

Department of Environment and Conservation

Code of Practice for Fire Management

May 2008



Department of Environment and Conservation


Our environment, our future 

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Endorsements

This Code of Practice for Fire Management has been approved for implementation by:



Manager Fire Management Services



Director Regional Services



Director General DEC

1. INTRODUCTION

1.1 Background

Fire prone environment – A history of fire

1. Fire is a natural environmental factor that can have both destructive and beneficial effects. It can regenerate, recycle nutrients, create and maintain habitats, but can also kill, injure and destroy. The impact of fire varies with the frequency, intensity, scale, time of year, and the fire sensitivity of the community in which it occurs.
2. The vegetation and climate across Western Australia make it highly prone to bushfire. Over millions of years fire has been a force in the evolution of the State's ecosystems. Fire is an important environmental disturbance that will continue to influence the biotic composition and structure of all natural ecosystems.
3. Aboriginal people have inhabited Western Australia for more than 40,000 years and over this period they have used fire as a management tool for hunting, access and spiritual reasons. Aboriginal use of fire resulted in significant changes in some ecosystems and new equilibrium states developed. When Europeans arrived, they inhabited a fire-managed landscape.
4. Following European settlement, it became evident that uncontrolled fire could damage or destroy their assets and resources they wished to exploit. As a result of the European influence, fire regimes changed from those characterised by frequent, patchy fires applied by Aboriginal people and ignited by lightning to regimes applied by European settlers and authorities designed to protect privately owned and community assets. Fire suppression and exclusion were commonly pursued near settled and urbanised areas.

Biodiversity and fire

5. Much of the State's native biota has evolved in ecosystems prone to drought and fire. Consequently, most organisms have developed adaptations for living with fire and many have become dependent on fire in some way for their persistence. Conversely there are some ecosystems that are independent of fire (non-flammable) and some organisms that occur in less fire prone habitats that require long fire-free intervals to ensure their persistence.
6. Because fire is elemental in the maintenance of many of our native ecosystems, its use as a management tool must recognise that both the application of fire (in all its variety of frequencies and intensities), and its exclusion, will have consequences. On the basis of current knowledge, some of these consequences are predictable, but others are not.
7. Long periods of fire exclusion can alter habitats and simplify habitat diversity. Some species are unable to cope with very frequent fire and will exhibit relictual distribution patterns, being confined to naturally less flammable sites such as rocky outcrops and wet areas.
8. Exclusion of fire from naturally fire prone vegetation over large areas results in the gradual build-up of live and dead vegetation. This becomes available as fuel and increases the risk of large, intense, and damaging fires. In most vegetated ecosystems, the exclusion of fire for long periods over large areas is difficult to achieve. Fires that burn in long unburnt vegetation are almost impossible to control and the intensity and scale of these wildfires can threaten biodiversity and human life and property.
9. Leaving large areas of fire-prone vegetation unburnt for long periods can result in long-term deleterious impacts on biota, environment and community values as a result of large and intense wildfires.
10. The proactive use of fire (prescribed burning) can be used in natural ecosystems to achieve biodiversity conservation objectives and to minimise the risk of loss of life, property and services from wildfire. This is usually a more cost-effective, environmentally acceptable and predictable method of managing the quantity of flammable material over large areas than applying manual, mechanical, chemical or biological controls.



Living with fire

11. Wildfire is an integral component of the rural landscapes of Western Australia. Seasonal wetting and drying of live and dead vegetation, which becomes the fuel for a fire, occurs across the State throughout the year. In the southern part of the State, most wildfires occur over the hot, dry summer months, whereas in the northern tropical regions, most wildfires occur over the dry season. Fires occur regularly and are caused by lightning and humans. Human caused wildfires result from escapes from burning off, illegal lighting, deliberate arson or accidental lighting.
12. Land managers must carefully balance the risk to human life and property from wildfire with the impacts of fire management actions on other values held by the community, such as water quality, biodiversity, history and culture. This balance should be based on the best available scientific and local knowledge and on the application of risk management principles. However, in some instances, it is clear that trade-offs will be required between protection of life and property, and ecological or other values.
13. There is an increasing trend for people to live in environments that are adjacent to natural bushland areas managed by the Department. In doing so the threat from wildfire to life and valuable assets is ever present.
14. Climate change is predicted to result in an increasing trend to aridity in many parts of the State. This trend will affect the flammability and fire regimes of these areas, threaten the persistence of various biota and increase the risk from fire to life and property.
15. Suppression difficulty and damage potential to life and property of a bushfire are proportional to the size of the fire, the conditions under which it is burning, and the rate and amount of heat energy released (fire intensity). The intensity and speed at which a fire burns are affected by the quantity and structure of accumulated litter, bark and plant material, which are in turn related to the vegetation type and period since last fire. In most vegetated ecosystems, accumulated fuel loads can be reduced by low intensity prescribed fires. Low fuel loads reduce the likelihood of large and intense fires even under extreme conditions and consequently improve the capacity of firefighters to safely control a fire. Under extreme fire danger conditions, the spread of fire may only be retarded in very low fuel loads. However, in some vegetation types there can be a measurable reduction in the fire intensity for at least 15 years after a previous fire, which translates into reduced difficulty of fire suppression.
16. As well as managing the accumulation of flammable vegetation, effective fire management also requires effective fire detection and suppression systems and ongoing

advances in knowledge about fire ecology and behaviour.

1.2 Purpose of the Code

17. The Code of Practice for Fire Management (the Code) provides a framework for fire management procedure and practice on land managed by the Department of Environment and Conservation (the Department) in Western Australia.
18. The Code is to enable the efficient, effective and safe management of fire on Department-managed land to achieve land management objectives, and protect human life, property and environmental values from the deleterious effects of wildfire or inappropriate fire regimes.
19. The Code provides a basis for establishing and maintaining a consistent standard of fire management on Department-managed land.
20. The Code provides a means by which the Department may communicate with the public and other government agencies on how it manages fire on Department-managed lands.
21. The Code recognises the use of land adjoining Department-managed lands and the need for the integrated management of risks and impacts between these categories of land.

1.3 Contents and organisation of the Code

22. The Code lays down principles, standards and guidelines that apply as far as is practicable to fire management on Department-managed land to ensure that, in an effective, efficient and safe manner:
 23. environmental values, including the State's biota, are protected from the deleterious effects of wildfire and inappropriate fire regimes;
 24. human life, property, and assets are protected from the deleterious consequences of wildfire;
 25. water catchment, air shed and landscape values are protected; and
 26. archaeological, historical, and other cultural sites are protected.
27. The first section of the Code describes the purpose of the Code, and the manner in which the Code is to be applied. The second addresses the prescribed application of fire to Department-managed lands. The third addresses the management of wildfire on Department-managed lands, including prevention of, preparation for, response to, and recovery from wildfire. The fourth section addresses public participation, research, and monitoring. Also included in the Code are definitions, appendices and an index.

1.4 Definitions and References

28. The definition of terms as they are applied for the purposes of this Code is essential to the correct interpretation of its contents. These are listed in the Definitions section. Numbers in superscript associated with references in the Code to other departmental documents are pointers to a table at the back of the Code setting out the full title of these documents.

1.5 Application of the Code

29. The Code applies to all Department-managed land in the State of Western Australia. This code will apply to unallocated Crown land (UCL) and unmanaged reserves (UMR) to the extent that responsibilities for fire preparedness on UCL and UMR have been allocated to the Department.
30. Agents engaged by the Department to undertake fire management activities on Department-managed land will be required to conform to this Code.
31. Any plan, instruction, prescription or guideline developed for activities on Department-managed land will be prepared to be consistent with this Code. Compliance with this Code is a requirement for all fire-related activities on Department-managed land.
32. Departmental staff will meet their obligations under this Code through assigned levels of delegation, funding and planning as provided for in Departmental and other relevant instructions. The Department will produce appropriate guidelines and operational manuals to support the Code.

1.6 Role of Fire Management Services

33. Fire Management Services (FMS) is part of the Regional Services Division and facilitates the delivery of the Department's fire management business through the Department's Regional structure. FMS provides policy guidance, technological support, information management systems, coordination of planning and operations, and training and development to Departmental staff.
34. FMS personnel work closely with Regional Managers and their fire management staff in Regions and Districts to develop and deliver the fire management outcomes of the Department. FMS also works closely with personnel representing the business outcomes of other Divisions, notably Nature Conservation, Parks and Visitor Services, Sustainable Forest Management and Science Division to ensure a holistic approach to the role of fire in achieving their contribution to the Department's conservation and land management objectives.

1.7 Monitoring of compliance

35. Compliance with the Code will be monitored by the Director Regional Services of the Department and reported on in accordance with Departmental instructions.

1.8 Review of the Code

36. The Code will be reviewed within 10 years of its approval.

1.9 Relationship to legislation, departmental policy and approved management plans

37. The Code supports the discharge of the Department's legislative responsibilities which include:
38. The *Conservation and Land Management Act 1984*, which provides for the Department to manage lands to which the Act applies, according to those operations prescribed in management plans [Sections 33(1)(a)(i) and 33(3)(a)], or, in the absence of a management plan, in accordance with necessary operations or compatible operations depending on the land category [Sections 33(3)(b) and 33(b)]. Fire management activities are subject to these provisions.
39. The *Wildlife Conservation Act 1950*, which provides for the protection of fauna and flora in Western Australia.
40. The *Bush Fires Act 1954*, which applies to land throughout the State including Department-managed lands. Sections 39 and 45 provide authorised CALM Act officers with powers to suppress fires in and near forest and Crown lands. Other sections provide for authorised CALM Act officer to enforce the provisions of the Bush Fires Act. The provisions of the Bush Fires Act do not, however, affect the provisions of the CALM Act, and the Bush Fires Act does not generally bind the Department.
41. Common Law requires that the Department has a duty as an occupier to take all reasonable care to eliminate or minimise foreseeable risks of harm. The Department may be held liable for injury or loss caused by fire, which a Departmental employee had negligently lit or negligently failed to control. On land where the Department has statutory responsibilities, there may be a duty to take all reasonable steps to contain a fire that has occurred without negligence by the Department.
42. The Code also recognises the Department's responsibilities for air quality management and to avoid, as far as practical, impacts of smoke generated by prescribed burning on the community.
43. Further to State legislation, the Code also accommodates the requirements of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, which provides for the protection of threatened species, ecological communities and other matters of national environmental significance. The Department has interpreted this legislation in its Fire Management Policy (Policy Statement No. 19 – Fire Management)¹.
44. The Code is consistent with the Fire Management Policy¹ and recognises the requirements of other Departmental policies and arrangements relating to Department-managed land.



1.10 General requirements of fire management

45. Planning and implementation of fire suppression and prescribed burning activities on Department-managed lands will:
46. be undertaken by competent and qualified staff
47. recognise safety as a primary priority
48. be guided by principles of environmental care
49. be founded on scientifically based knowledge and experience
50. be influenced by knowledge of indigenous traditional fire regimes and practices
51. provide for the achievement of the management objectives for the area
52. comply with legal requirements
53. include assessments of the threats to and impacts on human life and public health, community assets and services, and natural values
54. be in accordance with clearly defined procedures that provide for safe work practices
55. be documented in accordance with Departmental standards
56. have outcomes monitored and recorded
57. be effective and cost-efficient
58. be guided by ecological principles for fire management
59. provide for State and local level integration, coordination and cooperation
60. provide for public participation



2. APPLICATION OF FIRE ON DEPARTMENT-MANAGED LAND

61. This section applies to the deliberate introduction of fire under prescribed conditions by DEC staff and contractors into and onto Department-managed land. Fires so lit are termed prescribed burns.
62. Fire has a part to play in the achievement of a range of land management objectives, including the conservation of biodiversity, maintenance of ecosystem health and vitality, maintenance of productive capacity, conservation of soil, water and catchment values, conservation of natural and cultural heritage, protection of human life, built assets and natural commercial products such as timber, honey and wildflowers, and protection of parks, recreation sites and scenic values. The purpose and objectives of any prescribed burning will be clearly defined in measurable and reportable terms.
63. The use of prescribed burning to achieve land management objectives will comply with legal requirements, be thoroughly planned and, when conducted, be in accordance with clearly defined objectives and operational procedures providing for safe work practices and manageable fire behaviour; be ecologically appropriate to the local environment; and have the outcomes monitored and recorded.
64. Prescribed burning plans will incorporate nature conservation, land use and fire protection objectives in order to optimise outcomes. The planning of prescribed burning will require the recognition and balancing of often competing objectives and will take into account the role of fire in the maintenance of biodiversity, the protection of economic values and the mitigation of the risk and consequences of wildfire.
65. In fragmented landscapes where remnant vegetation on reserves is surrounded by extensive urban and agricultural land uses, the planning and application of fire regimes will require consideration of interacting factors such as weed invasion, lack of regeneration of native species, grazing impacts, fire history, and size of reserve.
66. The Department will, where appropriate, consult and involve neighbours, traditional owners and other stakeholders in fire management activities.
67. The Department will work with communities to facilitate understanding of the role of fire as a management tool in the Western Australian environment.

2.1 Prescribed burn prescriptions, plans and programs

2.1.1 Integration of planning

68. The Department will integrate the planning for all prescribed burning on Department-managed lands to the maximum extent practicable.
69. The Department will, where necessary, develop fire management plans for specific areas, and will ensure integration of prescribed burning activities with other land management activities being undertaken to achieve identified land management objectives.
70. The Department will seek to integrate fire planning and prescribed burning programs with adjacent land managers and local authorities to maximise mutual benefits.

2.1.2 Prescribed Fire Plans

71. Each area designated for a prescribed burn will have a Prescribed Fire Plan² prepared for it. The contents of the Prescribed Fire Plan² will conform to the standards set by the Department as specified in the Prescribed Fire Manual³.
72. Each Prescribed Fire Plan² will include: burn objectives, details of the area to be burned, resources required for the operation, standards to be met, checks and notifications to be undertaken, authorisations to be obtained, and post burn appraisals to be conducted.
73. All Prescribed Fire Plans² will be approved by the Regional Manager and those involving aerial ignition will be endorsed by a representative of FMS.
74. The objectives for all prescribed burns will be consistent with current approved management plans or interim guidelines, or in the absence of these documents, be consistent with the purpose for which the land is vested.

2.1.3 Indicative burning plans

75. Prescribed burns on all Department-managed lands will be represented in Regional indicative burning plans that indicate the year and season that each prescribed burn is intended to be conducted. In Regions where it is feasible and appropriate, the plan will indicate all prescribed burns planned for the next three years. This plan will be reviewed and reissued annually as specified in the Master Burn Plan Manual⁴.

2.1.4 Annual prescribed burn program

76. The Department will produce an annual prescribed burn program as specified in the Master Burn Plan Manual⁴ that identifies and schedules all prescribed burns intended to be conducted on Department-managed lands.
77. The annual prescribed burn program will be approved by the Department's Corporate Executive.
78. The annual prescribed burn program may be varied to meet changes in circumstances, such as those imposed by wildfires, weather or management activities.



2.1.5 Prescribed burn operations

79. Prior to the commencement of prescribed burning, seasonal weather and fuel conditions are to be monitored using the relevant indices and fire behaviour guides to identify when suitable burning conditions are imminent.
80. Potential impacts of smoke and ash on water catchments, road traffic, neighbours and visitors, and firefighters will be considered when planning and implementing prescribed burns. (See also 2.1.6.)
81. Sufficient firefighting personnel and equipment, commensurate with the fire danger, are to be retained available for fire suppression when committing resources to prescribed burning operations.
82. All Prescribed Fire Plan² requirements will be met and authorisations obtained prior to lighting any fire.
83. Members of the public in the vicinity of a prescribed burn will be protected by a range of measures which may include the erection of warning signs on access routes, the conduct of searches within the area proposed for burning prior to ignition, and the issue of public warnings through appropriate media.
84. The officer in charge of a burn will be in possession of a copy of the approved Prescribed Fire Plan² and meet all conditions specified there in during the conduct of the operation.
85. Only persons duly authorised or instructed by the Department to do so may ignite a prescribed burn.
86. Safety of all personnel involved in a prescribed burn will be the responsibility of the officer in charge of the burn. All occupational health and safety standards and Departmental requirements will be met prior to and during ignition, patrol and mopping up operations.
87. All personnel involved in prescribed burning will be competent in the roles and tasks which are assigned to them. Where a system of endorsement exists, the personnel will be appropriately endorsed by the Department, or be receiving supervised on-job training to achieve this.
88. Prior to ignition of a prescribed burn, the officer in charge of the burn must provide comprehensive briefing to all personnel involved in the prescribed burn, on the burn plan, their tasks, and safety precautions, in accordance with the Prescribed Fire Manual³.
89. Prior to the commencement of any prescribed burn the officer in charge of the burn is to ensure that all private property such as machinery, beehives, stock, or harvested forest product has been identified and protected.
90. Security measures for a prescribed burn, including identification and treatment of hazards and risks, and conduct of patrols, will comply with standards set out in the Prescribed Fire Manual³.

91. The Department will take appropriate action to deal with fire that escapes beyond the planned control lines and keep the situation under review until the fire is declared safe.
92. The Department will promptly investigate any escape from Departmental prescribed burning operations that causes significant damage to private property or results in significant control problems. The investigation will determine the cause of the escape, ascertain the extent of damage or other problem, and prepare a formal report for the purpose of improving the conduct of prescribed burning.
93. Patrols and mop up operations will be carried out to the standards set out in the Prescribed Fire Manual³ until the prescribed burn is completed and declared safe.
94. Rehabilitation of temporary fire access tracks, fire control lines and other works will be in accordance with the Fire Management Guideline for the Stabilisation and Rehabilitation of Fireline⁶.

2.1.6 Smoke management

95. Prescribed burns will be managed to reduce the potential risk of smoke causing detrimental impacts on major population centres, airports, major roads, neighbours and other sensitive areas through the application of smoke management guidelines.
96. The Department will undertake a risk analysis for each burn to determine the comparative risk of smoke impacts from prescribed burns on communities and air quality with the risks to public safety and natural assets from potential wildfire.
97. The Department will apply information on weather, fire behaviour, smoke trajectory predictions, burn location, size and strategic importance in determining the most suitable burn prescription and ignition application to achieve an effective burn outcome with low smoke impacts.

2.1.7 Records of prescribed burns

98. Records are to be kept of each burn prescription and associated documents for future reference. The burn outcomes will be monitored and recorded as set out in the Prescribed Fire Manual³.
99. The Department will record its expenditure on all aspects of prescribed burn planning and implementation.

2.1.8 Monitoring

100. The Department will carry out ongoing monitoring of the outcomes of particular burns when the Department has determined, on the advice of its specialist officers, that a need exists to establish whether the fire management objectives have been achieved.
101. Monitoring of prescribed burns should be undertaken in accordance with relevant procedures and guidelines, where available.
102. The Department will ensure that information recorded is used to inform future fire operations.

3. WILDFIRE MANAGEMENT

3.1 Risk management approach to fire management

103. The Department's fire management planning will identify the potential environmental social and economic risks associated with fire management on Department-managed lands. As far as practicable, risks will be analysed (likelihood and consequences), evaluated and mitigated.
104. The Department will adopt and maintain a risk management process consistent with the Australian/New Zealand standard for risk management (AS/NZ 4360:1999) for Department-managed land that includes: the values at risk of damage from wildfire; the probability of wildfire occurring; the likely wildfire behaviour; the capacity for detection of and response to wildfire; the capacity for suppression of wildfire; and the potential consequences for local communities and the environment.
105. The Department will apply a comprehensive range of fire prevention, preparedness and mitigation measures to manage the risk of damaging wildfires and inappropriate fire regimes.
106. The Department will maintain fire history records for all Department-managed lands for use in developing risk management programs and strategies.
107. The Department will maintain and enhance models for predicting the accumulation of flammable materials and fire hazards on and near Department-managed lands.
108. The Department will utilise the emergency management approach to wildfire management, specifically addressing prevention, preparation, response and recovery in its documentation and operations.



3.2 Wildfire prevention

109. The Department will conduct fire prevention activities that eliminate or reduce the probability of occurrence of a specific hazard, and that reduce the degree of damage likely to be incurred by fire.
110. The Department will undertake fire prevention activities relating to the minimisation of preventable wildfires including education (both school and wider community), enforcement of legislation and risk management.
111. The Department will consider hazard management on and around sites of known high hazard and/or risk on public land (e.g. rubbish tips, picnic areas, sawmills on or adjacent to Department-managed land) and where appropriate, implement measures (e.g. slashing, prescribed burning) to mitigate that hazard or risk.
112. The Department will undertake, participate in, and support programs aimed at improving the effectiveness of fire prevention activities through cooperation and collaboration with the Fire and Emergency Services Authority (FESA) and other stakeholders.
113. The Department will work cooperatively with FESA, Bush Fire Brigades, Local Government Authorities and other stakeholders on programs to prevent the occurrence of unplanned fires.

3.2.1 Education

114. The Department will conduct and participate in programs which maintain public awareness of wildfire risk and vulnerability, promote the importance of self-protection, and encourage the responsible use of fire by the community.
115. The Department will participate with other fire authorities in public education and awareness programs designed to prevent deliberate and accidental fire ignitions and increase understanding on the role and use of prescribed fire.





3.2.2 Enforcement

116. Where there is sufficient evidence to suggest that a person (or persons) was responsible for deliberately lighting or negligently causing a fire on Department-managed lands or a fire that subsequently enters onto Department-managed lands, action may be taken in accordance with Departmental guidelines to recover the costs of suppression and/or damage caused by the fire. Prosecution will be considered.
117. The Department will, as appropriate, encourage and assist appropriate authorities to investigate, identify and prosecute persons suspected of being responsible for fires that burned onto Department-managed land.
118. Where arson is suspected to have occurred on Department-managed land, the Department will take appropriate action to identify and, as appropriate, prosecute the offenders.
119. The Department will coordinate its fire investigation activities with the Western Australian Police Service Arson Squad, FESA and Local Government Authorities.
120. The Department will undertake patrols, where necessary, in areas where barbecues and campfires are commonly used, to ensure compliance with fire legislation and to provide advice and assistance regarding the wise and proper use of fire.

3.3 Wildfire preparedness

121. Preparedness activities focus on essential emergency response capabilities through the development of plans, procedures, organisation and management of resources, training and public education. Wildfire preparedness refers to all activities undertaken in advance of wildfire occurrence to decrease wildfire area and severity and to ensure more effective fire suppression.
122. Preparedness activities to be undertaken by the Department include training and development of fire personnel; provision and maintenance of fire equipment; information and communication systems; maintenance of fire access, firebreaks and water supplies; detection; pre-suppression planning; and data management.
123. A daily level of preparedness for wildfire suppression is to be utilised which is appropriate to the existing and forecast fire danger and the possibility of serious fire conditions. Preparedness levels will be conducive to minimising the risks of potential losses of human life and damage to Department-managed land assets and values resulting from wildfire.
124. The approach to preparedness must be strategic and include the analysis of fire risk and the identification and appropriate reduction in hazards by the Department and local communities.
125. The level of preparedness will be in accord with the requirements of the Fire Risk to Resources Model⁷ maintained by the Department.

3.3.1 Personnel availability

126. The Department will, as far as is practicable, ensure that the total number and distribution of competent personnel meets the requirements specified in its Fire Risk to Resources Model⁷ for fire suppression.
127. The Department will, as far as is practicable, ensure that sufficient competent Departmental and other personnel are available at Departmental despatch centres for immediate deployment commensurate with the existing and forecast fire danger and current fire management commitments.
128. The Department will strategically locate personnel and resources to ensure rapid and effective response to wildfires, and to respond to changes in fire danger.

3.3.2 Equipment

129. The Department will, as far as is practicable, hold or have ready access to a level of equipment and services that will enable it to respond in accordance with the Department's Fire Risk to Resources Model⁷ for fire suppression.
130. The Department will, as far as is practicable, provide a system that ensures the maintenance and availability of equipment held for fire management purposes.

3.3.3 Detection

131. The Department will, as far as is practicable, provide a fire detection system that meets the performance requirements set out in the Fire Risk to Resources Model⁷ for fire suppression.
132. The Department will ensure that the system and level of fire detection activated is appropriate to the fire danger and the prevailing conditions.

3.3.4 Incident Preparedness and Response Plans

133. The Department will annually produce Incident Preparedness and Response Plans⁸ for each Region and/or District that describe how the requirements for fire suppression will be met in that Region/District, and specify resources extant in the Region/District and procedures to be implemented in the event of wildfire. The format for regional Incident Preparedness and Response Plans⁸ is to be consistent across the Department.
134. The Department will assist FESA in the development of the Western Australian Wildfire Emergency Management Hazard Plan (Westplan Bushfire) or its successor.
135. The Department will develop and apply processes that promote opportunities for local knowledge and input from communities to assist with fire preparedness activities.



3.3.5 Interagency coordination

- 136. The Department will participate in interagency coordination programs in accordance with relevant legislation and arrangements put in place under State emergency management guidelines and interagency agreements.
- 137. The Department will, where it considers it appropriate, enter cooperative arrangements for wildfire response with local government authorities and FESA fire services.

3.3.6 Training and competency acquisition

- 138. The Department will apply national standards as the basis of competency definition, or where these do not exist, accepted industry standards.
- 139. The Department will define the competency requirements for all Incident Management roles to standards that are required to meet the Risk to Resources Model⁷ for fire suppression.
- 140. The Department will review the competencies of its firefighting personnel each year.
- 141. The Department will provide or facilitate training programs for skills acquisition and maintenance, and personal development, and will conduct competency assessments to ensure that its personnel have the required competencies.
- 142. The Department will maintain systems to record training, competency acquisitions and accreditations for all fire management activities.

3.3.7 Information and communication systems

- 143. The Department will develop and maintain information systems to support its fire management activities.
- 144. The Department will provide and maintain effective State-wide radio, telephone and data communication systems sufficient to support fire management activities.
- 145. All radio communication systems will conform to the Department's Policy Statement 21 – Communications⁹.
- 146. The Department will ensure that its communications systems have effective links with those of other fire services.
- 147. The Department will provide specialist training to all personnel required to use the Department's communication systems for fire management activities.

3.3.8 Weather forecasts and fire danger

- 148. The Department will monitor seasonal and daily fire danger across the State.
- 149. The Department will maintain indices indicative of seasonal and daily fire danger.
- 150. The Department will maintain access to a network of weather observation stations.
- 151. The Department will liaise with the Bureau of Meteorology regarding current and future trends in fire danger.

3.3.9 Roads, tracks and access routes

- 152. The Department will identify road, track and access networks necessary for fire management purposes and other essential activities on Department-managed lands.
- 153. The Department will develop plans indicating the standard required of each identified road, track and access route.
- 154. The Department will develop plans for the construction and maintenance of identified roads, tracks, bridges and access routes and implement those plans as far as is practicable.

3.3.10 Water points

- 155. The Department will develop criteria and standards for the establishment and maintenance of permanent or mobile water points for supply of water for ground and/or aerial firefighting on Department-managed lands.
- 156. The location of permanent water points will be signposted on the ground and recorded on Departmental fire management plans.

3.4 Wildfire response

- 157. Firefighter and public safety will be given priority over all other fire suppression considerations.
- 158. Control of wildfires threatening life, property and other high community values and high environmental values on or near Department-managed land will be given priority over routine Departmental activities, subject to consideration of overall Departmental needs.
- 159. The Department will respond to fires occurring on or near Department-managed lands to a degree that is appropriate to the values at risk; the prevailing and forecast weather; availability of resources; the cost of the suppression operation; and likelihood of long-term impact or net gains to the environment. The guiding principles of fire management as described in this Code will be applied.
- 160. The Department will take control of, or provide assistance at fires on or near Department-managed lands in accordance with State and local arrangements between the Department and other fire authorities and land management agencies.
- 161. Fire suppression will include the provision of accurate and timely information to local communities.

3.4.1 Initial response

- 162. On receiving a report that a wildfire has been detected, the Department will despatch resources after consideration of current fire commitments, available indications of fire behaviour, damage potential of the fire and the availability of resources.
- 163. The Department will assign each wildfire a unique identifier, which shall be used in all subsequent suppression activities and record keeping.
- 164. Each wildfire will have an incident controller assigned to it. More than one wildfire may be assigned to an incident controller.
- 165. An initial report on each wildfire will be provided by dispatched resources on arrival at the fire, in accordance with Departmental procedures.



3.4.2 Fire organisation

166. The control and command structure for wildfire suppression will follow the Australian Inter-service Incident Management System (AIIMS)¹¹. AIIMS provides a common management framework to assist with the effective and efficient control of incidents. The framework applies to a range of incidents from small to large, and provides the basis for an expanded response as the incident grows in size and complexity.
167. The management of wildfires involving numbers of agencies and organisations will conform to the structures described in the *Emergency Management Act 2005* or its successors.
168. Each wildfire with resources deployed will be allocated an incident level from 1 (lowest) to 3 (highest), which is determined by incident size and complexity. This incident level will be reviewed as the size, complexity and impact of the incident changes over time.
169. An Incident Action Plan will be developed for the control of each wildfire identified as either Level 2 or Level 3. The contents of the incident action plan will be determined by the incident level and specific nature of the incident. The Department will develop and apply guidelines for the preparation of Incident Action Plans¹⁰.

3.4.3 Operational guidelines

170. The Department will develop guidelines for fire suppression activities. These will include but not be limited to: management of personnel; construction of fire control line; use of earthmoving equipment; rehabilitation of fire lines, back burning and burning out; use of aircraft; use of water and additives; and incident security.
171. The Department will develop and implement procedures for the reporting of wildfire information internal and external to the incident during the suppression phase of that incident.
172. Where appropriate, local knowledge will be actively sought to inform and apply incident control decisions.

3.4.4 Fire investigation

173. The Department will, wherever practicable, endeavour to establish the origin and cause of every wildfire on Department-managed land.
174. A fire investigator will, wherever practicable, investigate and report on suspected human-caused fires attended by the Department on Department-managed land.
175. The Department will fully investigate and report on all wildfire events that involve death and or injury, significant environmental or property damage or significant suppression cost.
176. The Department will support/participate in investigations carried out by other agencies with statutory responsibility to carry out such investigations associated with fire on Department-managed lands.

3.4.5 Records

177. The Department will maintain records of each wildfire attended by the Department or reported on Department-managed land.
178. The Department will describe and define the information and documents to be retained as records.
179. The Department will maintain these records in a format that complies with the Department's records management policy.

3.5 Wildfire recovery

180. The Department will undertake or assist other agencies to undertake recovery activities, including supporting wildfire affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing. Other wildfire recovery actions to be undertaken include operations to salvage, repair, rehabilitate or replace fire damaged assets and sites disturbed by fire control operations.
181. The Department will implement or initiate recovery measures for health and safety of firefighting personnel, and affected communities.

3.5.1 Post incident debriefs and reports

182. Each fire suppression event undertaken by the Department will be the subject of a post incident debrief. The format and scope of the post incident debrief will depend on the incident level and the nature of events during the incident. The style of debriefing may range from an informal discussion between firefighting personnel on a small incident, to a formal debriefing on a complex incident.
183. The Department will record and report the outcomes of any post incident debrief that identifies significant issues or events. In these situations, the Department will collate and analyse the post incident debrief records, and report on actions taken in response.
184. The Department will conduct a formal post incident analysis and prepare a written report with recommendations for incidents where substantial resources were engaged, wildfire damage to assets or values was significant, safety was compromised, or recovery issues have been raised.
185. The Department will ensure that lessons learned from the incident are incorporated into planning for future wildfire events.



3.5.2 Health and safety for personnel

186. The Department will ensure that the safety of all firefighting and support personnel will be given the highest priority in the planning and application of all fire management operations.
187. The Department will review and apply standards for the medical and physical fitness requirements of all fire management personnel in accordance with best practice information and experience as set out in the Fire Fitness Guidelines for Managing the Department of Environment and Conservation Fire Fitness Program¹².
188. To the extent practicable during firefighting operations, firefighters will be given sufficient time to rest to relieve fatigue and stress arising from their involvement in fire suppression operations.
189. The Department will make available critical incident stress debriefing to personnel subjected to traumatic events or circumstances.

3.5.3 Rehabilitation

190. The Department will undertake rehabilitation of disturbance resulting from firefighting operations as soon as practical after the wildfire is contained.
191. Where substantial rehabilitation works are or will be required, a rehabilitation plan will be prepared and implemented.



4. PUBLIC PARTICIPATION

4.1 Public participation

192. The annual prescribed burn program and the plans for proposed prescribed burns of identified public interest will be made available for public consultation.
193. The Department will provide information through public access media and opportunity for participating in decision making at various forums from time to time.



5. RESEARCH AND MONITORING

194. The Department will directly or indirectly engage in research into the effects of fire on flora, fauna and ecosystems.
195. The Department will directly or indirectly engage in research into the effectiveness of prescribed burning and other operations in providing fire protection.
196. The Department will consider and may undertake where practicable during fire suppression opportunistic research into fire behaviour, firefighting methods and firefighter performance.
197. The Department will directly or indirectly support fire management research by facilitating monitoring of selected areas, including prescribed burns, areas long unburned and areas burned by wildfires.
198. Where appropriate and resources are available, the Department will undertake monitoring of areas treated with prescribed fire to assist in determining the effectiveness of those treatments in achieving the objectives set for the prescribed burning operations.
199. The Department will directly or indirectly engage in social research into public attitudes to fire and its management.

6. PUBLICITY AND MEDIA

200. The Department will facilitate the provision of relevant information to media outlets that informs the public of the Department's fire management operations.
201. The Department will maintain a publicly available website that contains information on fire management operations.
202. The Department will use electronic media outlets including the internet to provide public alerts concerning wildfire incidents and smoke accumulation events.



7. APPENDICES



7.1 Principles of environmental care

Fire management activities will be planned and conducted in an environmentally sensitive manner according to the following principles:

- fire regimes and fire management activities to be appropriate for maintaining the vigour and diversity in populations of species and communities of the State's indigenous flora and fauna;
- water quality and quantity to be protected by measures which minimise the impact of fire management activities on streams, springs, soaks, swampy ground and bodies of standing water, and their physical, chemical, and biological quality;
- soil to be protected by measures which prevent inappropriate disturbance of its physical and chemical properties or which promote stabilisation of bare or disturbed earth following disturbance;
- landscape values, geomorphological features, cultural and historical sites to be considered when planning operations;
- indigenous flora and fauna to be protected following wildfire suppression by measures which promote the re-establishment of the ecological processes existing prior to the wildfire;
- the possible introduction and spread of pest plants and animals, plant diseases, and insect pests to be avoided;
- air quality to be addressed by measures which diminish the impacts of smoke generated by prescribed burning.

7.2 Referenced Departmental documents

Ref No.	Title of Departmental document
1	Policy Statement No. 19 Fire Management
2	Fire Operations Guideline 79 Prescribed Fire Plan
3	Prescribed Fire Manual (Draft) 2007
4	Master Burn Plan Manual (Draft) 2007
5	Fire Management Guideline G3 – Smoke Management and Air Quality January 2006 (Draft)
6	Fire Management Guideline G2 – Fireline Stabilisation and Rehabilitation February 2007 (Draft)
7	Fire Risk and Resources Model 2007 (Draft)
8	Fire Operation Guideline 7 – Guidelines for the Preparation of Incident Preparedness and Response Plans
9	Policy Statement No. 21 Communications
10	Fire Operations Guideline 3 – Preparation of Incident Action Plans at Departmental Fires
11	The Australian Inter-service Incident Management System – A Management System for any Emergency, 3 rd Edition – Australian Fire Authorities Council 2005
12	Fire Management Guideline G4 – Fire Fitness, April 2007

7.3 DEFINITIONS

Annual prescribed burn program	A plan developed and reviewed each year outlining the areas and scheduling of prescribed burns for the coming year.
Approved Management Plan	A plan developed as per the requirements of Part V of the <i>Conservation and Land Management Act 1984</i> (CALM Act) by the Department of Environment and Conservation for the Conservation Commission and approved by the Minister for the Environment.
AS/NZ 4360:1999	The Australian and New Zealand Standard for Risk Management.
Authorised Officers	Any person appointed in accordance with Part IV of the CALM Act.
Back burning	A fire ignited along the inner edge of a fire control line to consume the fuel in the path of a wildfire.
Burning out	Setting fire so as to consume unburnt fuel between the fire control line and the wildfire.
Burn prescription	A document prescribing the conditions under which a planned fire can be conducted and the strategies and tactics to be employed in achieving the burn objectives.
Burning program	A schedule of prescribed burning operations to be undertaken within a specified period of time (season, year, three years).
Conservation Commission	A body established under the CALM Act in which many of the lands managed by the Department are vested. The Commission is responsible for the development of management plans and providing independent advice to the Minister.
Control Lines	See fire control lines.
Department, Departmental	Relating to the Department of Environment and Conservation.
Department-managed land	Land of a type described in the CALM Act for which the Department is responsible. This includes non-townsite and non-urban unallocated Crown land and unmanaged reserves for which the Department has a fire planning and preparedness responsibility.
Ecological principles for fire management	As published as an attachment to Fire Policy 19 – Fire Management.
Fire control line	A natural or constructed barrier, or treated fire edge, used in fire suppression and prescribed burning to limit the spread of fire.
Fire danger	The resultant of all factors which determine whether fires start, spread, and do damage and whether and to what extent they can be controlled.
Firefighter	Any employee or agent of the Department who occupies or is designated to occupy a position in the Australian Inter-service Incident Management System – Incident Control System (or its successors) for the purpose of fire suppression.
Firefighting operations	Any work or activity associated directly with the control of wildfire.
Fire investigator	A person accredited by the Department for the purpose of investigating the cause and origin of wildfire.
Fire load	The combination of the probable number of wildfires in a given period, the number of existing wildfires, and their anticipated difficulty of control.
Fire prevention	All activities concerned with minimising the incidence of wildfire, particularly those of human origin.
Fire protection	All activities designed to protect an area (including human life, property, assets and values) from damage by wildfire.
Fire regime	The history of fire use in a particular vegetation type or area including the frequency, intensity, season and scale of burning. It may also include proposals for the use of fire in a given area.
Fire Risk to Resources Model	A decision process associated with determining the number and competence of personnel and the type, quantum, capacity and location of resources needed to manage fire by the Department to a acceptable standard.
Hazard	A fuel complex defined by volume, type, condition, arrangement and location that determines both the ease of ignition and of fire suppression difficulty.
Incident	An emergency incident that requires a specialised response by competent personnel and appropriate equipment over a relatively short period of time (hours to days).
Incident Action Plan	A plan developed by an Incident Management Team and approved by the Incident Controller for the combat of an emergency incident.

7.3 DEFINITIONS

Incident Controller	The person having overall management of the fire in accordance with the Australian Inter-service Incident Management System-Incident Control System (or its successors).
Incident level	A descriptor reflecting the level of complexity of an emergency incident ranging from Level 1 for low complexity to Level 3 for high complexity.
Incident Preparedness and Response Plans	A plan prepared by each region and district for the purpose of preparing for and responding to wildfire on Department-managed land.
Interim guidelines	A document that provides guidance to land managers in the absence of an approved management plan.
Management plan	A plan required under Part V of the CALM Act for the management of a defined area of land.
Master Burn Plan	A plan developed and reviewed each year setting out the location and scheduling of prescribed fire for the next three years.
Post incident analysis	The analysis of all activities associated with prevention, preparedness, response and recovery of an emergency incident aimed at developing recommendations to ensure improved performance in future.
Post incident debrief	The collection and collation of information from personnel involved in an emergency incident.
Prescribed burning	The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives. It is undertaken in specified environmental conditions.
Prescribed Fire Manual	Document providing guidance to personnel involved in prescribed fire planning and application.
Prescribed Fire Plan	A plan prepared to enable the implementation of prescribed fire over a specified area under specified conditions to achieve specified management outcomes.
Regional indicative burn plan	A plan that sets out the areas and schedule of burns intended to be undertaken within the planning period.
Rehabilitation plan	A plan setting out actions required to stabilise and rehabilitate disturbance associated with fire suppression operations.
Risk	The combination of the probability of a situation occurring and the consequence of that occurrence.
Safe	A stage post fire (prescribed or wildfire) when no further action or attention is required to prevent the fire escaping from its intended location.
Smoke management guidelines	Guidelines developed for use by Departmental personnel to minimise the impact of smoke resulting from prescribed fire operations on populated areas.
Traditional owners	Aboriginal people with a customary or traditional association with the land, regardless of their common law native title.
Unallocated Crown land	Land belonging to the Crown with no vested purpose.
Unmanaged reserves	Land belonging to the Crown that has not been vested with an agency for management.
Water point	A permanent (dam, water hole or tank) or mobile (tanker or moveable water tank) source of water for the replenishment of fire suppression equipment.
Western Australian Emergency Management Hazard Plan	One of many documents prepared by the emergency services of Western Australia as required by the <i>Emergency Management Act 2005</i> to prevent, prepare, respond and recover from a specific type of emergency, eg. flood, fire, cyclone etc.
Westplan Bushfire	A plan required under the <i>Emergency Management Act 2005</i> that sets out the arrangements for the management of wildfire incidents.
Wildfire	An unplanned grass, scrub or forest fire.



POLICY STATEMENT NO. 19

FIRE MANAGEMENT POLICY

1. OBJECTIVE

The Department will manage prescribed fire and wildfires on lands managed by the Department to protect and promote the conservation of biodiversity and natural values whilst also providing for protection of human life and community assets. The Department will also promote fire management that protects biodiversity on lands not managed by the Department.

Fire management will be planned and implemented in partnership with other landowners and land managers, fire authorities and the community. The Department will implement an informed and balanced approach to risk management. A variety of fire regimes incorporating different frequency, intensity, season and scale will be applied at the landscape scale on lands for which the Department has a fire management responsibility.

2. BACKGROUND

The rationale and the principles upon which this policy is based are provided in the Appendix.

3. LEGAL BASE

- Sections 33(1)(a) and 33(3) of the *Conservation and Land Management Act 1984* (CALM Act) provide for the Department to manage lands to which the Act applies, according to management plans or, in the absence of a management plan, in accordance with the necessary or compatible operations provisions of the Act depending on the land category. Fire management activities are subject to these provisions.
- The *Bush Fires Act 1954* applies to land throughout the State including Department-managed lands. The provisions of the Bush Fires Act do not, however, affect the provisions of the CALM Act and the Department is generally not bound by the Bush Fires Act.
- Section 39 of the Bush Fires Act provides wide-ranging powers for a bush fire control officer to take necessary steps to extinguish a fire. If an authorised CALM Act officer is present at a fire on or near any Crown land, the officer may take supreme control of the fire as if the officer were a bush fire control officer appointed by a local government authority. The Bush Fires Act also provides other powers to designated Departmental officers. Section 56 of the Act imposes a specific duty on an authorised CALM Act officer to take enforcement actions under the Bush Fires Act (eg. to demand the name and address of an offender, to require a person to produce an authorisation to light a fire, and to apprehend an alleged offender without a warrant).
- The *Wildlife Conservation Act 1950* and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* provide special protection to threatened species (both Acts). The Commonwealth

Act also protects threatened ecological communities. These impose an obligation to conduct fire management activities accordingly.

- Under Common Law, the Department falls under a duty as an occupier to take all reasonable care to eliminate or minimise foreseeable risks of harm. The Department could be held liable for injury or loss caused by fire that a Departmental employee had negligently lit or negligently failed to control.
- In July 2003 the Department was allocated the role of managing fire preparedness on non-metropolitan, non-townsite unallocated Crown land and unmanaged reserves. The responsibility for fire suppression on these lands remains with local government.
- Under the Western Australian Emergency Management Arrangements that are outlined in the State Emergency Management Committee Policy Statement No 7, the Department is recognised as the Hazard Management Agency (HMA) for wildfires on or near CALM-managed lands. Under these arrangements, the HMA "is responsible for ensuring that emergency management activities pertaining to the prevention of, preparedness for, response to and recovery from a wildfire are undertaken". The HMA's responsibilities include the preparation of a strategic plan or arrangements (WESTPLAN-WILDFIRES) that is designed to cope with wildfires on or near CALM-managed lands, and that includes details of joint agency operational arrangements.

4. RELATIONSHIP TO OTHER DEPARTMENTAL POLICIES

The Department's Fire Management Policy is consistent with and recognises the requirements contained in other Departmental policies:

- Policy 3 Management of Phytophthora and Disease caused by it
- Policy 9 Conservation of Threatened Flora in the Wild
- Policy 10 Rehabilitation of Disturbed Land
- Policy 31 Management of Reserves for the Conservation of Nature
- Policy 40 Road Management
- Policy 41 Beekeeping in Public Land
- Policy 49 Radio Communications
- Policy 60 Occupational Health and Safety
- Media Relations Policy
- Public Participation Policy
- Wilderness Policy

5. POLICY

5.1 Safety and risk

Safety	Firefighter and public safety is the first priority in every fire management activity.
Risk management	The protection of human life and biodiversity, cultural and community assets will be undertaken commensurate with the risk posed by fire to human life and those assets and the consequence of fire impacting on human life and those assets.

5.2 Use of fire

Objectives for fire management	Fire will be used to achieve a range of land management objectives, including the conservation of biodiversity; maintenance of ecosystem health and productive capacity; conservation of soil, water and catchment values; conservation of natural and cultural heritage; regeneration and protection of native forests and plantations; and protection of human life, community assets, indigenous heritage sites, recreation sites and scenic values. These objectives, and the methods used to achieve them, will be specified in individual burn prescriptions.
Prescribed burning	Prescribed burning plans will integrate biodiversity conservation and asset protection objectives in order to optimise outcomes. In the planning of prescribed burning programs the assessment of fire requirements for biodiversity outcomes will be given first consideration and any shortcomings from this approach for other objectives will be taken into account subsequently so that prescribed burn plans achieve all priority objectives.
Manage for diversity	A variety of fire regimes incorporating different frequency, intensity, season and scale will be applied at the landscape scale (tens of thousands of hectares) and other scales. Planned fire regimes will incorporate the incidence of wildfires.
Fire planning	Planning for prescribed burns will incorporate the need for biodiversity conservation and strategic protection from wildfires, at both the landscape scale and land management unit scale (several hundred to several thousand hectares). Three year indicative prescribed burning plans and annual burning plans will be prepared. The planning and application of fire regimes will require consideration of interacting factors such as invasive species (weeds and feral animals), regeneration of native species, grazing impacts, fire history and the size of the park/reserve/forest. This is of particular concern in fragmented landscapes where Department-managed lands are surrounded by extensive urban and agricultural land uses.
Community consultation	During the planning process for prescribed burning the Department will consult with traditional owners, the community, government agencies and specific stakeholders. In particular a formal process of public consultation and engagement will be implemented during the preparation of the three year indicative prescribed burning plans for the south-west forest regions and annual plans for other regions. Fire management will be considered during public consultation on the content of area management plans prepared for the Conservation Commission. Consultation processes will also be used as an opportunity to develop community understanding and support for fire management programs.
Community awareness and education	The Department will make available to the community information concerning the outcomes of the community consultation process. Information on fire management and the Department's planning and operational processes will also be published and posted on the internet.
Qualified personnel	Prescribed burns will be planned, directed and conducted by qualified and experienced staff. Written prescriptions will be prepared by trained staff, with appropriate input from other Departmental staff and sources external to the Department.
Approvals	Every prescription will be reviewed and approved by the responsible manager prior to implementation. Each year the three year indicative prescribed burning program and the proposed annual burn program for the south-west forest regions will be brought to Corporate Executive by the Director of Regional Services for endorsement.
Monitoring and audit	The extent to which prescribed burn objectives have been achieved will be monitored and recorded in order to continue the process of adaptive management. Fire management plans and prescriptions will contain performance indicators and monitoring criteria against which achievements can be measured. The outcomes of monitoring and performance appraisal will be reported at appropriate intervals to the Executive Director. The achievement of fire management objectives contained in CALM's prescribed burning programs and in area management plans will be subject to periodic audit by the Conservation Commission.
Smoke management	Prescribed burns will be managed to reduce the risk of smoke causing detrimental impacts on population centres and other sensitive areas through application of smoke management guidelines. Potential impacts of smoke and ash on water catchments, road traffic, neighbours and visitors, and firefighters will be considered when planning and implementing prescribed burns.

5.3 Fire suppression

Suppression capacity	The Department will maintain its fire management, suppression and response capability in accordance with sound risk management principles recognising the availability of resources from local government volunteers, fire authorities and other sources. This requires an adequate state of preparedness and standards of fire suppression relative to the values at risk, and to the difficulty of controlling fires in a safe and cost-effective manner.
Readiness	The Department will, in consideration of risk assessment outcomes and the availability of resources from other agencies, maintain an effective and efficient fire-suppression capability of personnel, equipment and aircraft. Resources need to be mobile and personnel must be fit, skilled and well trained.
Detection	The Department will, in high risk or high value areas, maintain fire detection and fire reporting systems that will give timely and accurate warning of fires threatening community or environmental values. Lower level detection and reporting systems will apply in other areas.
Response	The Department will respond to fires occurring on or near Department-managed lands to a degree that is appropriate to the values at risk, the prevailing and forecast weather, the availability of resources, the cost of the suppression operation, and the likelihood of long-term impact or net gains to the environment. In circumstances where impacts of the wildfire are likely to be low or resources are limited, the response may mean observation, rather than active suppression.
Control	The Department will take control of, or provide assistance at fires on or near Department-managed lands in accordance with State and local arrangements between the Department and fire authorities and other agencies.
Access	The Department will maintain an effective system of roads, fire access tracks and helipads to provide access and safety for firefighters.
Environmental harm	The Department will fully consider the protection of environmental and other values in determining strategies for fire suppression. Where appropriate, fires may be contained within management units defined by existing roads rather than by constructing new firelines around the perimeter of the fire. Where firelines are constructed during suppression operations, they will be subsequently rehabilitated to minimise the threat of soil erosion, weeds or spread of dieback disease.
Training	The Department will develop and deliver high quality training and performance assessment programs for Departmental staff for appropriate roles in fire and incident management.
Interagency arrangements	The Department will establish interagency agreements and working arrangements with fire authorities and volunteers to provide cooperative and coordinated firefighting that can deal successfully with the full range of emergencies on or near Department-managed lands.

5.4 Wildfire prevention

Prevention	The Department will plan and conduct wildfire prevention activities to minimise the incidence of preventable wildfires (ie. unplanned fires of human origin).
Identify fire cause	The Department will, where practical, attempt to identify the origin and cause of wildfires on lands under its control and will investigate fires that result in damage to private or community property. Where regulations have been breached, the Department will take appropriate action to identify and, as appropriate, arrange prosecution of offenders.
Arson	The Department does not have jurisdictional responsibility to effect initiatives for arson prevention or preparing communities for wildfire events. However, the Department will work closely with the Fire and Emergency Services Authority, the Police Arson Squad and local government authorities in developing and implementing coordinated fire prevention and preparedness programs.

5.5 Liaison

Interagency arrangements	CALM will participate with other State agencies and local government authorities in developing approaches to fire risk mitigation, including in peri-urban areas.
Partnerships	The Department will carry out its fire management role in partnership with other relevant agencies, primarily the Fire and Emergency Services Authority, the Forest Products Commission, local government authorities and Volunteer Bush Fire Brigades.

5.6 Research

Research and knowledge	The Department will sponsor and undertake research into fire management and ensure that the resultant knowledge is disseminated to fire managers and the community.
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6. POLICY IMPLEMENTATION REQUIREMENTS

- To enable a consistent, reliable and transparent assessment of the risk and consequence of wildfire to biodiversity, cultural and community assets, the Department will utilise the Australasian Standard (AS/NZS 4360 Risk Management) as the basis for its approach to wildfire risk management.
- The Department recognises the importance of science, local knowledge and expertise and Indigenous knowledge to underpin fire management. The Department will continue to promote and support research into fire ecology, fire behaviour, fire information systems and fire control systems and to apply adaptive management principles in its fire management operations.
- The Department will work with fire management agencies and research organisations to investigate and implement fire management strategies that mitigate against the impacts of climate change with respect to fire ecology and wildfire management.
- In order to facilitate support and assistance for cooperative and coordinated fire management across jurisdictional boundaries, the Department will implement education and awareness programs for neighbours and the community on best practice fire management.
- In order to promote the safe, efficient, effective and integrated management of fire and fire related activities on lands managed by the Department, a comprehensive set of standards, procedures and prescriptions will be published and maintained.
- Strategies other than prescribed burning, such as mechanical treatments of vegetation (e.g. rolling or slashing) and grazing with livestock will be considered and applied where appropriate in meeting management objectives for the land in question.
- The need for effective fire management will be recognised in the policies and plans prepared by the Department. This includes area management plans prepared for the Conservation Commission for regions, State forest, parks and reserves as well as fire protection plans for high value assets, property, plantations etc as required. Every district will annually prepare a Fire Preparedness and Response Plan and a Prescribed Burning Plan.
- All instructions, prescriptions or guidelines developed for fire management activities undertaken by the Department must be consistent with the fire management principles and operational rationale in the Appendix.
- The Department will provide appropriate awareness and training programs for all staff likely to participate in any aspect of fire management to ensure adequate understanding, knowledge and skill levels to implement the fire policy in an environmentally sensitive, safe and cost-effective manner.
- The Department will use its best endeavours to both consult and involve traditional owners in fire management activities where the objective is to replicate traditional burning practices.
- The Department will contribute to State-wide fire management by representation on community based and interagency committees and working groups concerned with fire management at local, regional and State levels.
- The Department will maintain formal liaison with fire management authorities in other countries, States and Territories to ensure the currency of mutual aid arrangements and the transfer of knowledge on best practice fire management.

- Departmental staff must meet their obligations under this Policy through assigned levels of delegation, approved budgets, sourcing and planning as provided for in the Department's table of delegations, Departmental and other instructions.
- The implementation of this Policy will be subject to Departmental audit and periodic audit by the Conservation Commission in assessing the implementation of management plans.

7. CUSTODIAN

The Director of Regional Services is the custodian of this Policy.

8. DIRECTOR GENERAL APPROVAL



Director General

This appendix outlines the rationale for fire management plans and activities implemented by the Department of Conservation and Land Management. A set of principles to guide fire management is also outlined.

Rationale

- Fires have occurred regularly on most lands managed by the Department. Fires from natural causes (eg. lightning) will inevitably occur. Fires from human activities, either deliberate or accidental, will also occur, but unplanned fires may be minimised by effective public education and awareness, and by enforcement of legislation and compliance management.
- Aboriginal people have inhabited Western Australia for more than 40,000 years and over this period they have used fire as a management tool for hunting, access and spiritual reasons. The landscapes that European settlers and their descendents have come to recognise as being distinctively Australian have been fashioned by fire over many generations.
- Fire is a natural environmental factor that can have both destructive and beneficial effects. It can regenerate, recycle nutrients, create and maintain habitats, but can also kill, injure and destroy. The impact of fire varies with the frequency, intensity, scale, time of year and the fire sensitivity of the community in which it occurs.
- Wildfires do not distinguish between land tenures. Fire protection and fire management regimes must involve all State Government agencies with land management or fire management responsibilities, local government authorities and private land managers working cooperatively to achieve agreed fire management objectives.
- Fire has very different impacts on the biota contained in the 26 bioregions represented in Western Australia. Fire regimes must be appropriate to the needs of each bioregion.
- Exclusion of fire from naturally fire prone vegetation over large areas results in the gradual build-up of live and dead vegetation which becomes fuel and increases the risk of large, intense and costly fires. In most vegetated ecosystems, the exclusion of fire for long periods over large areas is difficult to achieve, and may also be undesirable from a biodiversity conservation and community protection point of view.
- A regime of too frequent fires, planned or unplanned, can have adverse impacts on biodiversity for some species and in some ecosystems including riparian zones, granite outcrops, wetland ecosystems and small patches of remnant vegetation.
- Planned fire will be excluded from representative scientific reference areas, including fire sensitive ecosystems, and these will provide an important benchmark against which the effects of other fire regimes can be evaluated. Some biota and ecosystems may also benefit from long periods of fire exclusion. The location and size of fire exclusion areas should take account of firefighter safety and other management influences.
- Planned fires can be used in natural areas to minimise loss of life, property and services, and to achieve biodiversity conservation objectives. This is likely to be a more cost-effective and predictable method of fuel management over large areas than using alternative methods including manual, mechanical, chemical and biological methods.
- Suppression difficulty and damage potential to life and property of a bushfire are proportional to the size of the fire, the conditions under which it is burning, and the rate and amount of heat energy released (fire intensity). The intensity and speed at which fire burns is related to the quantity and structure of accumulated litter, bark and plant material, which is in turn related to the period since last fire. In most vegetated ecosystems, accumulated fuel loads can be reduced by low intensity prescribed fires. This reduces the likelihood of intense fires even under extreme conditions and improves the capacity for firefighters to safely control a fire. Under extreme fire danger conditions, the spread of fire may only be retarded in light fuels.
- Threshold levels of available fuel quantities or fire intervals have been identified in many major vegetation types which represent the upper limits beyond which fire behaviour in summer conditions will be severe and too dangerous to be suppressed by either ground or aerial fire suppression methods. In situations where a number of fires are burning simultaneously and firefighting resources are fully committed, the existence of strategically-located areas of reduced fuel provides fire managers with greater flexibility in the deployment of available resources. Fires burning into light fuels may be given lower priority for attention because they are less likely to exhibit severe fire behaviour.
- Maintaining air quality is a major challenge in the execution of approved prescribed burning programs. The need for prescribed fire to conserve biodiversity and to protect community values presents a risk to achieving the standards of air quality regulations in high population areas. This risk can be minimised through the use of sophisticated smoke prediction models.
- Public understanding of the role and effects of fire, and application of planned fire and fire suppression operations is vital. Effective communication and consultation with the community leads to greater understanding and support for fire management programs, and ensures that knowledge within the community is made more readily available to managers.

Principles for Fire Management

- The vegetation and climate across Western Australia make it highly prone to bushfire. Over millions of years fire has contributed to the evolution of the State's ecosystems. Fire is an important disturbance factor that will continue to influence the biotic composition and structure of all natural ecosystems.
- Plant and animal species and communities vary widely in their adaptations to, and reliance on fire. Species and communities require particular fire regimes for their long-term survival. Such requirements may vary within the ecological and geographical range of species.
- There is no single fire regime that is suited for all flora, fauna and ecosystems. Organisms have developed with a great variety of fire regimes, and thrive in different circumstances. A fire regime that enables one organism to gain competitive advantage will disfavour a competitor.
- Diversity and variability in fire regimes at the landscape level help maintain biodiversity. The application of ecologically based fire regimes that provide for an interwoven mosaic of vegetation and habitats representing a range of fire intervals, fire intensities, seasons and scales will help optimise the conservation of biodiversity. Patchiness of burning is an important factor in providing environmental heterogeneity at a local level. In some instances fire exclusion will be planned. On the other hand, widespread, high intensity fires will periodically remove most of this local patchiness from the landscape. Patchiness can be achieved through applying fire during periods of fuel moisture differential, through the lighting pattern used, and by burning adjacent to light fuels.
- Fire management at a very local level may be critical for the survival of some threatened species and ecological communities.
- Following fire, other factors such as climatic events (e.g. drought) and insect attacks often drive ecosystems towards a new transient state with respect to species composition and structure. This may preclude the identification of changes specifically attributable to fire.
- Climate has a major influence on fire regimes, and is one of the fundamental factors determining the distribution of vegetation communities at a regional scale. Some regions of the State have experienced significant shifts in climate over the past three decades and there is an expectation amongst the scientific community that the rate of climate change may accelerate in the future. Fire management should therefore be based on an understanding of climatic trends and adapt to meet changing circumstances.
- All available knowledge including life histories, vital attributes of the native flora and fauna and knowledge of indigenous traditional fire regimes will be used to develop ecologically-based fire regimes.
- Fire management policies and practices should adapt to new knowledge gained through strategic long-term and short-term research and monitoring programs. This adaptive approach to fire management should be flexible to any changes to community values and expectations.
- Fire management planning on lands managed by the Department must address the threats and impacts of wildfire, accommodate the use of planned fire and provide for the achievement of specified land management objectives.
- The response to the threat of wildfire on Departmental lands must consider legal requirements, be thoroughly planned, safe, effective, cost-efficient and environmentally sensitive. All fire management activities, including fire suppression and prescribed burning, must be conducted in accordance with clearly defined procedures that provide for safe work practices and have outcomes monitored and recorded.
- Planning an appropriate response to the occurrences of wildfires must include an assessment of the threat to human life, community assets and services, and natural values, and consider these in conjunction with the management objectives of the area.
- Principles of environmental care must guide all preparedness, suppression, recovery and prescribed burning activities.



