

# HAZARD REDUCTION GRASS TREE BURNING PROGRAM

*A mitigation strategy to reduce bushfire risk  
within the City of Joondalup*

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# PRESENTATION OUTLINE



*Photograph: 2000 - unplanned bushfire event within Central Park, Joondalup*

- Introduction
- Background
- Hazard Reduction  
Grass Tree Burning  
Program
- Next Steps...



# INTRODUCTION

*Photograph: 2016 - Grassbird Avenue, Joondalup: Post unplanned bushfire event opposite Yellagonga Regional Park*

# BUSHFIRE RISK MANAGEMENT



Photograph: 2011 - unplanned bushfire event within Central Park, Joondalup

- Bushfire risk management is a key responsibility for local government, including meeting legislative obligations under the *Bush Fires Act 1954* and *Emergency Management Act 2005*.
- In April 2019 Council noted the establishment of the City's Hazard Reduction Grass Tree Burning Program.
- The City has been improving its knowledge and prioritised approach to be taken in regard to bushfire mitigation to reduce the overall risk of bushfire.

# OBJECTIVES



*Photograph: 2016 - unplanned bushfire event within Yellagonga Regional Park, Joondalup*

- Protecting life, critical infrastructure, property and assets from unplanned bushfire events.
- Protecting the landscape, ecological and amenity values of the bushland.
- Protecting the bushland's flora and fauna diversity.
- Using a coordinated and prioritised approach to reduce bushfire risk.
- Fulfilling obligations under fire related legislation and undertake best-practice fire management.
- Increasing community bushfire education and awareness.

# HIGH INTENSITY BUSHFIRE EVENTS



*Photograph: 2019 - unplanned bushfire event  
within Yellagonga Regional Park, Joondalup*

Bushfire Risk Management, including managing heavy fuel loads, will assist in reducing the risk and intensity of an unplanned high intensity bushfire event, which is likely to cause:

- Severe impact on the health and biodiversity of the bushland.
- Significant damage to native flora and fauna.
- Destruction of habitat and conservation values over large areas.
- Extreme difficulty in suppressing, fighting and controlling the fire.

# FIREFIGHTER SAFETY



Hazard reduction burns are essential for firefighter safety. Unmanaged heavy fuel loads:

- Increase the likelihood of firefighter injury and/or death.
- May mean firefighters are not able to directly combat a fire but may let it burn to the firebreaks or use fire as a firefighting tactic.
- Have contributed to burn-over of firefighting appliances and potential increased loss of houses.

# BUSHFIRE MITIGATION ACTIONS – City of Joondalup



*Photograph: 2019 - firebreak improvement works adjacent to homes at Craigie Open Space, Craigie*

- Weed control (mechanical and chemical)
- Firebreak and fire access way installation and maintenance
- Manual fuel load reduction
- Controlled access to sites
- Community education and awareness
- Firebreak inspections and fuel assessments.

**NEW: Hazard reduction Grass Tree burning.**



# BACKGROUND

*Photograph: 2016 - Warwick Open Space bushland, Warwick*

# FUEL AND FUEL LOADS



*Photograph: 2019 - Grass Trees with large dry dead skirts within Yellagonga Regional Park, Joondalup*

- Contributes in part to how hot a fire can be and how fast it can spread.
- Is a key factor that land managers need to manage.
- The term “fuel load” indicates the amount of fuels that will be consumed during a bushfire and includes the dry dead skirts of Grass Trees, dead leaves, twigs and bark.
- Fuel load is expressed in terms of tonnes per hectare (t/ha).

# BURNING TERMS



*Photograph: 2019 - DFES planned hazard reduction burn at Warwick Senior High School for the DoE*

- Interchangeable burning terms include: hazard reduction burning, prescribed burning, controlled burning, and planned burning.
- These terms describe burning in a predetermined area for the management, control and reduction of fuel loads.
- Burning is often referred to as prescribed burning because they follow a 'prescription'.
- The term 'Mosaic Burning' is commonly used to describe burning patches within a burn area to leave a mosaic pattern of burnt and unburnt areas.

# BURN PRESCRIPTIONS



*Photograph: 2019 - DFES planned hazard reduction burn at Warwick Senior High School for the DoE*

A Burn Prescription sets out the details for conducting a particular burn, including:

- Objective and description of the burn
- Personnel needs and safety
- Fauna species habitat and rare flora
- Community consultation
- Target weather conditions
- Hazards that may be encountered
- Smoke consideration
- Traffic control.

# LOW INTENSITY BURN CONDITIONS



*Photograph: 2014 - planned hazard reduction  
Grass Tree burn – Ridgewood Park, Wanneroo*

- Hazard reduction burns are generally undertaken in appropriate weather conditions so the fire burns slowly at low intensity.
- Hazard reduction burns are normally conducted from autumn to spring, when:
  - Weather is mild
  - Fuels are reasonably moist
  - Fire behaviour is easier to manage and control.

# GRASS TREES / BALGAS



- Grass Trees make up a high proportion of the vegetation within the City's reserves.
- Many have long unburnt dead skirts which are an extreme source of fuels as they are highly flammable.
- The tightly-packed leaf bases shield the stem from heat and allow Grass Trees to survive the passage of fire.
- Fire from a low intensity burn can stimulate Grass Trees to flower and seed.

# DFES LOW INTENSITY HAZARD REDUCTION BURNING VIDEOS



# DFES HAZARD REDUCTION BURN: WARWICK SENIOR HIGH SCHOOL



DFES hazard reduction burn at Warwick Senior High School on behalf of the Department of Education. The aim of the burn was to:



- Reduce fuel loading of the burn area.
- Protect Warwick Senior High School.
- Provide a safer community.
- Reduce negative impacts to environmental sensitivities.



# DFES / DBCA HAZARD REDUCTION BURN: YELLAGONGA R-PARK



DFES / DBCA joint hazard reduction burn within 10 ha of un-allocated crown land in Yellagonga Regional Park. The aim of the burn was to:



- Reduce fuel loading of the burn area
- Provide a safer community
- Protect life and properties, including the hospital and civic centre
- Reduce negative impacts to environmental sensitivities.



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# HAZARD REDUCTION GRASS TREE BURNING PROGRAM (COJ Managed Crown Land)

*Photograph: 2014 - planned hazard reduction Grass  
Tree burn - Ridgewood Park, Wanneroo*

# HAZARD REDUCTION GRASS TREE BURNING PROGRAM



*Photograph: 2014 - planned hazard reduction  
Grass Tree burn – Ridgewood Park, Wanneroo*

- Not intended to replace existing fuel load reduction activities within City managed crown land/reserves, but rather to supplement those activities if required.
- Supported by the Department of Fire and Emergency Services (DFES).
- Planned and conducted by experienced personnel.
- Planned so as to reduce impacts to the community and the environment.
- Targets the burning of selected Grass Trees, including underlying and nearby leaf litter.

# TARGETED GRASS TREE BURNING PHOTOS



*Photographs: 2014 - planned hazard reduction Grass Tree burn – Ridgewood Park, Wanneroo*

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*Photograph: 2014 - planned hazard reduction Grass Tree burn – Ridgewood Park, Wanneroo*

# WORKING TOGETHER TO REDUCE BUSHFIRE RISK



Proposed hazard reduction Grass Tree burning within appropriate crown land reserves managed by the City will be investigated collaboratively with the:



- Department of Fire and Emergency Services (DFES)
- Department of Biodiversity, Conservation and Attractions (DBCA) – Parks and Wildlife
- Friends Groups (in relation to their specific reserves).

*Photograph: 2019 - DFES planned hazard reduction burn at Warwick Senior High School for the DoE – With observers from Friends of Warwick Bushland*



# WARWICK OPEN SPACE BUSHFIRE MITIGATION WORKS

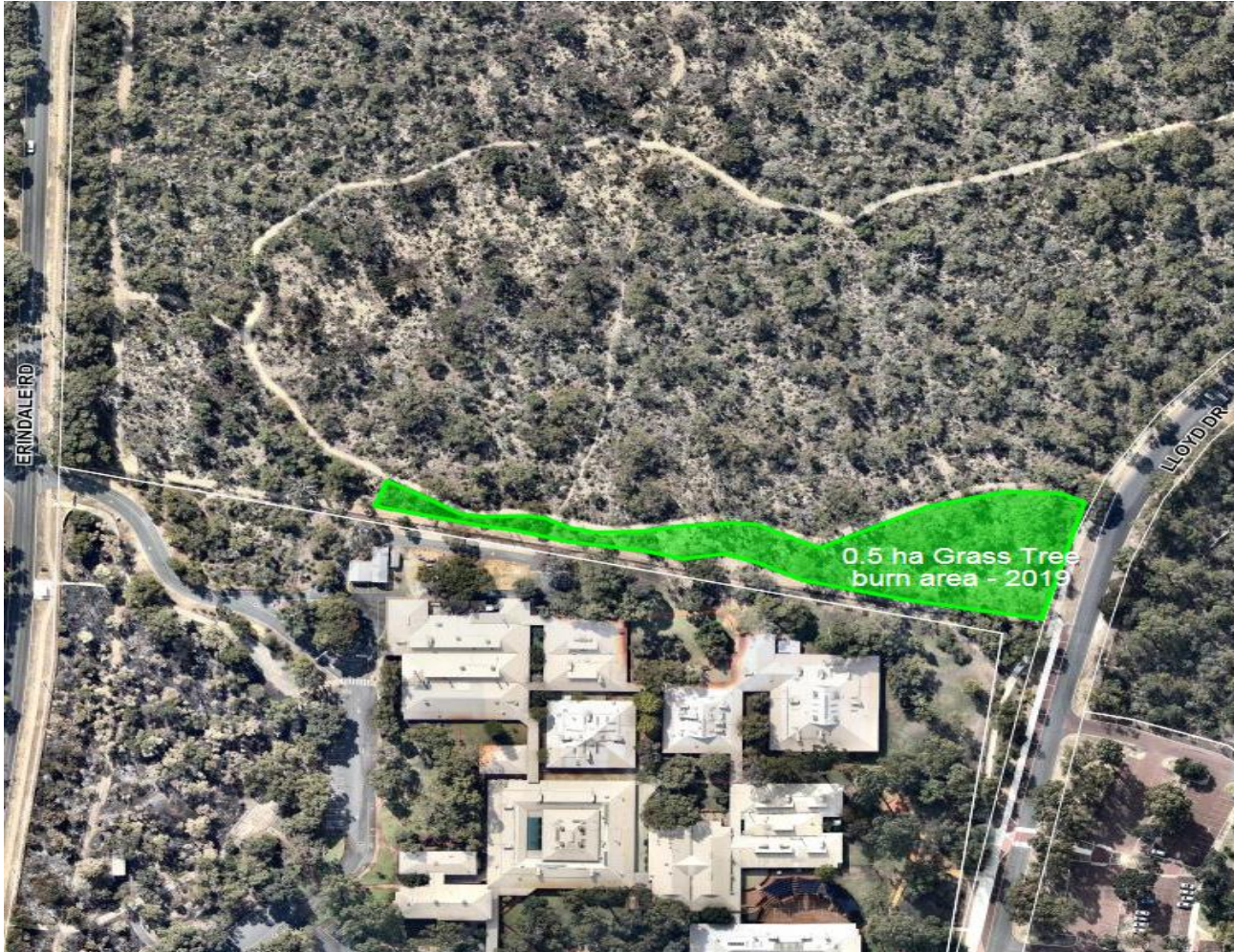


*Photograph: 2018 - manual fuel load reduction works within Warwick Open Space bushland*

To reduce the risk of bushfire to the school the following works have been undertaken:

- Manual fuel load reduction within 2 hectares of bushland adjacent to and north of the school.
- Firebreak access track improvements adjacent and north/west of the school.
- Vehicle access gate installation within the northern fence to provide access to and from the school and bushland.
- Improved turn around section between firebreaks for firefighting vehicles.

# WARWICK OPEN SPACE BUSHLAND WINTER HAZARD REDUCTION GRASS TREE BURN



- Further reduce bushfire risk to Warwick Senior High School.
- Recommended targeted burning of Grass Trees, including underlying and nearby leaf litter.
- Within 0.5 hectares north of the school.

*GIS aerial view: 2019 - Warwick Open Space bushland north of the school*

# POST-FIRE WEED CONTROL



*Photograph: 2019 – post planned hazard reduction burn at Warwick Senior High School*

- Hazard reduction Grass Tree burning will take place at a time that supports the regeneration of native floristic species.
- Post-fire weed control will be undertaken using the City's 'Post-Fire Weed Management Guidelines'.
- Burnt areas will be monitored to assess weed growth to support the sustainability and regeneration of native vegetation.



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**NEXT STEPS...**

*Photograph: 2019 - Warwick Open Space bushland, Warwick*

# NEXT STEPS....



- Implement the 0.5 ha hazard reduction Grass Tree burn within Warwick Open Space bushland that is crown land managed by the City.
- Review outcomes and learnings from the Warwick Open Space bushland hazard reduction Grass Tree burn.
- Discuss further potential hazard reduction Grass Tree burn locations at Warwick Open Space bushland with DFES and Friends of Warwick Bushland.
- Identify other potential reserves for future hazard reduction Grass Tree burns to commence from Autumn 2020 onwards.
- Consult with relevant Friends Groups re specific hazard reduction Grass Tree burn locations and planning.

**THANK YOU...  
ANY QUESTIONS?**

