Learning from the Past:
The many uses of fire history mapping

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Bushfire CRC Project B1.1: Managing fires in forested landscapes in south-west Western Australia

Introduction

•In the past, fires in southwestern Australia were recorded on paper maps by the Department of Conservation and Land Management (CALM) and the Forests Department.

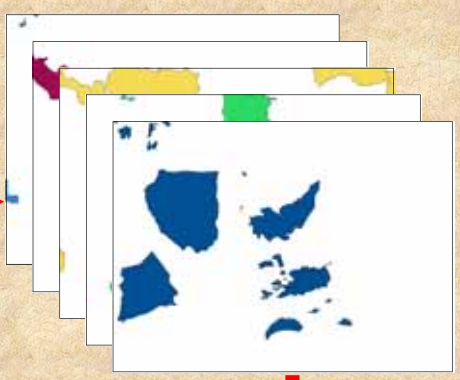
•Transfer of this information to a Geographic Information System (GIS) is seen as critical to land management in the southwest, particularly for fire planning.

•This poster describes the development and application of a fire history database for the southwest of WA.

Development of the fire history database

Old **fire maps** have been photographed and stored on **microfiche** since 1953 (in some regions since 1937)

Microfiche maps were **digitised** and fire information for each year was captured into a **Geographic Information System** (GIS) using ArcView



When fires for all years (1953-2005) are **merged** together, the resulting **polygons** form the **fire history database**. This contains information on all fires that have occurred across the landscape

Application of the fire history database to fire management

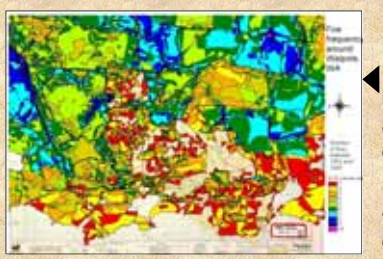
Fuel age maps are useful in **fire suppression** activities, and form the basis for designing burn plans to maintain a **mosaic** of fuel ages across the landscape

Fuel age maps

Fire history for Walpole area, WA (1953-2005)

Attribute data for selected polygon (shaded in yellow)

Fire season	Fire type	Season	Area (ha)	Perimeter (m)	District	Comments
						DOES NOT FIT WELL BETWEEN IMAGES
1961-62	PB	AU	10393	98481	13	
1965-66	PB	AU	6494	81700	13	
1969-70	PB	SP	11548	65335	13	
1974-75	PB	SP	4757	30633	13	
1980-81	WF		1356	15214	13	PP. CLOSED SEASON
1981-82	PB	SP	3174	23483	13	
1988-89	PB	SP	4790	31311	13	
1994-95	UN		4787	31696	13	PRIVATE BURN
2002-03	PB	SP	4780	38175	0	



Fire frequency maps

Fire frequency is mapped here as the number of fires that have occurred since 1953.

•Red, yellow and orange polygons show areas burnt 1, 2 and 3 times respectively, and occur in areas of mature tingle forest in which fire has been deliberately excluded as a result of management planning decisions.

•Blue and green polygons occur in zones of jarrah forest and sedgelands that are drier and burn more frequently as a result of both prescribed burning and unplanned fires.

Conclusions and further work

•The fire history database will become a corporate database that can be used by land managers and scientists;

•The database will be updated each year with fire boundaries supplied by District offices;

•Patchiness within fires will be examined with the use of remote sensing to look at fire mosaics at a finer scale;

•CALM's Bushfire CRC project is using this fire history database as a first step to identifying sites with contrasting fire regimes within which the diversity and abundance of flora, fauna, invertebrates, fungi and cryptogams will be compared.

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