## Fire management in the Walpole-Nornalup area

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## Outline of presentation

- Bushfire in the Warren Region: cause & extent
- Lightning ignition as an ignition source
- Fuel dynamics in tall eucalypt forest
- Impacts of high intensity bushfire
- Remote sensing applications for fire mapping
- Mosaic burning study update
- Other current fire research



# Bushfire cause and extent in the Warren Region





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# Trend in number of fires ignited by lightning, Warren Region 1978-2017





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### Monthly occurrence of lightning ignition in the Warren region 1978-2017



GOVERNMENT OF

#### Lightning ignitions around Walpole 2012-2017





#### Fuel load in karri-tingle forest fuels Data collected by quadrat sampling, Hilltop block

*Shrub layer density reduces with time after fire* 

Deep surface layer of compact leaves and bark develops after several decades without fire

Deep surface fuel will burn away completely under dry summer conditions



#### Karri-tingle forest fuels Unburnt since before 1960





Nuyts bushfire March 2001 Photos taken 8 months post fire



Graticule shown at 5 minute intervals

The Parks and Wildlife Service does not guarantee that this map is without flaw of any kind and dischims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

Roads and tracks on land managed by Farks & Wildlife may contain unmarked hazards and their surface condition is variable. Exercise caution and drive to conditions on all roads.

### Mosaic burning – London/Surprise



## Mosaic burning – London/Surprise

Publications to date:

- Banksia quercifolia mild patchy fires favour persistence of a plant with a juvenile period (Burrows & Middleton 2016)
- Lichen and bryophyte richness greater in mosaic of post-fire seral stages than in homogeneous post-fire landscape (Ward et al. 2017; Wills et al. 2018)
- Invertebrates richness linked to vegetation, peaking in early post fire years in Caldyanup heathlands, >6 years in forest (Wills et al. in review)



Hannah Etchells PhD student, UWA Karri forest and quokka response following the 2015 O'Sullivan fire





Vegetation response to recurrent fires in jarrah forest

- Two experimental sites (Nannup, Perup)
- Fires at different intervals and seasons, including no fire
- Shortest intervals 4 years between fires
- Species assemblages changed significantly through time but the changes were independent of fire treatment.
- No species lost
- Burrows et al. in press