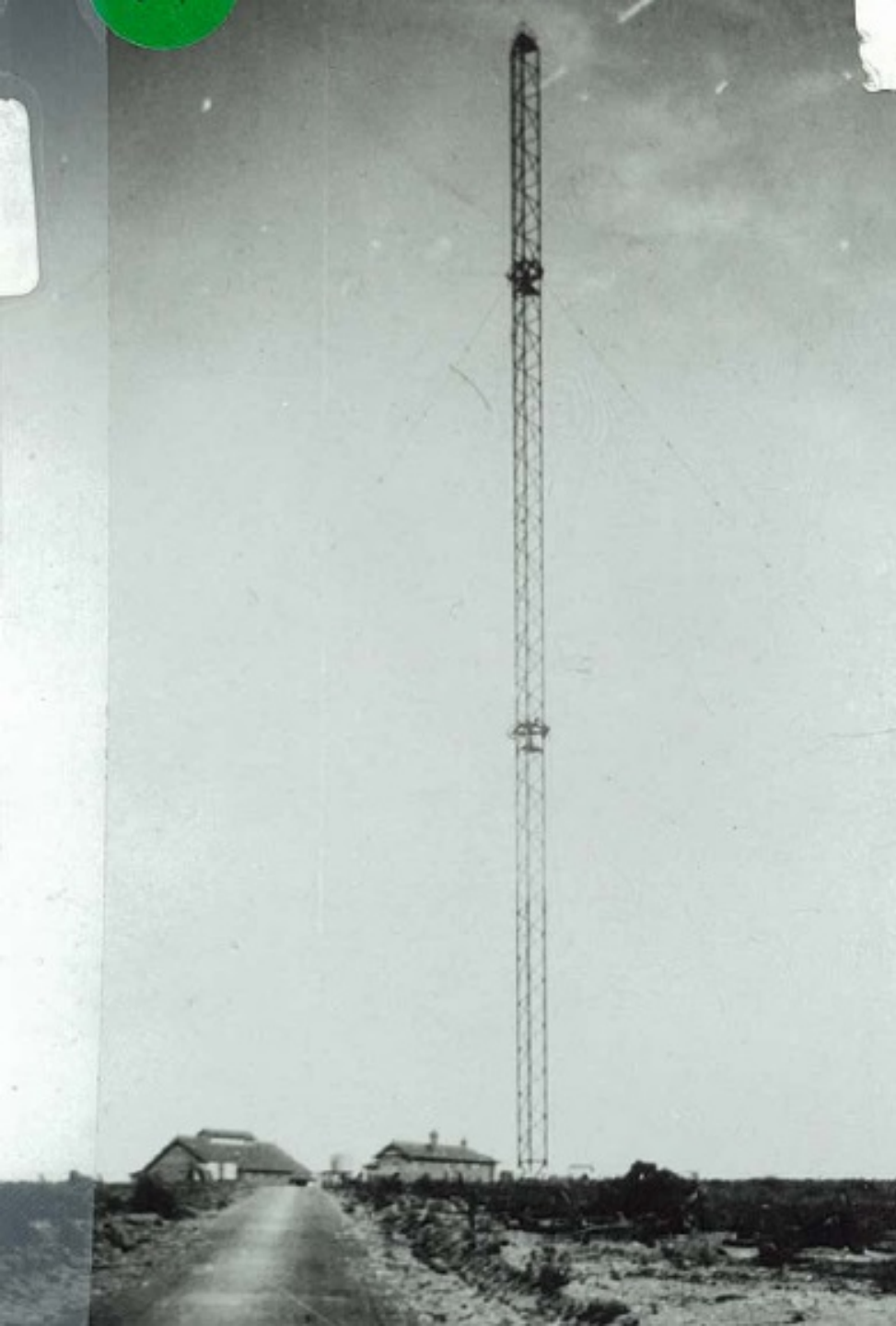




Margaret  
Matthews  
War on Weeds at  
Wireless Hill



# History of Wireless Hill

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- Site purchased by Federal Government in 1911 for construction of the Applecross Wireless Station
- Most of the bushland was completely cleared
- Site was planted with perennial veldt grass (*Ehrharta calycina*) for soil stabilization
- Annual burning until 1967





# Perennial Veldt Grass

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- Introduced from South Africa as a pasture plant
- Perennial so it dies down after summer but grows and spreads from underground roots
- Seeds prolifically
- Competes with native plants
- A significant weed in urban bushland, threatening biodiversity & increasing fire risk





# Regeneration

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- From 1967 the cleared area was not actively managed & native species began to slowly regenerate over time from the soil seed bank & surrounding bush
- Wireless Hill Reserve is a significant remnant of Banksia woodland south of the Swan River
- Priority 1 reserve under the CoM's bushland Priority system
- Bush Forever Site no. 336





## Friends of Wireless Hill

- To protect, restore, conserve and sustain
- A community group dedicated to conserving & protecting the bushland of Wireless Hill, through education, active rehabilitation & controlled management
- Planting days
- Species mapping & weed mapping, herbarium
- Walks for public & groups

# Weed control

- Regular weeding: 2<sup>nd</sup> & 4<sup>th</sup> Sundays & individuals other times
- As well as perennial veldt grass there are many other South African weeds: Gladioli, freesias, Lachenalia, annual veldt grass, wild oats, gazanias
- There are also love grass, Geraldton carnation, brassicas and flat weeds
- Woody weeds such as Geraldton wax and acacias
- Occasional occurrences of black flag which we remove as soon as we see them



Work from the best areas out towards degraded areas;

Focus on weed control as the main priority;

Limited plantings due to the drying climate; preferable to control weeds & encourage natural revegetation

We use a serrated kitchen knife to cut under the roots, disturbing the soil as little as possible

Bag & remove weeds to prevent nutrient (Phosphorus) release (JF)

## Principles of bushland management

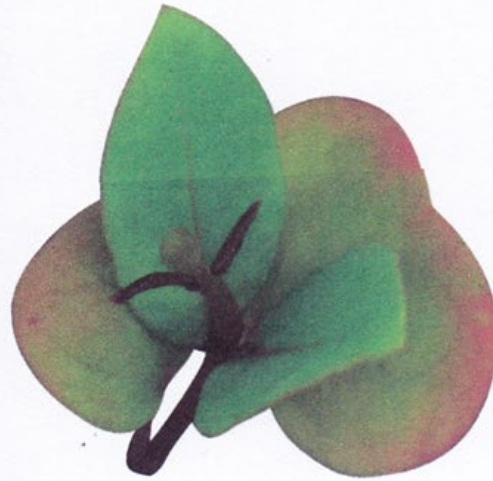
# Hand weeding vs. Spraying

- The City of Melville was blanket spraying the bush with Fusilade & spraying the edges of paths with glyphosate, “best practice”
- Over several years we observed native plant deaths including orchids due to Council spraying with Fusilade
- Veldt grass often survived spraying!
- Path edges were eroding & paths collapsing
- In 2008 Kings Park published research showing herbicide fluazifop-p-butyl (Fusilade & its relatives) adversely affects seedling development of native species





A 3-month old *Eucalyptus marginata* seedling subjected to the herbicide Fusilade Forte™ with visible signs of stress on the cotyledons and juvenile leaves, including resprouting at the shoot tip in response to death of the original shoot tip.



A 3-month old *Eucalyptus marginata* seedling. Photos: Mark Bundock

Fusilade: implications for the germination, emergence, growth and health of Banksia woodland seedlings in WA, Deanna Rokich and Jack Harma, Australian Association of Bush Regenerators (AABR) WA Newsletter, Vol 16, 2008

- Fusilade & Fusilade Forte, applied at recommend rates have the potential to impede seed germination & emergence of native species.

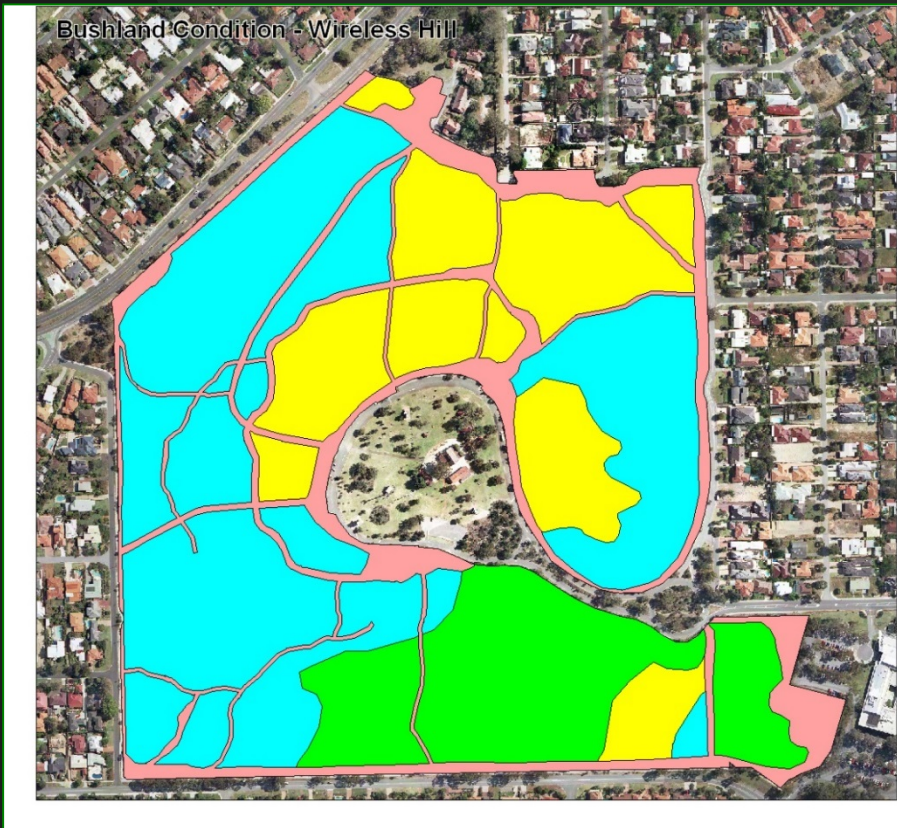
- Raises serious questions about the effect of the chemical on biological processes below ground or at soil surface level.

# Manual Weed Control Required

- Contrary to previous claims the herbicides are not grass selective, non-residual or rapid in breakdown, actually remaining in the soil for at least three weeks (and possibly much longer)
- The research confirms our observations at Wireless Hill
- Any spraying of emerging weeds inevitably means more of our unique West Australian orchids will be destroyed as the leaves are virtually indistinguishable from grasses at that stage
- After a long public battle with Council staff the Friends were given the best areas of bush to manage by hand



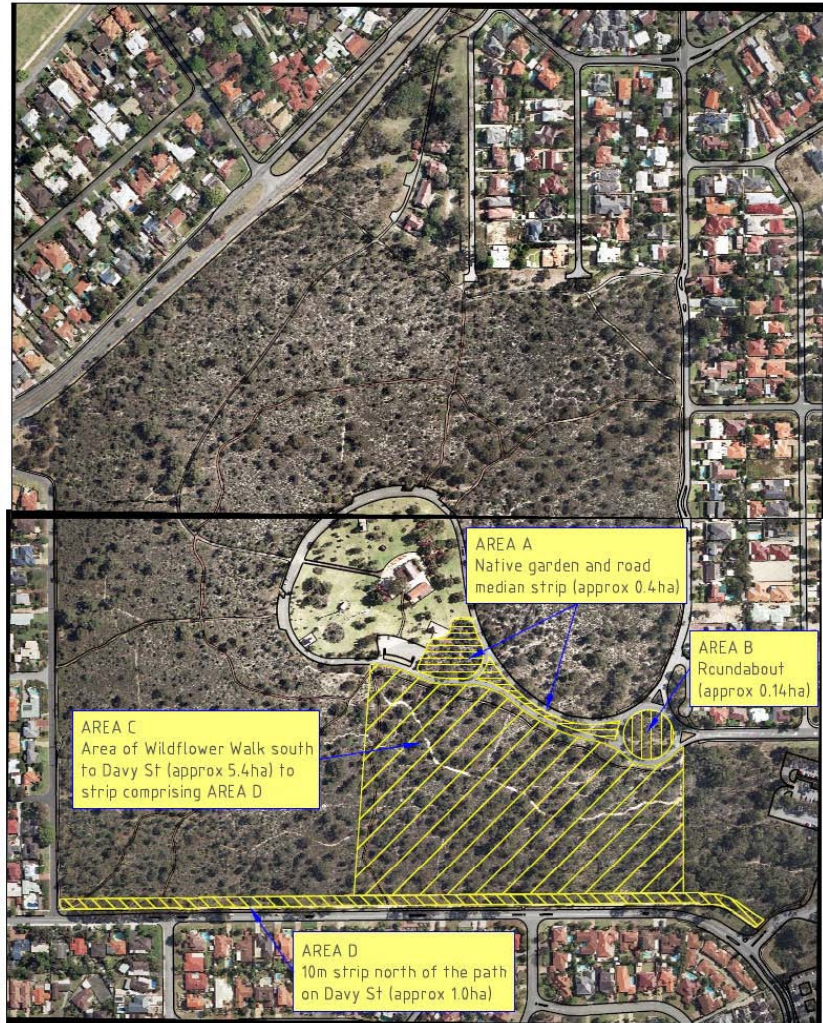
# Bushland Condition Map 2005



- Green is bush in excellent condition, this is the area where the Wildflower Walk has been constructed
- Blue is very good, Yellow is good, Pink is degraded
- Much of the reserve is in excellent to very good condition: an improvement from the previous 1998 survey which classified most of the reserve “good to very good condition”.
- Condition is affected by management practices & use. Degraded areas are located around the perimeter of the Park and along tracks where weeds can take hold & fire and trampling can lead to habitat disturbance & vegetation loss.

# FOWH Agreed Weed Management Areas

## FOWH Agreed Weed Management Areas



The City of Melville & the Friends of Wireless Hill 2007 agreement:

- the Friends will control weeds by hand weeding in the area shaded yellow (6.94 ha) Wireless Hill Reserve Management Plan, City of Melville, October 2008; and
- the Council will not spray in this area.
- Agreement due to Friends lobbying Council to stop spraying.

# Practicalities

- Initially nearly 7 hectares to be manually hand weeded: group of about 8, mostly over 70 years old
- Difficult to engage volunteers to weed: hard work requiring persistence
- Tried Veldt Grass Vendettas, Grab a Gladi days, school groups
- How could we meet our commitment to the Council & protect the biodiversity of Wireless Hill?
- Inspiration from City of Joondalup tender





## Swan Alcoa Landcare Program

Using grants the Friends have employed trained bush care workers to hand weed once a week/fortnight

- SALP 2010-2011 - \$11,832
- SALP 2011-2012 - \$11,531
- SALP 2016-2017 - \$14,414
- SALP 2017-2018 - \$8,800
- SALP 2018-2019 - \$6,656
- SALP 2019-2020 - \$6,353
- SALP 2020-2021 - \$8,900





natural resource  
management program



# State Natural Resource Management

- NRM 2010 -2011 - \$29,029
- NRM 2012 - 2013 - \$17,150
- NRM 2014 - \$27,840
- NRM 2016 - 2017- \$19,720
- NRM 2018-2019 - \$13,728
- NRM 2019-2022 - \$19,500



South East Regional Centre for Urban Landcare

# Partnership with SERCUL

- Trained bush crew workers
- Money management
- Sponsorship (auspicing)
- Advice , expertise, networking









# Rapid results

**2009**



**2011**





Weeds in an  
unsprayed/unweeded  
area of the Park  
February 2011





# New area

- In 2013 we expanded our efforts into the area adjacent to the Wildflower Walk
- Total 8.74 hectares now being manually weeded
- City of Melville grant \$9,941 for first year
- Now included in other grants



# Change

- We proposed in 2012 that funds currently spent on spraying at Wireless Hill should employ trained workers to hand weed instead - much better value for the City of Melville, leading to a reduction in the weed density & an increase in the health & biodiversity of the bush
- Rejected by staff at the time but now most weed control managed by the City of Melville at Wireless Hill is manual



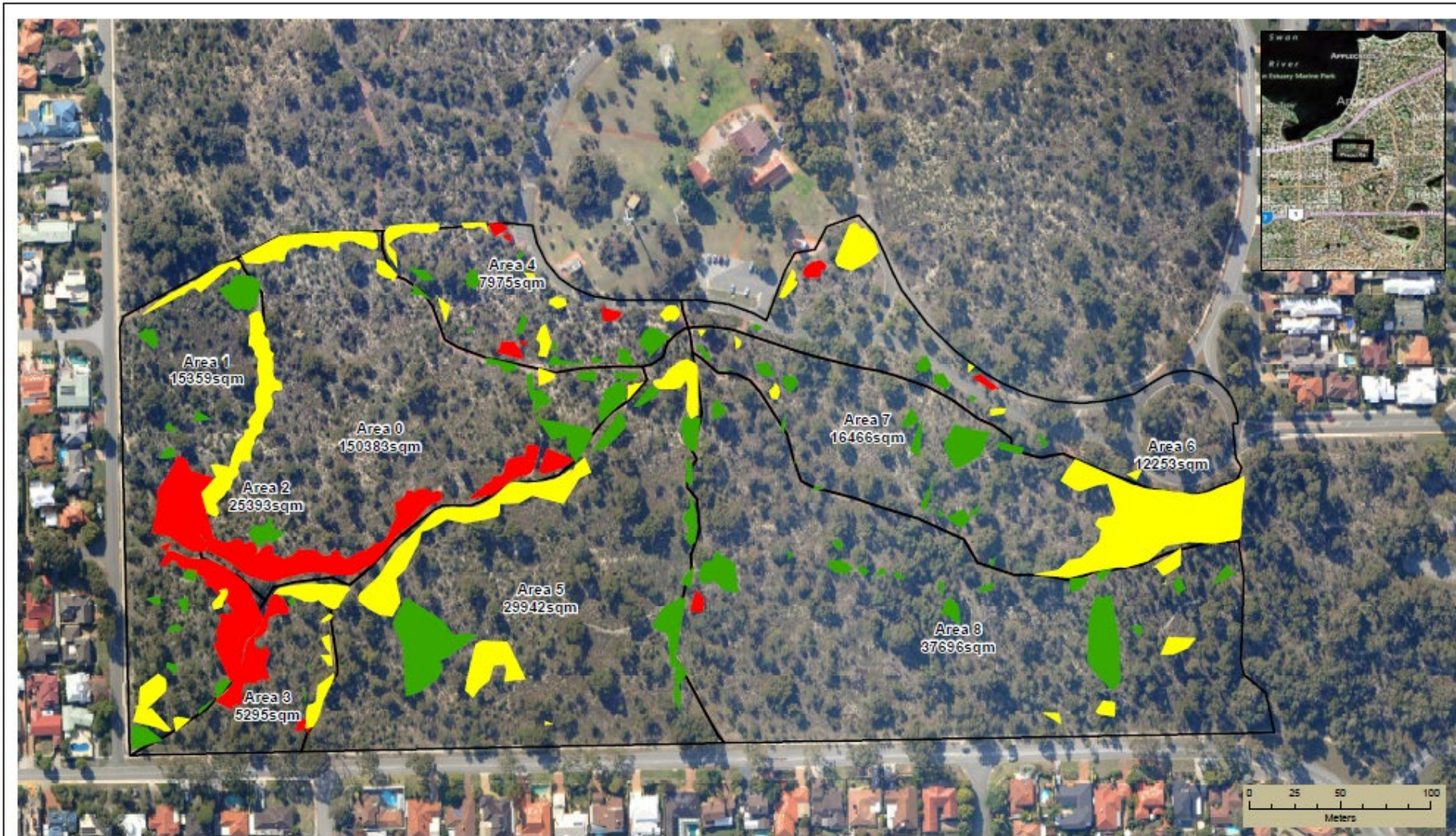


Figure 4 - Perennial Veldt Grass (*Ehrharta calycina*) Density





Wireless Hill Weedmapping August 2014- Perennial Veldt Grass (*Ehrharta calycina*)

  
**SERCUL**  
 South East Regional Centre for Urban Landcare  
 69 Horley Road Beckenham WA 6107  
 T: 08 9458 5664 F: 08 9458 5661  
 E: dittstreb@sercul.org.au W: wwwsercul.org.au

Program: Wireless Hill Weedmapping  
 Project: Wireless Hill Park  
 Location: Wireless Hill Park, Ardross




Scale: 1:2,579  
 Original size: A4  
 Imagery from:  
 Source: Nearmap

Date drawn: 12/08/2014  
 Revision:  
 Drawn by: D.M  
 Checked by: T.E

© This plan must not be reproduced without the permission of SERCUL

File: J:\GIS\Data\EDIT\WIRELESS HILL\POI\WeedMapping 2014\Wireless Hill\_Weedmapping\_August2014\PerennialVeldtGrass (Ehrharta calycina)

**Legend**

-  Paths
-  Low Density 0-5%
-  Medium Density 6-75%





# Perennial grasses 2016





# Photopoint monitoring

**Photopoint 1 November 2017**



**Photopoint 1 March 2019**





# Photopoint monitoring

**Photopoint 2 November 2017**



**Photopoint 2 March 2019**





# Photopoint monitoring

**Photopoint 3 November 2017**



**Photopoint 3 March 2019**



# Outcomes

- Dramatic decrease in Veldt grass occurrence
- A notable increase in the occurrence of native grasses: *Amphipogon turbinatus*, *Austrostipa compressa* (compact needlegrass) & *Neurachne alopecuroidea* (foxtail mulga grass). The increase in the *Austrostipa* is particularly obvious
- Improved native plant coverage in general. Fire affected area (photo point 2) has recovered with virtually no weeds
- Bulbous weeds, flat weeds & annual grasses are still a major challenge following winter rain but they are not present all year as perennial grasses are



# Challenges

- Maintaining & growing the group
- Expanding our intensive effort (we have always maintained a watching brief, removal of particular weeds & plantings for the whole Park)
- Avoiding damage to regenerating bush & emerging orchids during winter and spring
- Preventing the Park being loved to death







Thank you

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