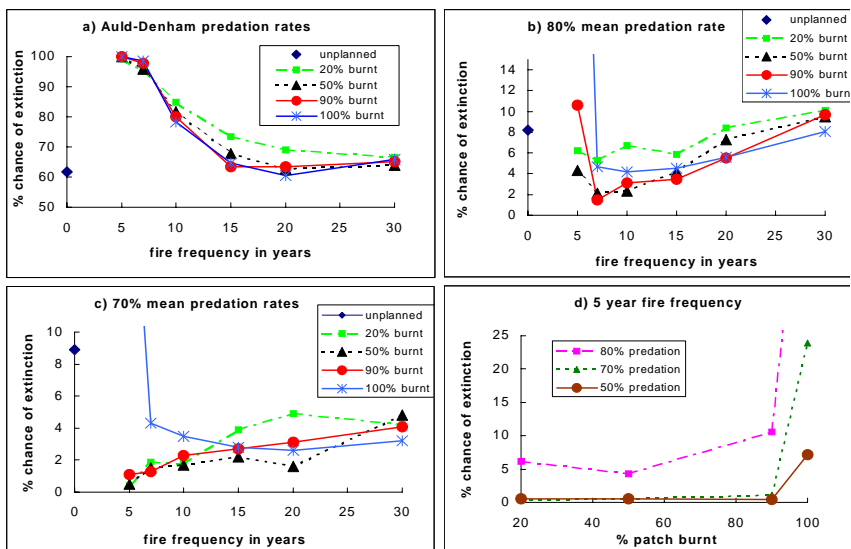
urban 0 2 4 km
 vegetated
 ■ *Grevillea caleyi*
 Regan et al. 2003



Sensitivity analysis



Sensitivity analysis





Australian Research Centre
for Urban Ecology



MONASH University



Australian Government
Department of Agriculture,
Fisheries and Forestry



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