Kemendok National Park & Kemendok Nature Reserve Fire Management Strategy 2012

Office of Environment & Heritage

This strategy should be used in conjunction with aerial photography and field reconnaissance during incidents and the development of incident action plans.

This strategy is a relevant Plan under Section 38 (4) and Section 44 (3) of Rural Fires Act 1997.

The NSW National Parks and Wildlife Service is part of the NSW Office of Environment and Heritage.
Published by the NSW Office of Environment and Heritage, November 2012.

Contact:
PO Box 318 Buronga 2739 NSW. Ph 03 5021 8900

ISBN 978 1 74293 911 7 OEH 2012/0890 | Date Approved: October 2012

Related documents

- Office of Environment, and Heritage (2011 - 12) *Fire Management Manual*

Additional notes

There are many other informal tracks throughout the park that have not been mapped. These tracks will not be maintained or will be actively closed.

Communications Information

Service	Channel	Location and Comments
NPWS HF Radio	1 - 6	•
RFS PMR Radio	55	• Mallee Cliffs
UHF - CB	3	• IMT may change channel if required
Mobile Phone Next G		• Good coverage with external aerial
Mobile phone GSM / 3G		• No service available
Satellite phone		• Yes, note globalstar network has intermittent service due to reduced number of satellites

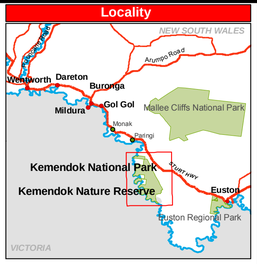
Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Far West Region Duty Officer (24 hour)	08 8080 3222
	Buronga Office (bus. hours)	03 5021 8900
Rural Fire Service Lower Western Zone	Zone Manager: Fred Apthorpe	0428 535 553
	Operations Officer: Steve Walker	0428 598 376
	Lower Western Zone RFS Office	03 5027 4422
Emergency		000
Ambulance	Mildura (Vic) and Wentworth enquiries only	03 5023 0011
SES	Emergencies	13 2500
	Wentworth	03 5027 5100
Police	Dareton	03 5027 7599
	Buronga	03 5023 2262
	Euston	03 5026 3101
Council	Wentworth Shire Council (bus. hours)	03 5027 5027
	After hours and emergency	03 5027 5091

Fire Season Information

Wildfires	The critical wildfire season occurs during December, January and February. This period may extend into the first half of March. The end of the critical fire season is often marked by a drop in temperature and rising humidity.
Prescribed Burning	Prescribed burning should be undertaken before autumn rain occurs to maximise effectiveness. Burning may also be considered during late winter and spring dependent on seasonal factors. Prescribed burning undertaken near the commencement of the statutory bushfire season should be fully contained.

Locality

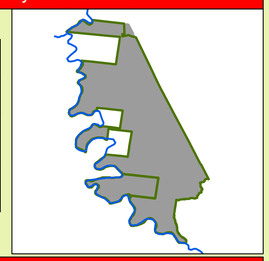


Map Details

Datum: Geocentric Datum of Australian (GDA) 1994 **Projection:** Map Grid of Australia (MGA) Zone 54	**Data:** Spot Satellite Imagery: 2005. 1:100k Topographic MapMonak 7329-S, Colignan 7328-N **Scale:** Noted scales are true when printed on A1 size paper.

Status of Biodiversity Thresholds

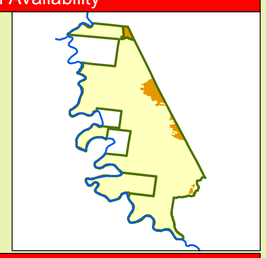
Too frequently burnt	Fire thresholds have been exceeded. Species may become extinct due to insufficient time to mature and reproduce. ***Protect from fire as far as possible.***
Vulnerable to frequent fire	The current fire interval is shorter than the recommended minimum interval. ***Protect from fire as far as possible.***
Within threshold	The time-since-fire is greater than the recommended minimum, and less than the recommended maximum. ***A fire event is neither required nor should one necessarily be avoided.***
Long unburnt	The current fire interval is longer than the suggested interval. ***A fire event may or may not be advantageous. Consider ecological effects of fires in these areas.***



Prescribed Burn Availability

Available only ephemeral conditions	This area generally has NIL or LOW overall fuel hazard (OFH), except during seasons producing continuous ground cover
Available for prescribed burning	This area is available for prescribed burning, subject to fuel levels and ecological thresholds
Unavailable for prescribed burning	This area is unavailable for prescribed burning, due to NIL or LOW overall fuel hazard (OFH), or ecological requirements.

Availability for burning must be referenced with the **Status of Biodiversity Thresholds** and **Vegetation Management Guidelines.**



Bushfire Risk Management Strategies

Asset Protection Zone	The objective of this zone is the protection of life and property. This will have precedence over guidelines for the management of biodiversity. Maintain Overall Fuel Hazard at MODERATE or below.
Strategic Fire Advantage Zones	The objective of this zone is to reduce fire intensity in locations to assist containment of wildfires, by maintaining the Overall Fuel Hazard less than HIGH.
Land Management Zones	The objective of this zone is to conserve biodiversity and protect cultural heritage by applying biodiversity thresholds

Operational Guidelines - Heritage

Resource	Guidelines
Aboriginal Cultural Heritage Site Management	*Modified trees (AS1), including scarred trees* ☐ Protect the site from fire, clear base of litter and shrubs, exclude tree from fire if possible. ☐ Foam may be used to protect the tree, or to extinguish fire. ☐ Do not cut trees *Ground based sites (AS2), including artefacts and grinding grooves* ☐ Protect site from any ground disturbance, including the use of earth -moving equipment, vehicles and water bombing. ☐ Apply a machinery exclusion area where there is a high concentration of known sites. ☐ Area may be burnt. *Burial sites (AS3)* ☐ Protect sites from any disturbance by excluding operations by at least 25 metres ☐ Area may be burnt
Threatened Species Management	*Regent P arrot (Polytelis anthopeplus monarchoides) nest in mature hollow bearing red g um trees which are within 100m of the Murray River or adjacent major creeks and billabongs.* ☐ Protect this habitat from fire and exclude known nesting trees from fire if possible. ☐ Do not remove trees in this zone, avoid the use of heavy machinery.

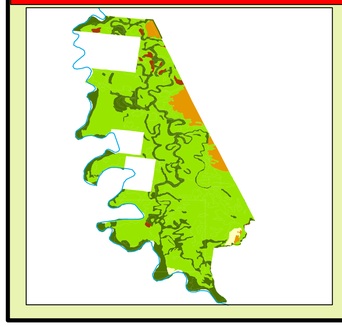
Operational Guidelines

Aerial Operations	☐ Aerial operations will be managed by trained and competent personnel. This includes directing aerial bombing and aerial ignition operations. ☐ The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances. – The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot-overs. ☐ Where practical foam should be used to increase the effectiveness of water. – Ground crews must be alerted to water bombing operations. ☐ Aerial ignition may only be used during back-burning or fuel reduction operations if practical and only with the prior consent of NPWS Regional Manager, OEH Section 44 delegate or as prescribed in an Operational Burn Plan. ☐ Utilise incendiaries to rapidly burn out large areas where required.
Back-burning	☐ All personnel must be fully briefed before back-burning operations begin. ☐ Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the FDI is very high or greater, back-burning should commence when the humidity begins to rise in the late afternoon or early evening. With a lower FDI, back-burning may be safely undertaken during the day. ☐ Prior to back-burning, where practical, clear a 1m radius around dead and hollow bearing trees adjacent to containment lines or wet down these trees as part of the back-burn ignition. ☐ Use parallel containment lines when applicable. ☐ Avoid back-burning in red gum vegetation due to the increased risk of prolonging and increasing fire size.
Command & Control	☐ Standard Incident Management Systems are to be applied. ☐ The first combatant agency on site may assume control of the fire but then must ensure the relevant land management agency is notified promptly. ☐ On the arrival of other combatant agencies, the initial Incident Controller will consult with regard to the ongoing command, control and incident management team requirements as per the relevant BFMC Plan of Operations. ☐ Where OEH is not the first responding fire authority to arrive at the fire on OEH managed lands a competent officer of the first arriving fire authority will direct fire management activities until a competent OEH officer assumes control (unless prior agreements have been made).
Containment Lines	☐ Construction of new containment lines should be avoided, except where they can be constructed with minimal environmental impact. ☐ New containment lines require the prior consent of a senior NPWS Officer. ☐ The biodiversity objectives and locations of significant species will be considered when locating control lines. Link up with SFAZ's, recently burnt areas and areas with low fuel loads as much as possible when planning and constructing control lines to provide for more effective fire containment, increased safety for fire fighters and minimise vegetation clearance and soil disturbance by heavy plant. ☐ Where practical, all attempts will be made to exclude the construction of control lines within 100 metres of known cultural heritage sites; the Murray River and creeklines. ☐ Tree removal will be minimised where new control lines are to be established. ☐ Use parallel containment lines when applicable. ☐ All personnel involved in containment line construction should be briefed and must consider both natural and cultural heritage sites in the location. ☐ Containment line construction using earthmoving equipment must be in accordance with the earthmoving guidelines outlined below. ☐ All containment lines not required for other purposes will be closed at the cessation of the incident.
Earthmoving Equipment	– Earthmoving equipment may only be used with the prior consent of a senior NPWS Officer, and then only if the probability of its success is high. ☐ Earthmoving equipment must always be guided and supervised by an experienced officer, and accompanied by a support vehicle. When engaged in direct or parallel attack this vehicle must be a fire fighting vehicle. ☐ Earthmoving equipment will be excluded from within 100m of the Murray River and creeklines. ☐ Earthmoving equipment must be washed down, where practical, prior to it entering NPWS estate and again on exiting NPWS estate. ☐ Containment lines constructed with earthmoving equipment should consider the protection of drainage features, observe the threatened species and cultural heritage guidelines and be surveyed where possible to identify unknown cultural heritage sites. ☐ Experienced NPWS personnel will operate heavy plant in preference to contractors. ☐ Construction of control lines with heavy plant along sand dune crests will be avoided where practical. ☐ Dozers will operate with rakes in preference to blades to reduce soil disturbance. ☐ Graders will be preferred in speargrass fuel conditions in open vegetation communities.
Fire Suppression Chemicals	☐ The use of foam, gels and retardants will be permitted on the reserve. ☐ Fire suppression chemicals are not to be applied within 50m of water courses and standing water.
Rehabilitation	☐ Containment lines will be stabilised and rehabilitated as part of the wildfire suppression operation.
Watering Points	☐ Consider deployment of a bulk water carrier to support fire operations.
Smoke Management	☐ Potential impacts of smoke and mitigation tactics will be assessed during the planning of fire operations. ☐ If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified. ☐ Smoke management must be in accordance with relevant Roads and Maritime Services guidelines. ☐ During fire operations, signage may be required on Tapalin Mail Rd, Old Euston Rd or Sturt Hwy.
Visitor Management	☐ The reserve may be closed to the public during periods of extreme fire danger. ☐ The reserve will be closed during fire operations.
WARNINGS	☐ **The park is subject to flooding. Creeks may fill from local rain or flooding of the Murray River. Do not drive through water.** ☐ **Roads may become boggy and untrafficable after rain.** ☐ **Danger of falling limbs in River Red Gum community during fires, high winds, extreme temperatures and drought conditions.** ☐ **Beware of overhead powerlines.** ☐ **Fire behaviour in mallee communities can be extreme and unpredictable.**

Suppression Strategies

Conditions	Guidelines
	Redgum / Blackbox Forest - Woodland
Fire danger rating LOW - HIGH	☐ Suppress wildfires and restrict in extent by implementing broad containment strategies using existing roads, creeks and areas with low OFH, adhering to long-term management requirements for biodiversity. ☐ Avoid back-burning in red gum communities due to the increased risk of prolonging the fire and increasing fire size.
Fire danger rating VERY HIGH or ABOVE	☐ Suppress wildfires and restrict in extent by implementing broad containment strategies using existing roads, creeks and areas with low OFH, following long-term management requirements for biodiversity. ☐ Avoid back-burning in red gum communities due to the increased risk of prolonging the fire and increasing fire size.
	Blackbox, Lignum , Derived Grassland (cleared Cypress Pine / Casuarina Woodland)
Fire danger rating LOW - HIGH	☐ Consider broad containment strategies using existing roads, creeks and areas with low OFH, adhering to long-term management requirements for biodiversity. ☐ Direct and parallel attack may be applied with earthmoving machinery and fire units.
Fire danger rating VERY HIGH or ABOVE	☐ Consider broad containment strategies using existing roads, creeks and areas with low OFH, adhering to long-term management requirements for biodiversity. ☐ Direct and parallel attack may be applied with earthmoving machinery and fire units. ☐ Back-burning effectiveness will drop significantly when humidity starts to rise in the early evening.
	Mallee Woodland
Fire danger rating LOW - HIGH	☐ Consider broad containment strategies using existing roads and areas with low OFH, adhering to long-term management requirements for biodiversity. ☐ Direct and parallel attack may be applied with earthmoving machinery and fire units only on dead edges, or in vegetation with LOW OFH.
Fire danger rating VERY HIGH or ABOVE	☐ Fallback to existing trails and roads, recently burnt areas or vegetation with low OFH. ☐ Back-burning effectiveness will drop significantly when humidity starts to rise and wind drops in the early evening. ☐ Parallel attack may be applied with earthmoving machinery and fire units only on dead edges, or in vegetation with LOW OFH.

Vegetation



Vegetation Management

Vegetation Formation	Vegetation Community	Vegetation Management Guidelines	Fire Behaviour
Forested Wetland	Red Gum / Black Box Forest - Woodland	An interval between fire events less than 10 years should be avoided. River Red Gums will tolerate low intensity fires and may not survive moderate to high intensity fires. Individual trees may survive canopy scorch if they are not under stress and are in older age classes. Consecutive fires occurring within a period of 20 years may reduce the extent of River Red Gum Forests. No maximum fire threshold to be applied as ecological thresholds are flood based.	This vegetation community will generally not carry fire unless there are high ephemeral fuel loads.
Semi-arid Woodland	Black Box Woodland	Fire should be avoided. The understorey is dominated by chenopod species.	This vegetation community may carry fire if there are high ephemeral fuel loads.
Freshwater Wetland	Lignum Shrubland	Fire intervals of less than 6 years should be avoided. No maximum fire threshold to be applied as ecological thresholds are flood based.	Lignum Shrublands will only carry fire if there are high ephemeral fuel loads. Unless weather conditions are extreme, low ground fuels during normal years will only allow for patchy fires.
Semi-arid Woodland	Mallee Woodland	Recent research suggests that a minimum of 15 years is required before fuel loads are sufficient for fire to carry and that there is no maximum age threshold. Under ephemeral fuel conditions fires may burn more frequently due to increased fuel loads.	Fire intensity in mallee communities ranges from moderate to high and is largely influenced by presence of spinifex, ephemeral growth and /or weather conditions.
Semi-arid Woodland	Derived Grassland (partly cleared Cypress Pine / Casuarina Woodland)	Fire intervals of less than 15 years should be avoided. Fire should be avoided where there is a chenopod understory.	This vegetation community will not carry fire unless there are high ephemeral fuel loads.
Fire History	The fire history data dates back to 1971. Wildfires mostly occur due to escaped campfires near the Murray River and are small in size (<1ha to 20ha). The whole park has not been extensively burnt.		
Ephemeral Conditions	Ephemeral fuel conditions occur after consecutive years of effective rainfall. This in turn leads to the growth and build up of fine surface fuels such as grasses and herbs which can create a continuous fuel load across **all** of the above vegetation communities.		
Drought Conditions	During drought conditions and when vegetation communities are obviously stressed or experiencing dieback no prescribed burning will be permitted and wildfires areas will be minimised.		

OFH – Overall fuel hazard - A rating system that includes leaf litter, grasses, shrubs, bark type and bark condition.