



Government of **Western Australia**
Department of **Environment and Conservation**

FIRE # 2 sub 5

Your ref:
Our ref: CEO1141/12
Enquiries: Murray Carter
Phone: 9219 9228
Fax: murray.carter@dec.wa.gov.au

Mr A P O'Gorman MLA
Chair
Community Development and Justice Standing Committee
Parliament House
PERTH WA 6000



Dear Mr O'Gorman

**COMMUNITY DEVELOPMENT AND JUSTICE STANDING COMMITTEE INQUIRY INTO
THE STATE'S PREPAREDNESS FOR THE 2012/13 FIRE SEASON**

I refer to your letter of 24 September 2012 inviting the Department of Environment and Conservation (DEC) to make a submission to the above Inquiry.

Please find attached a submission addressing points (i) and (ii) of the terms of reference for the Inquiry. DEC's attendees at the hearing on 29 October will be Mr Peter Dans (Director Regional Services) and myself.

Yours sincerely

Keiran McNamara
DIRECTOR GENERAL

26 October 2012

Att.

Community Development and Justice Standing Committee

Bushfire Preparedness Inquiry 2012-13

DEPARTMENT OF ENVIRONMENT AND CONSERVATION SUBMISSION TO INQUIRY

Introduction

DEC is the lead agency responsible for conserving Western Australia's native flora, fauna and natural ecosystems, and many of its unique landscapes. With this comes full fire management responsibility, whether for community protection or biodiversity conservation, on more than 26 million hectares of DEC-managed lands and partial fire management responsibility on over 89 million hectares of unallocated Crown land and unmanaged reserves.

DEC utilises prescribed burning as a tool to achieve a range of land management objectives including bushfire risk mitigation. DEC also has the lead role in responding to and suppressing bushfires on DEC-managed lands across the State (outside of the Perth metropolitan region and major towns).

In the south-west forest regions and in the Midwest and South Coast regions (see Figures 1 and 2), DEC has significant fire management capacity and is currently supported by officers of the Forest Products Commission, Fire and Emergency Services Authority (FESA) and the volunteer bushfire brigades of local government authorities. DEC's capacity to undertake initial response in regions outside the south-west is more limited. Under local mutual aid arrangements, initial attack is undertaken by the nearest fire suppression resource regardless of tenure.

Effective interagency communication is an essential component in reducing the risk associated with bushfire. Recent initiatives to further promote inter-agency communication include the formalised procedures to be included in a new State Fire Arrangements document requiring the presence of the DEC State Duty Officer at bi-weekly FESA teleconferences and the presence of the FESA State Duty Coordinator at DEC daily teleconferences on an 'as required' basis.

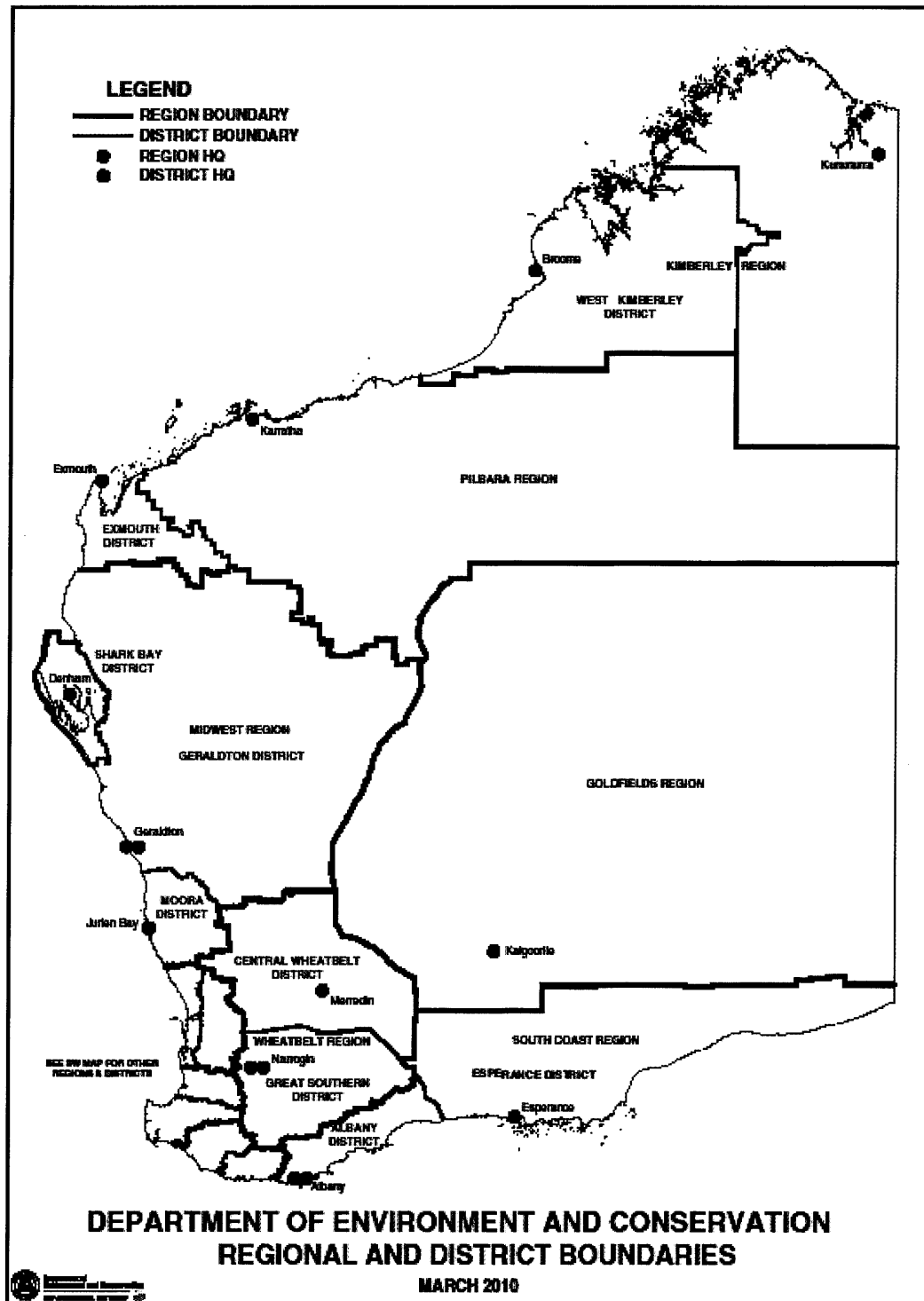


Figure 1: Map of DEC regions and districts statewide

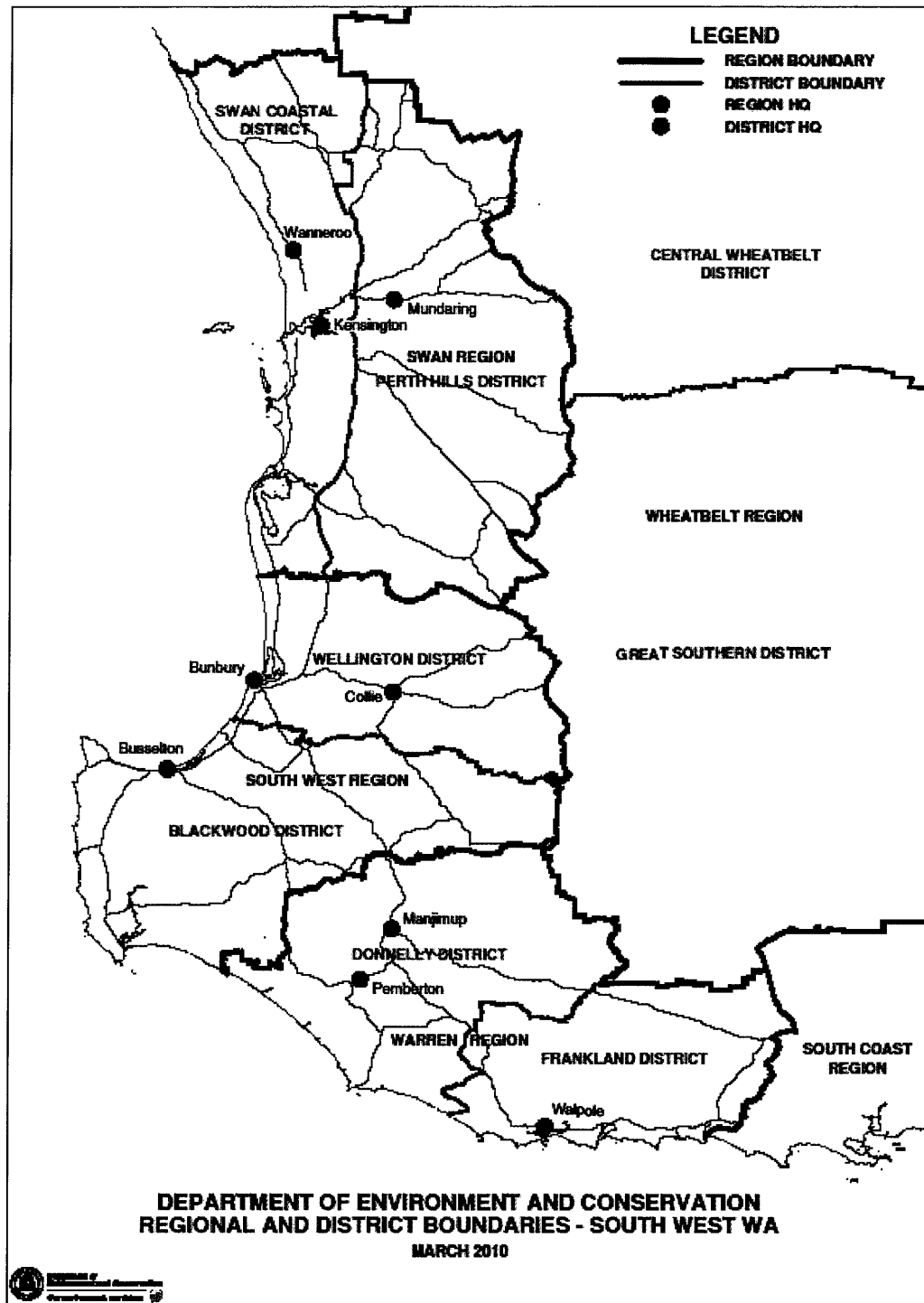


Figure 2: Map of DEC forest regions and districts

Climate, fuel load and prescribed burning

The use of prescribed burning for fuel hazard reduction has been proven to significantly reduce the impact of bushfires by reducing fire size and intensity. As shown in Figure 3, an inverse relationship exists between the area burnt by prescribed fire and the area burnt by bushfire.

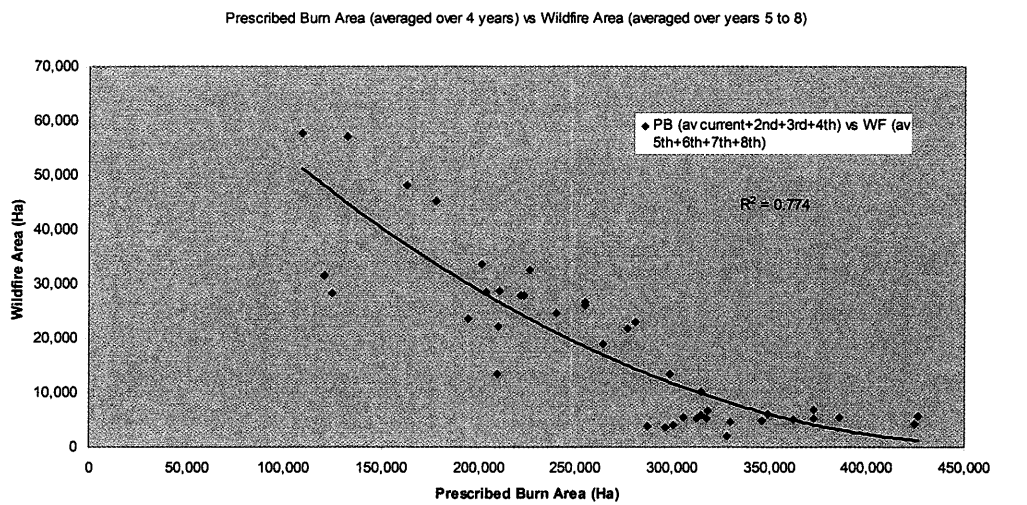


Figure 3: Correlation between the annual area of prescribed burns averaged over four years and the area of bushfires averaged over the following four years in south-west forest regions of WA.

This is also reflected in Figure 4 which highlights the increase in area burnt by bushfire over the last decade corresponding with the decline in area burnt through prescribed burning.

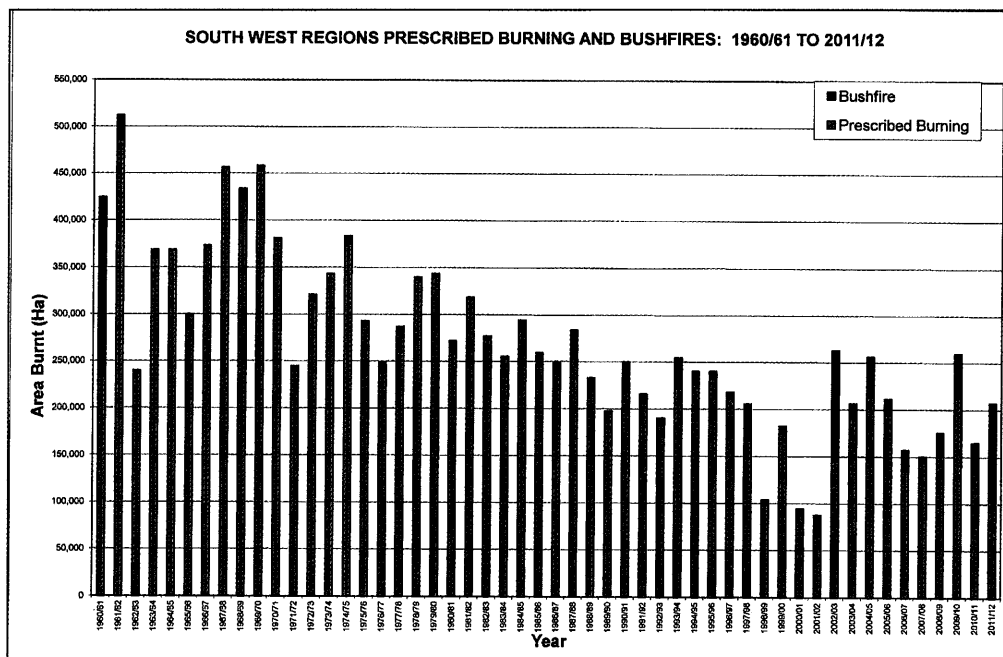


Figure 4: South-west regions prescribed burning and bushfires: 1960/61 to 2011/12

Figures 3 and 4 together illustrate that as the annual area burnt through prescribed burning reduces, the annual area burnt by bushfire increases. DEC has a three year/six season prescribed burn program in place with an annual burn target for the approximately 2.5 million hectares of DEC-managed lands in the south-west forest regions of 200,000 hectares. This target is well founded and risk-based, and science and experience demonstrate that both landscape scale and strategic burns near communities and assets are required.

Fuel reduction programs better enable forest fire managers to control major fires and prevent serious impacts on lives, properties and environmental values.

While DEC has achieved, on average, 83 per cent of this target over the past 20 years, there has been a build-up of fuels as a result of the relatively low achievement in more recent years. A total of 103,000 hectares of prescribed burning was achieved in 2011/12, and in the last six years DEC has achieved, on average, 74 per cent of the target.

Fuel age has been mapped for the 2.5 million hectares of DEC-managed lands in the south-west. Figure 5 shows the fuel age profile across DEC's south-west forest regions for the years 2000, 2006 and 2012. The predominant feature to note is the increased area with fuel ages of 7+ years, and greater inter-connectedness of these high fuel aged areas. Scientific research and operational experience have shown that fires in fuels older than seven years will prove difficult to control under average summer conditions of moderate to high fire danger in open eucalypt forest.

The 2.5 million hectares of DEC-managed lands comprises 46% of the total land area in DEC's three south-west regions. Equivalent fuel age mapping is not available for the non-DEC land, which comprises a mix of cleared and vegetated areas. The state of south-west fuel loads in the lead-in to the 2012/13 southern bushfire season is apparent from Figures 5 and 6.

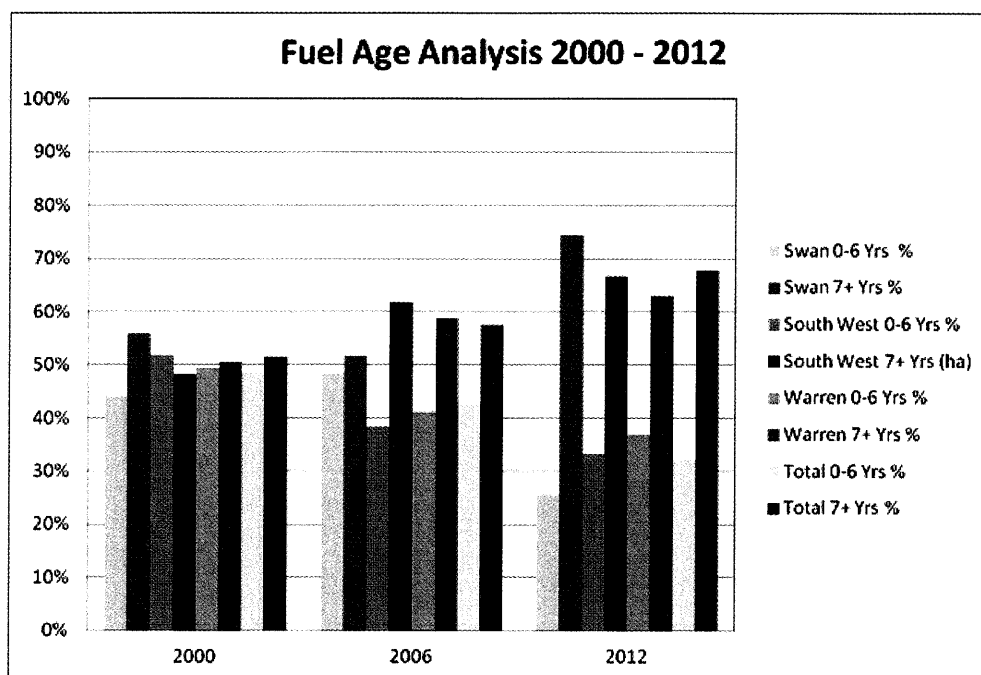


Figure 5: Fuel age analysis 2000-2012: regional breakdown

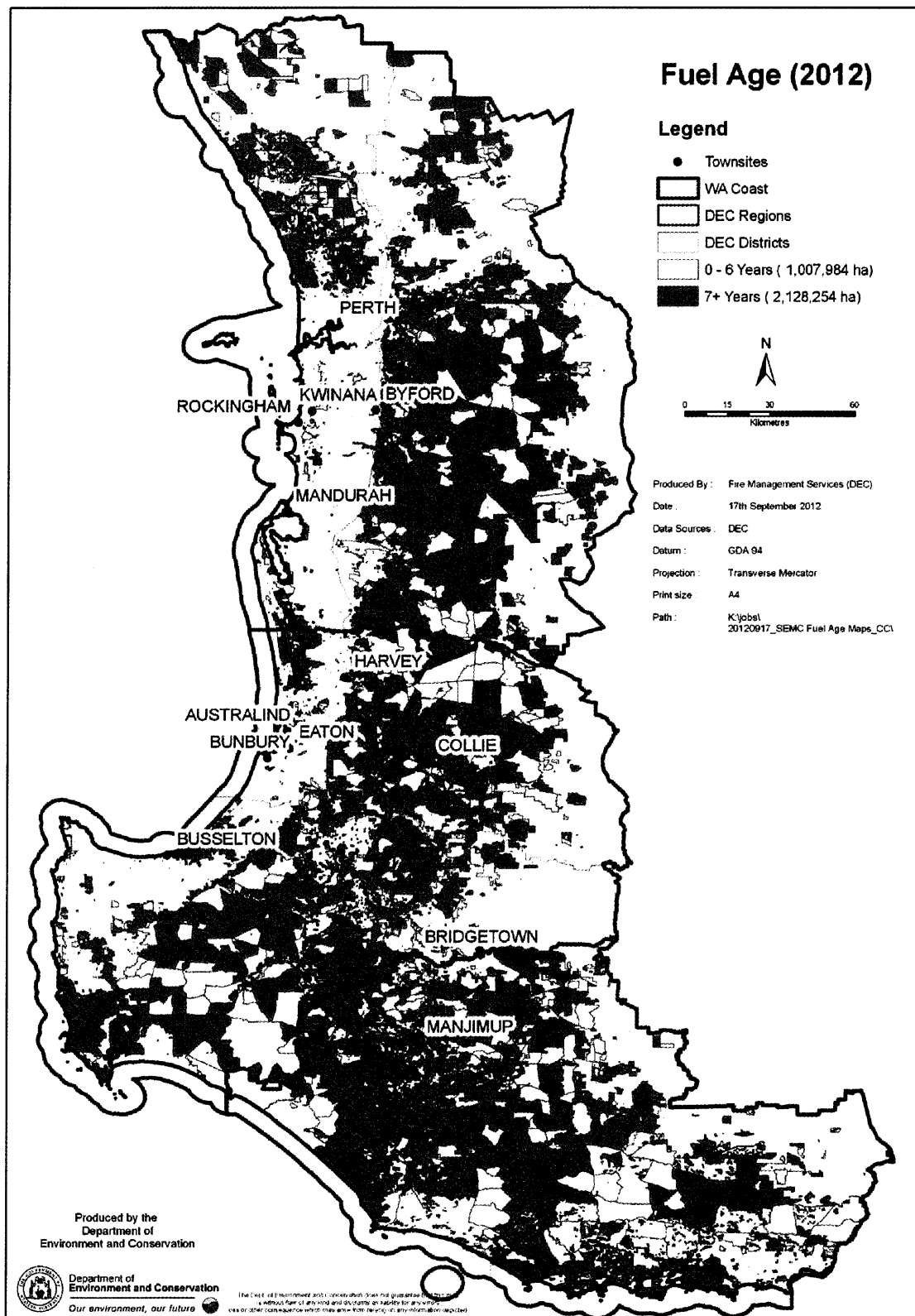


Figure 6: Fuel age distribution 2012

Climatic variability in Western Australia also has an impact on fuel loads. Reduced winter rainfall, late starts and late finishes to the 'wet' season and a longer 'dry' period are features of a warmer, drier climatic era. The annual average rainfall in some parts of the south-west region has declined by up to 18% since the 1970s. Warmer, drier weather reduces the window of opportunity for carrying out low intensity prescribed burns, which means to achieve targets more burning must be done in a narrower window of opportunity.

The 2012/13 seasonal bushfire outlook

Western Australia experienced below average rainfall between April and July 2012, with large areas in the south-west significantly below average. This has exacerbated a rainfall deficiency over the last three years in the south-west classed as severe by the Bureau of Meteorology. This below average rainfall coincided with above average temperatures during the same period. The combination of these two factors has hampered prescribed burning operations and subsequently raised the bushfire risk profile in the south-west of the State. The bushfire potential is also above average for the south-west as a consequence of reduced rainfall, soil moisture deficit and high fuel loads.

In addition, the fire potential across the Midwest, Desert and Nullarbor regions is expected to be above average due to high fuel loads resulting from extensive rainfall.

The spring 2012 outlook released by the Bureau of Meteorology is for a wetter than average season and a possible weak El Nino pattern over the austral summer. Whilst positive in that this will increase soil moisture content, it will also impact on the ability to undertake prescribed burns for mitigation.

The Bushfire Cooperative Research Centre (BCRC) seasonal outlook (Figure 7) shows that more than half of WA is expected to experience above normal bushfire activity. With dry conditions and high fuel loads, the bushfire season for 2012-13 is expected to be long and challenging. There is a heightened risk in key interface areas including Perth Hills and the Leeuwin-Naturaliste Ridge, significantly due to lack of, or uneven, preparedness on non-DEC-managed land near or adjacent to DEC-managed lands.

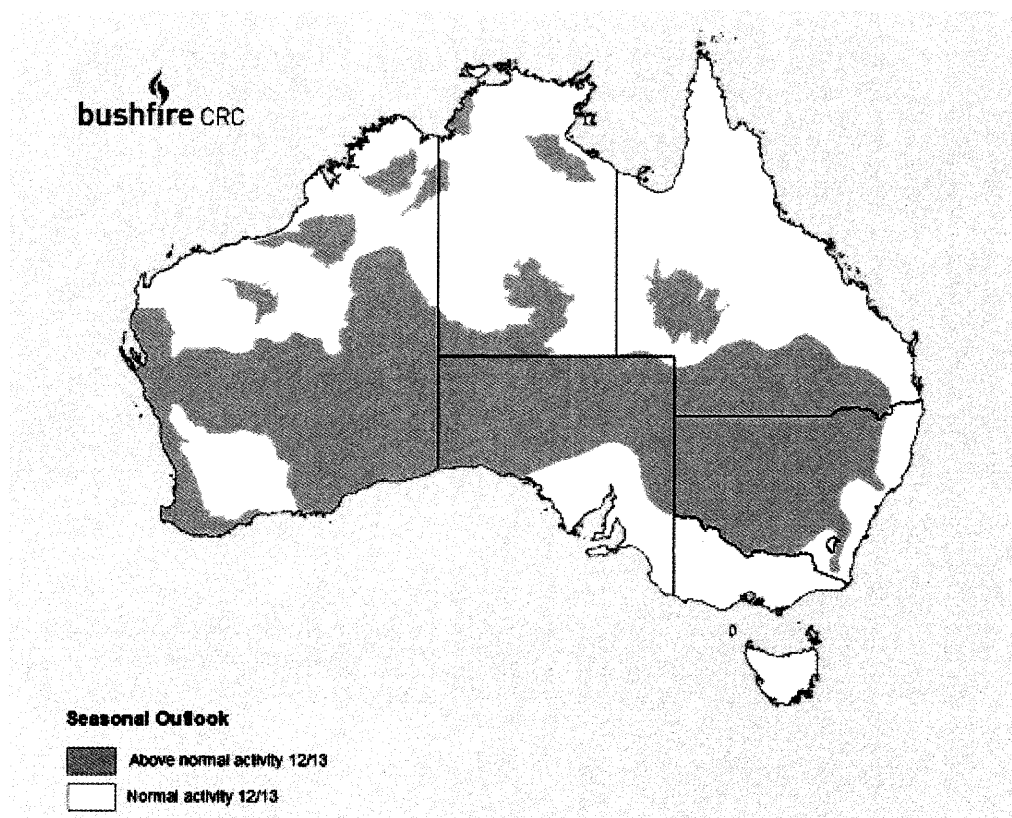


Figure 7: Southern Australian seasonal bushfire outlook 12/13

DEC's preparedness for the 2012-13 season

The 2012/13 Budget provided an increase for fire management, prevention and mitigation in DEC together with the establishment of the Office of Bushfire Risk Management (OBRM). This places the department in a better position to reduce the risk associated with prescribed burning and to respond to bushfires. It also provides the means to address Recommendation 16 of the Ferguson Review (2010) which highlighted the need for succession planning for fire management staff to minimise loss of skills and experience. By December 2012, across the State DEC expects to have 100 dedicated fire management officers and over 300 conservation employees (whose priority is fire management); as well, 500 other DEC staff from across the State are available to undertake roles within incident management teams (IMTs).

DEC will maintain coordination and assemblage of five multi-agency pre-established and rostered Level 3 IMTs, each consisting of around 65 members, across the 2012-13 season to ensure that suitably experienced, qualified and competent personnel are available to fulfill IMT roles. These teams will include some staff from FESA and other agencies involved in bushfire management.

DEC maintains equipment (fire trucks and heavy earthmoving machinery) to meet its responsibilities for bushfire management and response. The current fleet includes 112 fire trucks (89 in the south-west), nine bulldozers, 10 front end loaders, 10 prime movers and five communications buses. DEC also maintains a network of 10 fire lookout towers in the south-west and a fleet of 10 spotter aircraft which operate throughout the bushfire season. DEC contracts eight fixed-wing water bombers from December to April. These are based (two each) at Perth, Bunbury, Manjimup and Albany and, as is the case with all DEC personnel and equipment resources, they are deployed elsewhere in the State to bushfires on DEC-managed lands on an 'as required' basis.

The Report of the Special Inquiry into the November 2011 Margaret River Bushfire made 10 recommendations for change and improvement, most directed at DEC, with particular reference to prescribed burning. Significant work has been undertaken by DEC to implement these recommendations prior to the 2012-13 season.

The fire section of the draft Leeuwin–Naturaliste Capes Area Management Plan has been reviewed in light of the recommendations of both Keelty reports and in consultation with FESA, local government authorities and bushfire brigades. The management plan is intended to be released in early 2013.

Recommendation 2 which states that DEC "urgently undertake a review of its risk management practices as they relate to prescribed burns" has been a particular focus for the department. Risk assessment and the selection of risk treatments will be undertaken as part of all decision-making associated with prescribed burning in a manner consistent with the risk management process specified in the international standard AS/NZS ISO 31000:2009 *Risk management: Principles and guidelines*.

On releasing the report of the Special Inquiry on 23 February 2012, the Government announced that "DEC will suspend further prescribed burns within five kilometres of townsites and rural subdivisions until it has reviewed its prescribed burning processes and brought them into compliance with the latest International Organisation for Standardisation (ISO) standard." On 27 September 2012 the Minister for Environment announced the lifting of this suspension.

Recommendation 3 requested a review of DEC's progress towards implementation of the findings of the Ferguson Review conducted in 2010. Of the 17 observations in the Ferguson report, 10 are considered to have been satisfactorily addressed whilst seven have been partially addressed or are in train through additional funding provided to DEC through the 2012/13 Budget. Of particular note is the approval of the new Prescribed Burning Policy (Policy Statement No. 88) which satisfies part of Ferguson observation 2.

DEC is developing a bushfire research proposal for a project to develop fire behaviour models and predictive tools in coastal heath and is actively working with colleagues in the Bushfire CRC and other research institutions. A Science Concept Plan and job description for a Research Scientist position to undertake the research have been prepared. It is expected the project will commence soon.

Progress towards implementation of Recommendation 5 which relates to succession planning and attraction and retention of staff has been significantly bolstered by the 2012/13 budget increase for fire management which will see 26 new dedicated fire management officer positions and the equivalent of 26 additional Conservation Employee positions created across the State.

Discussions continue at an interagency level with regard to Recommendation 6 as to the formalisation of a structured approach to utilise local government volunteer bushfire brigades and FESA staff in prescribed burning operations. DEC currently extends an invitation to local governments, volunteer bushfire brigades and FESA officers to participate in prescribed burning activities.

Recommendation 7 would require a significant restructure of DEC's regional delivery model and a number of proposals are currently being considered.

With regard to Recommendation 8 of the Special Inquiry, DEC has prepared a communications strategy with the goal: "To better inform the community about the complexities and decisions surrounding prescribed burning." The long-term aim is to take a whole of government approach, however, to satisfy immediate communication needs, DEC is implementing a comprehensive communications strategy which is currently focused on regional media and making information on the DEC website more accessible.

The Department of the Premier and Cabinet (DPC) has carriage of Recommendations 9 and 10.

DEC contributes status updates to the regular stakeholder briefing reports prepared by DPC. The latest stakeholder briefing dated 12 October 2012 is attached.

Summary

In summary, it is DEC's view that the State faces a number of challenges over the 2012-13 season. These include:

- Below average rainfall experienced in winter has resulted in a soil moisture deficit.
- High average fuel levels across the State. In the south-west this is partly because the prescribed burning program on DEC land has not met its target in recent years (due to the reasons outlined above) and there have not yet been major advances in mitigation on other tenures. In large parts of the interior it is due to increased annual fuels resulting from good rains.
- A forecast wetter than average spring that may hinder DEC's ability to undertake prescribed burning for risk mitigation.

Significant progress has been made in terms of preparedness. This includes:

- Considerable progress has been made towards implementing recommendations from reviews and post-incident analyses that resulted from the 2011-12 bushfire season.
- Increased interagency communication and cooperation have been a positive outcome of the two Keelty inquiries and systems are now in place to ensure that these relationships are ongoing and productive.
- Significant improvement in the department's ability to efficiently undertake prescribed burning and bushfire control in the south-west through an increased staffing capacity dedicated to fire management and an improved ability to retain qualified staff as a result of the increased budget allocated to DEC for fire management.

In the short term, however, DEC is of the view this is not likely to substantially improve the State's capacity to manage more than two simultaneous, large and sustained fire incidents in the south-west. Fires in more remote areas present greater challenges as a result of logistical and infrastructural limitations. These long-observed capacity limitations were validated in 2011-12 during the November fires in Margaret River and Milyeannup and the major Carnarvon fire complex during January/February.

DEC is also of the view that while the State is better prepared for 2012-13 relative to 2011-12, due to better resourcing and improved interagency arrangements, the State still faces a significant bushfire threat each year. In the medium term, issues such as the ageing demographic of experienced fire staff, the availability of sufficient experienced accredited personnel to fill senior roles in IMTs, and the inadequate or dated scientific research underpinning knowledge of fire behaviour in various fuel types in a drying climate, represent risks that need to be addressed.