



Department of Environment and Conservation
 2009–10 Yearbook
 Supplement—Fire season report
 2009–10



Department of
 Environment and Conservation



FIRE SEASON 2009–10

The 2009–10 fire season in southern parts of Western Australia experienced different fire weather conditions in the first and second halves of the year. Regular rainfall during the spring months restricted the prescribed burning days in the southern forests. The summer months and the autumn burning period were again abnormally dry. Prescribed burning in autumn commenced in early April, resulting in a successful prescribed burning achievement in the south-west forest regions (Swan, South West and Warren). DEC also completed significant areas of prescribed burning in the Kimberley, Pilbara, Goldfields, Midwest, Wheatbelt and South Coast regions.

The total area of the 603 bushfires attended and monitored by DEC throughout the state was about 2.6 million hectares. Of this area, about 116,969 hectares occurred in the Pilbara Region, 230,491 hectares in the Goldfields Region, 1.68 million hectares in the Kimberley Region, 417,096 hectares in the South Coast Region, 106,564 hectares in the Midwest Region, 2,222 hectares in the Wheatbelt Region and about 47,380 hectares in the south-west forest regions (Swan, South West and Warren).

Lightning-caused fires represented about 27 per cent of all bushfires attended by DEC. This is above the 10-year average of about 23 per cent. Deliberately lit or arson-caused fires started 36 per cent of all fires. This is below the 10-year average of about 44 per cent.

Other causes of bushfires included accidental fires (11 per cent), escapes from private burns (six per cent) and unknown (18 per cent). Eleven bushfires were the result of escapes from DEC prescribed burns in the south-west forest regions. These escapes represented two per cent of all bushfires attended by DEC.

DEC staff attended 403 bushfires in the three south-west forest regions. These fires burned about 39,836 hectares of DEC-managed land and an additional 7,545 hectares of non DEC-managed lands. Five of the biggest fires (in the forest regions) accounted for a total of 39,643 hectares (84 per cent). Ninety per cent of all fires were contained to less than 20 hectares due to the early detection and rapid fire suppression response by DEC. In many cases the fires were rapidly contained where they burned into low fuels within previously prescribed burned areas.

The extremely dry summer conditions that have prevailed since 2006 continued to affect most of the state, and resulted in numerous large bushfires. The most serious bushfires attended by DEC crews occurred in DEC's Midwest and Swan regions. Significant assistance was provided to local government and the Fire and Emergency Services Authority of Western Australia (FESA) at fires burning on private lands in the vicinity of Badgingarra, Arrowsmith and Mary Springs and to fires in the vicinity of Moore River and Toodyay. Other fires of interest occurred at Cornwall Block near Harvey and the Leeuwin-Naturaliste National Park near Prevelly Park. Large fires also occurred in the South Coast Region where assistance was provided to local government and FESA at fires in the Sand Patch area near Albany and two fire complexes east of Lake King and south-east of Balladonia.

During summer DEC crews also contained several fires in the Swan, Warren, Midwest, Kimberley and Pilbara regions.

Departmental pre-formed incident management teams were engaged at two fires during the year. These teams consist of departmental personnel who train together and are ready during the bushfire season to respond to large incidents. The mobilisation of teams to these large, complex fire incidents proved very effective.

Details on the bushfires attended by DEC staff are provided in the tables in the Appendix (pp11–16).

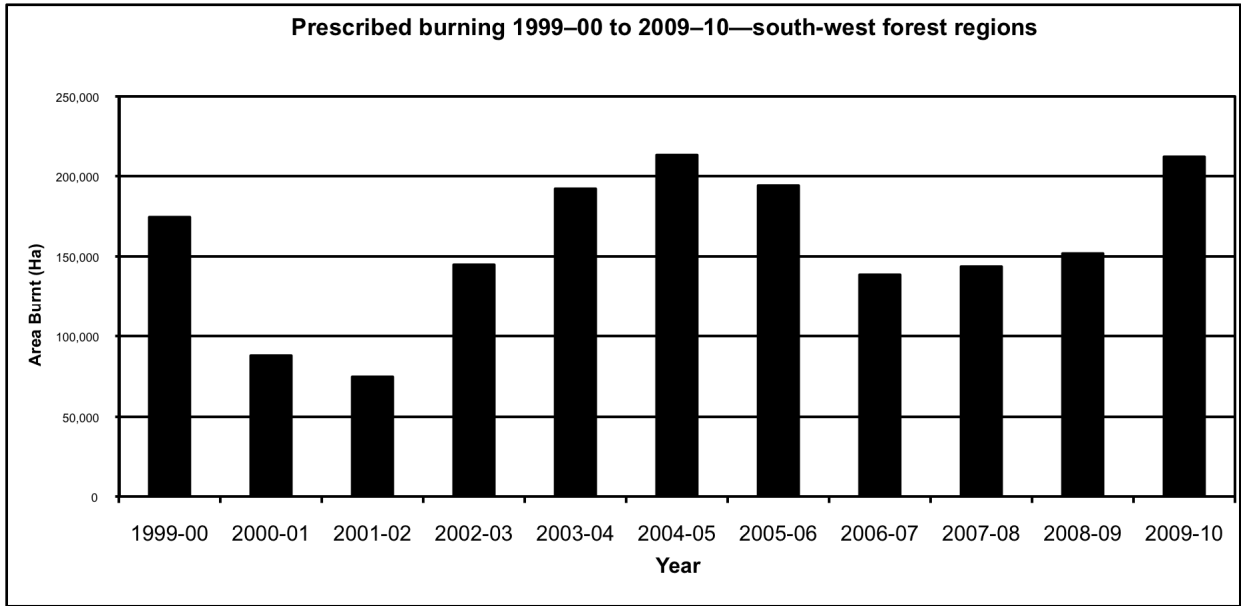
Prescribed burning

Each year the department plans and implements prescribed burning on DEC-managed lands throughout the state for three primary purposes: to protect and conserve biodiversity values and community assets; to reduce the occurrence and impacts of large, intense bushfires; and to regenerate and protect forest ecosystems following harvesting operations or other disturbances. In many cases these outcomes are achieved together within a prescribed burn.

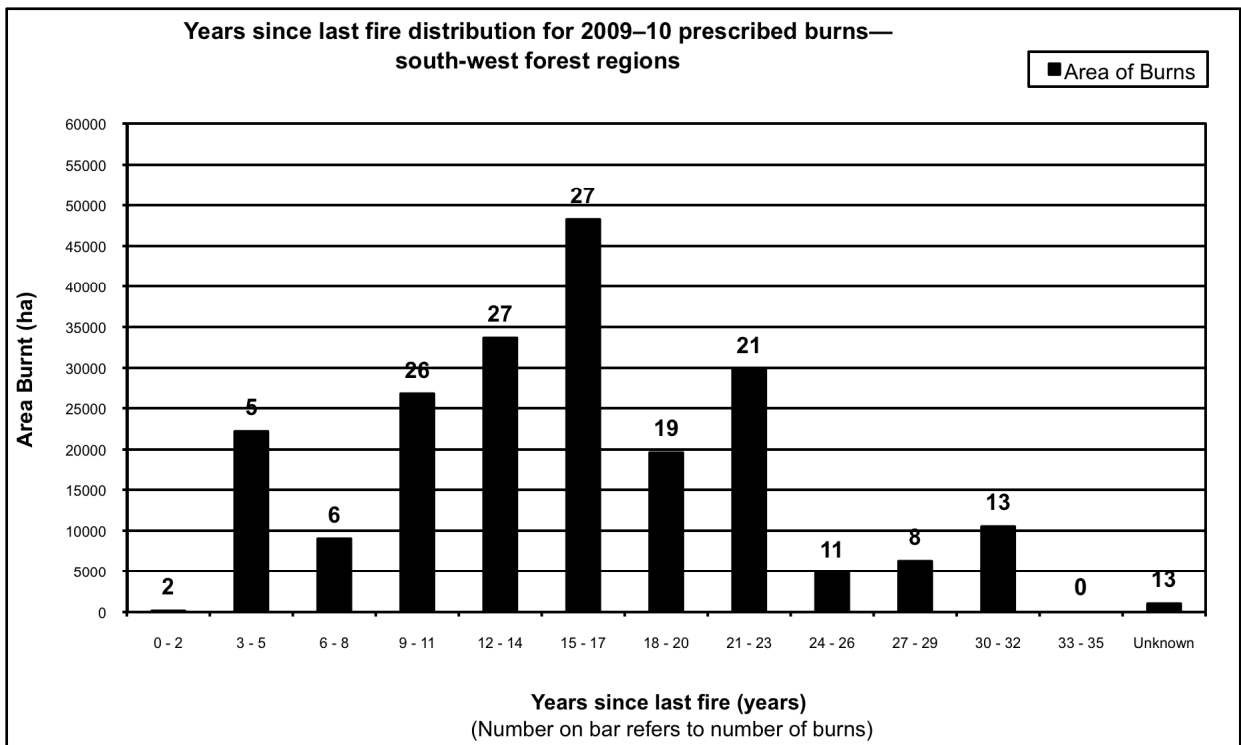
The annual indicative burn target for the south-west regions in the 2009–10 financial year was 200,000 hectares. In order to meet this objective, the Department's Master Burn Planning process identified in excess of 300,000 hectares as available for prescribed burning in the south-west forest regions for the 2009–10 burning seasons. This available burn area, which is in excess of the annual target, provided the flexibility to take advantage of any favourable burning situations throughout the south-west.

DEC achieved this target for the first time since 2004–05. In the south-west forest regions, the prescribed burn program for 2009–10 achieved a total of about 212,017 hectares, including about 8,299 hectares that were burnt for pine plantation protection. Approximately 49 per cent of all burns were undertaken in the spring-early summer period (September to December 2008); 45 per cent in autumn (April to June 2009); and six per cent in winter (July and August 2008).

The chart below shows the achievement of prescribed burning in the south-west forest regions from 1999–2000 to 2009–10. The decline in the burning from 1998 to 2003 reflects the impacts of drought and unfavourable burning conditions that prevailed in these years. The average annual area of burning achieved in the past seven years since 2003–04 hectares has been about 177,921 hectares.



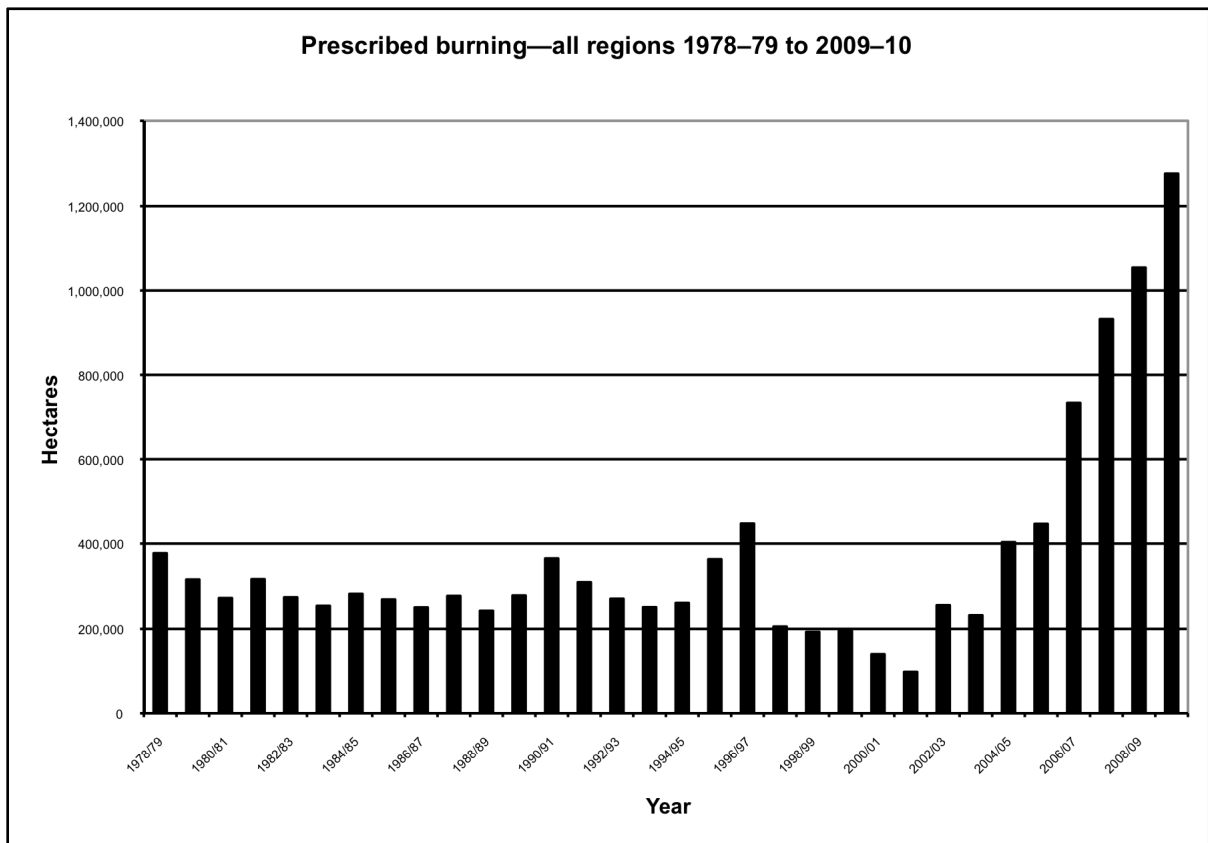
The chart below shows the year of last burn of the vegetation/fuel within all the prescribed burns conducted in the south-west regions in 2009-10. Approximately 82 per cent of the burns contained fuels that had not been previously burnt since 2000.



In addition to the burn programs achieved in the south-west regions, a total of about 1.06 million hectares of prescribed burning was undertaken by DEC in other regions. Many of these burns were open-edge burns and aerially ignited wind driven burns that provided the habitat diversity required to conserve biodiversity and protective buffers intended to limit the spread of bushfires. The burns were carried out on DEC-managed lands as well as on unallocated Crown lands and unmanaged reserves within these regions.

The combined total area of prescribed burning undertaken throughout the state was 1.27 million hectares

The application of prescribed fire by DEC has increased markedly since 2004 when the department began a proactive program of fire management over large areas of unallocated Crown lands. Significant progress has been made in the Pilbara, Kimberley and Goldfields regions in applying prescribed fire across the landscape to achieve biodiversity conservation outcomes and to minimise the potential extent of damaging bushfires. The chart below shows the area prescribed burnt in all DEC regions since 1978.



Details of the prescribed burn areas achieved are provided in the Appendix (pp11–16).

Fire preparedness on unallocated Crown lands

Since 1 July 2003, DEC had taken responsibility for the coordination and on-ground management of fire risk prevention and fire preparedness works on rural unallocated Crown land and unmanaged reserves. This Crown land consists of about 89 million hectares.

The table below shows the distance of firebreak access installed and maintained, the level of vegetation modification in strategic buffers, and the area of wind-driven open edge prescribed burning and large-scale block ignition using aircraft. The

achievements in block burning in the Kimberley, Pilbara and Goldfields regions continued due to increased fire management funding in these regions, and the use of planned fire for developing landscape-scale mosaics for mitigating large damaging summer bushfires, protecting biodiversity values and achieving designated nature conservation outcomes. Some of these achievements included engagement with Indigenous communities.

Fire prevention works completed on unallocated Crown land and unmanaged reserves in 2009–10

DEC region	Firebreak access and maintenance (km)			Scrub rolling/slashing and vegetation modification (km)			Open-edge burning (km)			Block burning (ha)		
	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
Kimberley	30	42	50	0	0	0	300	370	400	663,254	340,000	305,811
Pilbara	-	-	0	-	-	0	0	0	0	3 areas burnt	37,340	67,412
Goldfields	314	205	245	43	72	0	10	72	41	495,090	1,220,252	450,000
Midwest	264	756	771	0	0	0	36	28	15	480	655	3662
Wheatbelt	544	325	250	0	60	0	8	15	21	0	0	0
South West	4	0	10	6	6	0	0	0	0	12	0	424
Warren	37	18	21	0	0	0	0	0	0	389	0	72
South Coast	53	261	252	19	108	187	158	90	10	267	953	809
Swan	-	-	0	-	-	0	-	-	0	-	-	979
TOTAL	1,246	1,607	1,599	68	246	187	512	575	487	1,159,492	1,561,860	829,169

Aerial fire suppression operations

The department contracted eight fixed-wing water bombers during the peak summer months of the 2009–10 fire season to provide rapid aerial suppression capability in the South Coast, Midwest, Wheatbelt and south-west forest regions, which include the Perth outer metropolitan area. Two Dromader aircraft were based at Manjimup, two Air Tractor 602 aircraft were based at Albany, two Air Tractor 802 aircraft were based at Bunbury, with another two Air Tractor 802 aircraft based at Perth. These aircraft provided an aerial rapid-attack capability to assist ground crews in the initial attack on bushfires. In addition to the fixed-wing aircraft, four light helicopters (helitankers) and a Type 1 Helicopter (Sikorsky) were contracted by FESA to provide coverage for the Perth urban and nearby rural areas. FESA also trialled a Type 1 helicopter (Sirkorsky) based at Busselton.

The water bombers and helitankers were used successfully in combination on several bushfires that threatened residential areas in the outer metropolitan area of Perth and numerous bushfires across the South Coast, Midwest, Wheatbelt, and south-west forest regions

Water bombers contracted by DEC had staggered commencement dates, beginning with the Bunbury water bombers on 25 November 2009, and all bases ceased operations on 7 April 2010.

Water bombers attended 122 fires from Kalbarri to Esperance. These aircraft dropped 1,121 loads, flew a total of 711 operational hours and dropped a total of 3.8 million litres of product. This compares with 992 loads and 575 hours in 2008–09.

Fire detection

DEC provided an effective fire detection system in the high fire risk zones of the south-west forest regions, based on a combination of single-engine fire detection aircraft and fixed lookout towers. The department's fleet of nine American Champion Scout fire detection aircraft flew 4,128 hours for aerial surveillance within pre-determined circuits in the south-west forest regions at schedules that varied according to the fire danger levels and fire activity. The aircraft also flew 293 hours in support of aerial suppression operations. The aircraft were flown by two permanent senior pilots and 12 seasonal casual pilots.

Fire training and development

Fire Management Services Branch staff conducted 36 formal fire training courses involving 224 participants. In addition, district and regional staff delivered 26 formal fire training programs to 215 participants.

The formal courses conducted in 2009–10 included Australasian inter-service incident management system (AIIMS) awareness; prescribed burning; fire line construction using machines; basic wildfire awareness; fire fighting level 1; fire fighting level 2; wildfire suppression 3; structural fire fighting; basic fire fighter and Western Australian Emergency Radio Network (WAERN) radio training. Advanced incident leadership programs were also delivered in Western Australia and Victoria to

senior incident management personnel from fire and land management agencies from across Australia.

Aviation Section personnel provided training for 125 aerial operations personnel including fire detection pilots; air attack supervisors; air observers, helitorch operators, incendiary operations supervisors and incendiary machine operators. In addition, 21 courses were provided for 252 participants to support aerial water bombing operations. The majority of these participants were from volunteer bushfire brigades and local state Emergency Service Units from the south-west.

Course participants were predominantly from DEC, with additional participants drawn from the Forest Products Commission, FESA, local government authorities, and the department's campground host volunteers and bush ranger cadets. A small number of Aboriginal rangers and ranger coordinators from the Kimberley Land Council were trained for involvement in incendiary operations and provided with opportunities for operational experience.

The development and promotion of common fire training programs and course materials continued between DEC and FESA, and with other agencies in Australia and New Zealand. Of particular note is the development of a course in major incident management jointly between DEC, FESA and WA Police.

Fire ecology education programs

The fire education program continued in 2009–10 through Fire Management Services Branch and DEC's Eco-Education section. The program educates students and teachers at primary and secondary school levels about inter-relationships between fire, flora and fauna, and the role of fire and science in conserving biodiversity and protecting communities and natural values.

During the year a total of 10,913 students, teachers and parents participated in fire related Eco-Education programs held at Perth Hills National Park Centre, Henderson Centre, Wellington Discovery Forest and Margaret River Eco-Discovery Centre.

A total of 591 students from 25 different metropolitan schools attended DEC's 'Fire—a force of life' program at the Perth Hills National Park Centre and Henderson Centre.

A total of 99 students attended DEC's 'Fire—a force of life' program at the regional Eco-Education Centres and 316 participated in the fire-related programs of 'Geography', 'Biology' and 'Our South West'.

The department conducted a DEC bush rangers fire awareness course at Dwellingup which included both theoretical fire course work and field exercises involving the conduct of a small prescribed burn in nearby forest.

Eco-Education fire resources were developed in both printed and electronic forms for use in the classroom. These are now available for teachers from the DEC website. Fire information also has been incorporated into new Bush Rangers WA manuals.

Updates were made to the 'Fire—a force of life' program in order to meet with the curriculum requirements of the new geography course. The course covers fire as a natural hazard, so more information on hazard reduction and reasons for prescribed burning as well as fire behaviour have been added into the program.

The DEC website was updated to provide easy access for students and the general public to information on a wide range of fire management and fire ecology topics, including current prescribed burns.

Radio communications and fire information technology services

The department owns an extensive radio communications network that provides reliable and flexible communications for fire and other emergency operations as well as normal day-to-day administration. The network includes about 1,300 mobile and portable radios, 125 office radios, and over 75 repeaters and towers, and 12 portable broadband satellite terminals.

DEC is a major stakeholder in the WAERN, and the department's Radio Communications section has continued to commission new radio infrastructure such as towers and repeaters across all regions of the state. The WAERN program will result in the upgrade of the department's current mid band VHF radio network to high band VHF over the next year. This will provide better radio communications interoperability with FESA, volunteer bushfire brigades, local authorities and other agencies during emergency incidents and normal day-to-day operations.

Three additional radio repeater sites have been established in the Kimberley Region at Silent Grove, Kununurra and Broome that complement the existing seven repeater facilities already installed in the Kimberley Region.

Federal government funding was sought for the implementation of a 'radio over internet protocol' (ROIP), which provides radio repeater access from any internet provider connection. This project is in the final stages of implementation.

The Radio Communications section worked closely with WA Police on new infrastructure upgrades across the state and testing of new digital radio technology.

DEC's corporate information management and decision support system for fire management (Fire Support System) was re-engineered to improve data access, management and interchange between DEC and its stakeholders. This work will also facilitate greater functionality of the master burn planning, bushfire threat analysis and resource management systems.

The department has completed the installation of a resource tracking system that provides managers with immediate access to information on the locations and activity of fire management resources such as aircraft, tankers, machinery and transport vehicles that are used at incidents throughout the state. The system is also being utilised to track other DEC resources such as boats. The application currently maps the location of 258 operational resources consisting of 158 fixed installs (21 aircraft, three boats, 107 fire trucks, 27 heavy earth moving machines), and 100 portable tracking units that can be readily fitted to other vehicles such as contract machines,

WA Police or FESA vehicles. Fifty additional devices will be installed into selected light fleet across the state. Significant effort has been invested to increase the system's robustness and reliability.

DEC has entered into a research partnership with Landgate's Satellite Remote Sensing Services to improve automatic detection and mapping in a digital format of fire occurrence using satellite remote sensing technology. This arrangement will provide fire history information across the state that complements the department's extensive fire records for the south-west forest regions.

DEC has worked closely with the Department of Commerce and other government agencies and non-government organisations to acquire federal government funds to improve telecommunications and associated support facilities for emergency management throughout rural and remote areas of Western Australia. This funding has assisted DEC to establish and enhance its statewide radio communications and decision support systems such as ROIP; mobile/portable radio, satellite and information technology (IT); and remote sensor and resource tracking systems. Further work has been done to improve the communications and IT infrastructure in the incident communications vehicle and communication buses.

Fire Management Services Branch has investigated alternative technologies to deliver and monitor prescribed burning programs. A workshop with an interstate expert on unmanned aerial vehicles (UAV) was conducted with a view to exploring the potential for these vehicles as a platform to mount incendiary and remote sensing equipment. This UAV technology has the potential to greatly increase the effectiveness and efficiency of fire management, particularly in remote parts of the state.

The potential for airborne scanners to capture prescribed burn outcomes, and to augment satellite remote sensing technologies, was also investigated. A project has been initiated to acquire airborne multispectral and infra-red scanning technology capable of being mounted on one of the department's American Champion Scout aircraft that will enable the acquisition and processing of remote sensing data on the majority of prescribed burns, and provide a fine-scale definition of the burnt/unburnt mosaic. Information of this type is a foundation to ongoing ecological fire management.

FIRE MANAGEMENT PERFORMANCE INDICATORS SOUTH-WEST REGIONS 2009-10

Key effectiveness indicators (1 and 2)

1. Prescribed burning in south-west forest regions

Region	10 year rolling average (ha)	Actual 2009/10	Difference (ha)	%
SWAN	44,291	73,902	29,612	67%
SOUTH WEST	46,881	56,174	9,293	20%
WARREN	56,346	81,941	25,595	45%
Total	147,518	212,017	64,500	44%

These statistics compare the 2009–10 prescribed burning achievements with the 10-year rolling average for prescribed burning.

The prescribed burning achieved within the south-west forest regions was higher than the 10-year rolling average.

The total area achieved (212,017 hectares) was above the nominal annual program for the south-west regions of 200,000 hectares largely due to dry autumn 2010 conditions in the Swan Region.

2. Fire suppression in south-west forest regions

Region	Priority 1 & 2 (%)			
	Standard	2007–08	2008–09	2009–10
SWAN	95	97	97	100
SOUTH WEST	95	100	93	100
WARREN	95	100	91	67
	DEC average (1 Year)			89
	DEC average (5 Years)			92

*Only includes records where DEC was first attack agency

The fire suppression efficiency indicator is represented by the percentage of all forest bushfires burning under 95 percentile weather conditions, that are attacked with effective DEC suppression forces before these fires exceed five hectares in Priority 1 and Priority 2 areas. These priority areas include high values that may be vulnerable to bushfires or inappropriate fire regimes. The percentage standard to be exceeded is 95 per cent of all forest fires requiring suppression by direct attack. The 95 percentile weather conditions include the days when forest fire danger is below 'Very High' as calculated in the department's *Forest Fire Behaviour Tables* (1998).

APPENDIX –TABULATED FIRE MANAGEMENT DATA

Type of prescribed burns for all DEC regions 2007–08 to 2009–10			
	2007–08	2008–09	2009–10
Indigenous vegetation—hand burning (ha)			
State forest	2,434	4,759	5,227
National parks	8,062	4,483	22,966
Nature reserves	3,218	4,092	2,092
Other Crown land and private property *	13,880	3,549	6,724
Total	27,594	16,883	37,009
Indigenous vegetation—aerial burning (ha)			
State forest	38,894	23,630	76,509
National parks	401,143	504,309	377,138
Nature reserves	239,775	208,222	66,218
Other Crown land and private property *	199,854	253,868	690,055
Total	879,666	990,029	1,209,920
Indigenous vegetation—silviculture burning (ha)			
- Jarrah dominant forests	17,527	34,007	16,097
- Karri, karri/marri, marri forests	505	543	466
- Other forest	4	426	883
Total	18,036	34,976	17,446
Softwood plantation—burning (ha)			
- Strategic protection	5,199	11,043	3,806
- Clearing burns	1,688	676	367
- Logging debris removal, silviculture	778	39	7,632
Total	7,665	11,758	11,805
Grand total	932,961	1,053,646	1,276,180
Includes data from 12/6/2009–15/6/2010			
For data specific to south-west forest regions see pp 15–16.			
* Includes other Crown land, other DEC reserves, and private property			

Area of prescribed burns for all DEC regions 2007–08 to 2009–10				
		2007–08	2008–09	2009–10
South-west forest regions				
Swan	Area (ha)	27,335	33,482	73,902
	Number	52	39	65
South West	Area (ha)	53,152	56,233	56,174
	Number	51	36	52
Warren	Area (ha)	63,194	62,103	81,941
	Number	51	64	61
Sub Total	Area (ha)	143,681	151,818	212,017
	Number	154	139	178
Other regions				
Kimberley	Area (ha)	533,454	717,794	725,903
	Number	8	6	10
Pilbara	Area (ha)	136,230	62,211	245,749
	Number	8	12	14
Midwest	Area (ha)	942	4,398	6,555
	Number	14	24	24
Goldfields	Area (ha)	115,232	116,224	80,872
	Number	3	16	9
Wheatbelt	Area (ha)	466	22	1,212
	Number	7	1	13
South Coast	Area (ha)	2,956	1,179	3,872
	Number	20	14	29
Subtotal	Area (ha)	789,280	901,828	1,064,163
	Number	60	73	99
Grand total (all regions)	Area (ha)	932,961	1,053,646	1,276,180
	Number	214	212	277
Includes data from 12/6/2009–15/6/2010				
Please note this table counts carryover burns (same burn ID done over multiple seasons) as different records, e.g. a burn started in spring and finished in autumn is counted as two burns.				

Bushfires in all regions 2007–08 to 2009–10						
Number and area by land category						
Number and per cent by cause						
ALL REGIONS	Number **			Area Burnt (ha) *		
	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
State forest						
native hardwood	76	150	118	5,426	4,663	14,357
softwood plantation	64	138	94	325	3,191	136
National parks	73	112	99	100,425	454,481	450,384
Nature reserves	41	35	56	691,258	321,140	961,010
Other DEC reserves	50	57	48	314,908	497,419	202,605
Other Crown lands	13	19	33	83,721	243,598	136,311
Private property	87	100	104	5,139	51,364	23,132
Unallocated Crown land	40	37	51	224,603	167,134	814,831
Total	444	648	603	1,425,806	1,742,991	2,602,767
CAUSES						
ALL REGIONS	Number **			Per cent		
	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
Deliberately/illegally lit	217	371	216	49	57	36
Escapes—DEC burns	6	9	11	1	1	2
Escapes—non DEC burning	26	31	35	6	5	6
Accidental—timber industry	3	6	2	1	1	0
Accidental—other industries	20	24	37	5	4	6
Accidental—recreationists	21	35	32	5	5	5
Lightning	82	76	166	18	12	27
Unknown	51	57	27	11	9	13
Other causes	18	39	77	4	6	5
Total	444	648	603	100	100	100
Includes data from 12/6/2009–15/6/2010						
* Area (ha) burnt by bushfires in the tenure type						
** Number of bushfires that started in each tenure type and fire cause						

Area and number of bushfires attended and monitored by DEC for all regions 2009–10											
	Region		State forest native hardwood	State forest softwood plantation	National parks	Nature reserves	Other DEC reserves	Other Crown lands	Private property	Unallocated Crown land	Total
South-west forest regions						r					
	Swan	Area (ha) *	832	132	1,209	261	149	12	3,812	3,156	9,564
		Number **	64	83	23	11	13	10	44	6	254
	South West	Area (ha) *	11,711	3	197	79	335	19	349	13	12,706
		Number **	45	9	14	2	13	2	21	6	112
	Warren	Area (ha) *	1,814	0	22,967	129	17	0	159	25	25,111
		Number **	9	1	10	3	2	1	9	2	37
	Sub Total	Area (ha) *	14,357	136	24,373	470	500	31	4,320	3,194	47,380
		Number **	118	93	47	16	28	13	74	14	403
Other regions											
	Kimberley	Area (ha) *	0	0	377,813	655,929	188,207	48,983	0	411,387	1,682,318
		Number **	0	0	9	7	4	2	0	8	30
	Pilbara	Area (ha) *	0	0	44,127	0	12,643	20,621	151	39,154	116,696
		Number **	0	0	16	0	5	4	1	2	28
	Midwest	Area (ha) *	0	0	3,144	18,523	0	45,630	16,506	22,761	106,564
		Number **	0	0	11	3		10	13	3	40
	Goldfields	Area (ha) *	0	0	75	35,928	211	20,000	0	174,278	230,491
		Number **	0	0	1	11	1	1	0	5	19
	Wheatbelt	Area (ha) *	0	0	0	298	34	1,044	766	79	2,222
		Number **	0	0	0	5	3	1	3	4	16
	South Coast	Area (ha) *	0	0	853	249,863	1,010	2	1,388	163,979	417,096
		Number **	0	1	15	14	7	2	13	15	67
	Subtotal	Area (ha) *	0	0	426,012	960,541	202,105	136,280	18,812	811,638	2,555,387
		Number **	0	1	52	40	20	20	30	37	200
	Grand total (all regions)	Area (ha) *	14,357	136	450,384	961,010	202,605	136,311	23,132	814,831	2,602,767
		Number **	118	94	99	56	48	33	104	51	603
Includes data from 12/6/2009–15/6/2010											
* Area (ha) burnt by bushfires in the tenure type											
** Number of bushfires originating in the tenure type											

Area prescribed-burnt within south-west forest regions for 2009–10						
Dominant purpose	Region	Area (hectares)				Year of last fire *
		Winter	Spring	Summer	Autumn	
Community / strategic protection	Swan	6,071	22,943	-	22,459	1971–2005
	South West	-	10,604	-	19,439	1962–2009
	Warren	-	42,589	-	11,365	1978–2009
Biodiversity conservation	Swan	-	-	-	-	-
	South West	-	5,190	-	2,417	1984–2005
	Warren	-	1,037	-	23,795	1998–2007
Hardwood silviculture	Swan	-	718	-	1,941	1992–1999
	South West	-	10,040	-	1,820	1983–2003
	Warren	-	530	-	1,529	1981–2005
Plantation silviculture / protection	Swan	6,338	-	-	1,902	1980–2002
	South West	-	610	-	2,955	1974–2000
	Warren	-	-	-	-	
Tourism and recreation / protection	Swan	103	6,291	-	5,136	1979–2006
	South West	-	2,717	-	382	1986–1997
	Warren	-	1,096	-	-	1999
Grand total by season (ha)		12,512	104,365	-	95,140	
Seasonal %		6	49	-	45	
Grand total (ha)		212,017				
Includes data from 12/6/2009–15/6/2010						
* Range of vegetation / fuel ages as at July 2009						

**Number of prescribed burns conducted within
south-west forest regions in each season for various purposes in 2009–10**

Dominant Purpose	Region	Winter		Spring		Summer		Autumn		Total number of burns	No. of escapes
		Aerial	Hand	Aerial	Hand	Aerial	Hand	Aerial	Hand		
Community / strategic protection	Swan	3	-	12	6	-	-	7	5	33	1
	South West	-	-	4	8	-	-	6	4	22	2
	Warren	-	-	13	4	-	-	3	16	36	5
Biodiversity conservation	Swan	-	-	-	-	-	-	-	-	-	-
	South West	-	-	1	-	-	-	1	2	4	-
	Warren	-	-	1	-	-	-	2	-	3	-
Hardwood silviculture	Swan	-	-	1	-	-	-	1	-	2	-
	South West	-	-	5	1	-	-	2	1	9	1
	Warren	-	-	1	4	-	-	1	15	21	1
Plantation silviculture / protection	Swan	1	7	-	-	-	-	-	7	15	-
	South West	-	-	1	1	-	-	2	7	11	-
	Warren	-	-	-	-	-	-	-	-	-	-
Tourism and recreation / protection	Swan	-	3	3	4	-	-	2	3	15	-
	South West	-	-	-	4	-	-	1	1	6	-
	Warren	-	-	-	1	-	-	-	-	1	-
	Total	4	10	42	33	-	-	28	61	178	10

Includes data from 12/6/2009–15/6/2010

Please note this table counts carryover burns (same burn ID done over multiple seasons) as different records, e.g.a burn started in spring and finished in autumn is counted as two burns.