PROGRAM B

DOES AN EMERGENCY RESPONSE PROTECT OUR WATER RESERVOIRS?

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Background

- Bushfires in water reservoir catchments can initiate water quality problems
- Australian water reservoirs are surrounded by flammable vegetation
- Bushfires have and will continue to occur in water reservoir catchments
- Water supply is an important issue as demonstrated by the recent media interest following the Melbourne 2009 Fires

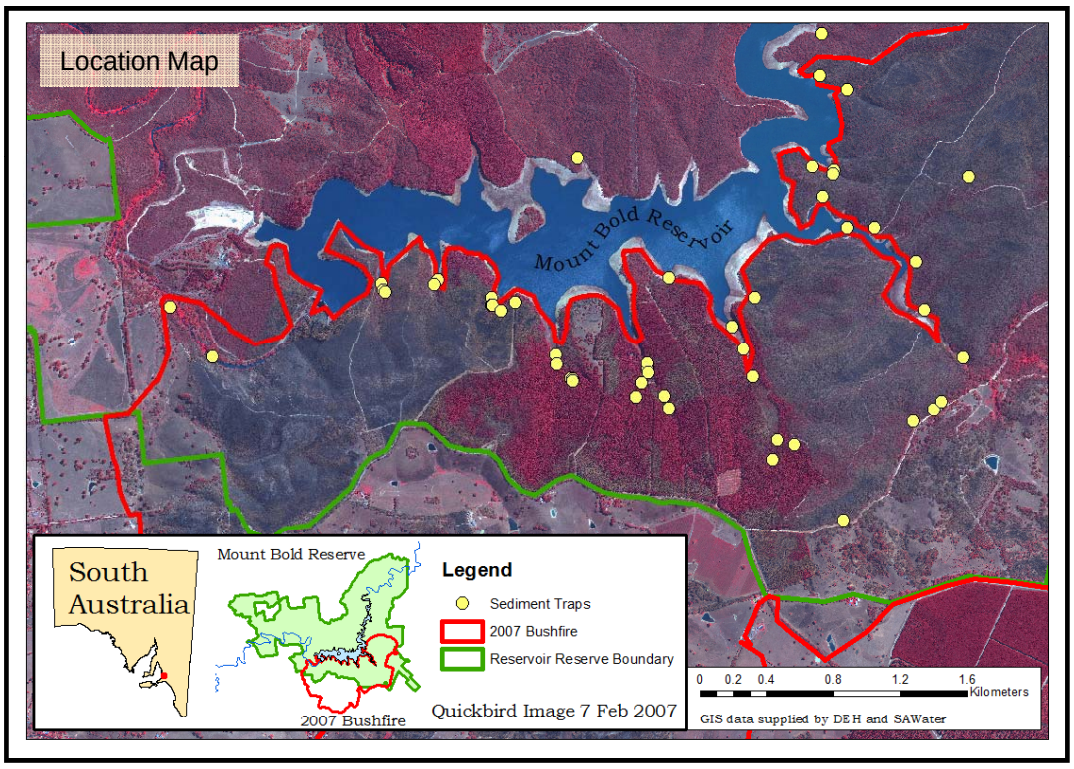
Media Headlines

Fire-affected catchments emptied to save water supply *ABC TV 16/2/09*
Bushfires contaminate Melbourne's water supplies *Herald newspaper 17/2/2009*
Fires could rob Melbourne of water for decades to come *ABC local radio 18/2/09*

Mount Bold Reservoir

Mount Bold Water Reservoir Case Study

Mount Bold is located 35 km south of Adelaide (138^{0}41'30''E, 34^{0}58'0"S). Mount Bold reservoir stores water for the Happy Valley water treatment plant that supplies potable water to the city of Adelaide.



Australian Case Studies

Case studies of fire affected water reservoir from around Australia were reviewed including 2001 Sydney Fires, 2003 Canberra Fires, 2003 Victorian Fires 2009 Melbourne Fires

Failed Sediment Trap

Alternatives to emergency responses

Whilst bushfire are an inevitable part of managing Australian water reservoirs, there are numerous alternative management strategies. These include

- Advanced water treatment plants
- Prescribed fire
- Fire ignition management
- Diverting water

Fire Suppression

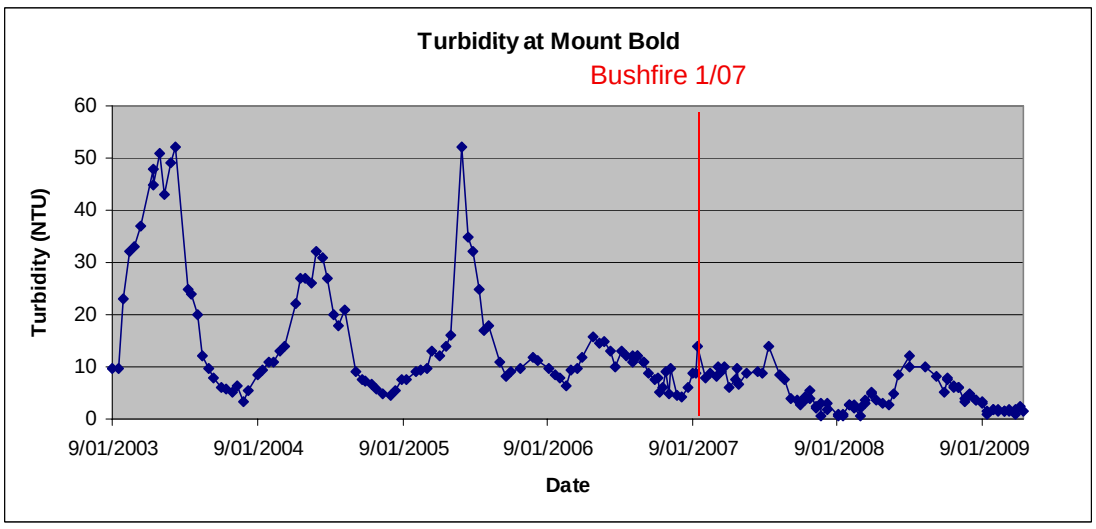
- Fire was ignited (10 Jan 2007) during extreme fire weather conditions with temperatures reaching 37.1˚ C
- The next day suppression was aided by milder conditions with temperatures only reaching 25.4˚ C
- The entire water supply catchment was not burnt due to the milder conditions allowing fire suppression efforts to be effective

Sediment trapping

- SA Water installed 53 sediment traps
- In April 2007 a 1 in 5 year rainfall event occurred
- Over 130 cubic meters of sediment was caught by the traps
- Over 49% of sediment traps had problems

Water treatment

- Water samples indicated that no water quality problems occurred. There was a slight raise in total phosphorus but the effect was temporary as values normalised by the next sampling period.
- The water treatment plant at Happy Valley copes with turbidity levels as high as 250NTU. After the fire, turbidity levels only reached 14NTU at Mount Bold.



Conclusion

Based on Australian case studies it is unlikely that all emergency responses will protect water reservoirs from bushfires. In the case of Mount Bold the emergency response assisted protection by reducing the fire extent and capturing some of the sediment.

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