THE ORIGIN AND DEVELOPMENT

of fires in the

DENMARK DISTRICT

during

1960 - 1961

by: A.G. McARTHUR.

C O N T E N T S

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THE DENMARK FIRES

(1) INTRODUCTION.

The general heading of "Denmark Fires" has been used in this report to describe various fires which burnt in and adjacent to the Denmark Shire during the 1960/61 fire season.

Two separate fire periods occurred in the district and three fires are described. The first and major fire started in the Albany Shire in mid-December and burnt westwards into the Denmark and Plantagenet (Mt. Barker) Shires during early January and was finally controlled by the end of January.

The second series of fires commenced in the first week of March and were the result of escapes from settlers' burning-off operations.

The total area burnt by the Albany fire was 160,000 acres of which 49,150 acres burnt in the Albany Shire; 36,100 acres in the Plantagenet Shire and 74,750 acres in the Denmark Shire.

The other two major fires which burnt during the first and second weeks in March covered a total area of 27,650 acres. The two fires joined as one after several days and it was not possible to distinguish between the two areas.

The area through which these fires burnt is largely undeveloped Crown land and there appears to be little organised fire protection measures in the area. Rural bush fire brigades were prepared to disregard the fires whilst they were burning in Crown land and only made a determined effort at control when they threatened developed land. The season conditions experienced this year in the south coastal areas played a major part in the development and spread of these fires. Spring and Summer rainfall was markedly deficient as in most areas of the South-West and forest areas were naturally much drier than usual. This allowed the fires to spread steadily for many weeks and make major runs during periods of very high to extreme fire danger which occurred during January and early March.

In a more normal year, rainy periods during the Summer months would have probably extinguished these fires.

However there is little doubt that the Denmark, western Albany and southern Plantagenet Shires have a very bad fire record, extending over many years, and it can be said that there is virtually no fire control practised over the large areas of undeveloped Crown land in these districts. In fact, the fire control organisation even in the settled areas shows a marked lack of efficiency and drive. It is unfortunate when one realises that each of the fires which occurred this season could have been easily controlled by a very small fire-fighting force if they had been attacked within one or two days of commencement.

The origin of the Albany fire was investigated by the Albany Police and information given in this report as to the place of origin and cause of this fire has largely been obtained from Police sources.

The areas burnt by the fires in this region are shown on the attached plan and a brief description of each fire is given.

(2) METEOROLOGICAL CONDITIONS

(a) Seasonal Rainfall.

The seasonal rainfall was even more deficient in the south coastal area than elsewhere in the South-West, and monthly rainfall figures for Denmark are given in Table I.

TABLE I. Monthly Rainfall received at Denmark 1960/61

Month	Rainfall Average (points)	Actual	Cumulative Rainfall Deficiency (points)
1960			
June	675	343	332
July	725	870	187
August	648	337	498
September	504	226	736
October	432	136	1032
November	182	69	1145
December	146	102	1189
1961			
January	127	155	1161
February	133	129	1165
March	219	169	1215

The January rainfall was mainly recorded on the 26th of the month and from the 17th December until 26th January only 29 points of rain were recorded for the 40-day period. The Albany fire burnt throughout this entire period when the largest individual fall was 8 points.

(b) Daily Weather Conditions.

(i) Albany Fire.

As the Albany fire burnt over such an extended period, there is little significance in giving daily weather conditions for the whole period. However, the days on which the fire made some progress are given in Table II and it was on these days that the fires in the area did most damage.

TABLE II. Weather Conditions recorded at Albany 1961 during the Course of the Albany Fire.

Date	Time	T.	R.H.	Wind Dir.	Wind Vel. mph.	Remarks
18.12.60	1200	70	70	E	10	Albany fire commenced
	1500	71	66	E	15	
19.12.60	1200	69	65	S	5	
	1500	71	62	SW	5	
20.12.60	1200	70	57	SE	5	
	1500	70	53	SE	10	
21.12.60	1200	70	57	SE	10	Probably making slow progress to the west and north-west under the stronger winds
	1500	70	57	ESE	10	
22.12.60	1200	70	62	ESE	20	
	1500	71	62	E	20	
3. 1.61	1200	72	54	SE	15	Fire crossed Hay River during this period and continued to burn westwards towards Denmark-Mt. Barker Road
	1500	72	54	SE	20	
4. 1.61	1200	78	61	SE	10	
	1500	79	54	SE	15	
5. 1.61	1200	79	66	SSW	5	
	1500	79	66	SSW	5	
15. 1.61	1200	75	72	E	15	Fire crossed Denmark-Mt. Barker Road about this period and continued to burn towards Mt. Lindsay.
	1500	74	68	E	10	
16. 1.61	1200	75	56	S	2	
	1500	73	63	S	10	
17.1. 61	1200	78	46	E	10	Fire broke northwards into settled areas around Denbarker.
	1500	74	68	ESE	15	
18. 1.61	1200	79	66	SE	10	
	1500	82	59	E	15	
19. 1.61	1200	89	44	SE	5	The 19th January was the only day when high fire danger was experienced in the period.
	1500	91	31	Calm		
20. 1.61	1200	75	77	SSE	5	
	1500	74	86	SE	15	

The mild conditions which are experienced in this south coastal region are quite remarkable when one considers that the west coast and inland areas were experiencing extreme heatwave conditions and the Dwellingup fires were assuming major proportions. It must be recognised, however, that the data quoted in Table II is typical only of the seaboard. Meteorological conditions away from the coast would be much more severe, especially in the Denbarker area.

(ii) March Fire Period.

The weather conditions recorded at Albany on the three days on which these fires made most progress are shown in Table III.

TABLE III. Weather Conditions recorded at Albany during the March, 1961, fire period.

Date	Time	T.	R.H.	Wind Dir.	Wind Vel. mph	Remarks.
1.3.61	1200	75	72	SE	20	Fires escaped and burnt slowly.
	1500	74	76	SE	20	
2.3.61	1200	77	61	ESE	15	Fires crossed Kent river and continued to burn slowly
	1500	75	77	SE	20	
3.3.61	1200	98	24	NNW	10	Fires made rapid progress
	1500	88	40	SE	10	

The fire danger recorded on 3.3.61 was the highest on any day during the 1960/61 season and reached a Very High fire danger rating.

(3) DESCRIPTION OF INDIVIDUAL FIRES.

(A) ALBANY - DENMARK FIRE

(i) POINT OF ORIGIN.

The fire originated on Hay River location 6630 or 6631 near the head of theSleeman River and some 8 miles east north-east of Young's Siding and approximately 5 miles south-west of Redmond.

(ii) CAUSE.

No direct cause of this fire can be ascertained. The land on which the fire started was thrown open for settlement early in 1960 but the owners or purchasers of the property have now deserted the block. Therefore there does not appear to be any motive for any person wishing to burn these blocks.

(iii) DEVELOPMENT OF THE FIRE.

The fire was first reported on 19th December, 1960. The Albany Shire requested information from the fire control officer in the area. It is most likely that the fire started on the previous day.

The fire control officer inspected the fire and took no action regarding its suppression. He considered the fire to be of little consequence as it was burning in bush country and there were no farms in the vicinity.

Local bush fire brigades apparently took no action on the fire for over two weeks. Early in January local brigades in the Young's Siding area controlled the southern face when the fire showed signs of burning into the settled areas.

Around the same time, strong easterly winds drove the fire westward and it jumped the Hay River and moved across vacant Crown land towards the Mt. Barker-Denmark Road. Much of this country had been recently logged and the bush was fairly dirty.

Efforts were made to halt the fire on the Denmark-Mount Barker Road but it crossed this road around the 15th or 16th January and spread towards Mt. Lindsay.

The Denmark Shire moved men and equipment into the area and attempted to halt the fire along a track known as Stans Road. A massive backburning operation was planned along this track with the co-operation of the Mt. Barker brigades. However, a southerly to south-easterly wind had driven the fire into settled areas to the north on a three mile front. These brigades were then fully committed to controlling the entire northern edge of the fire. The Denmark Shire gang attempted to backburn along Stans Road but the fire crossed the road before the burn could be completed. They then fell back to the south of Mt. Lindsay and prevented the fire reaching settled areas to the south by backburning from various roads and tracks.

Heatwave conditions were now prevailing and the fire drove steadily westwards and was finally controlled in the vicinity of the Clear Hills around 26th January when heavy rain fell in the area.

(iv) DAMAGE.

Except for 2000-3000 acres of pasture land burnt in the north, the fire was entirely confined to forested Crown lands and capital damage was slight.

However, a considerable area of the Denmark River Catchment area was burnt over and, although this catchment is at present undeveloped for water supply purposes, continued fires of this nature could have serious long-term effects on the water production value of the catchment.

An assessment of the damage resulting from this fire is as follows: -

		£
(a)	Loss of pasture - 3000 acres @ £1 per acre	3,000
(b)	Loss of increment and damage to regeneration on 25,000 acres commercial forest @ 10/- per acre	12,500
(c)	Damage to 132,000 acres of low quality forest @ 1/- per acre	6,600
(d)	Estimated cost of suppression	2,000
	TOTAL ..	£24,100

(B) KENT RIVER - OWINGUP FIRE.

The first of these fires was reported on Wednesday, 1st March, 1961, and had escaped the previous evening from Plantagenet location 2176, where bulldozed heaps were being burnt without permit. During subsequent days at least one other burning-off fire escaped from the vicinity of Owingup Siding, and it is probable there were other fires towards the coast which eventually all united into the one fire.

On Wednesday, 1st March, the fire moved slowly in a south-westerly direction. Apparently no suppression action was taken.

On Thursday, 2nd March, a reconnaissance of the fire around 9 a.m. revealed it to be still burning on location 2176 and moving slowly towards the Kent River. By 5 p.m. it was evident from lookout tower bearings that the fire had crossed Kent River and was moving westwards. A reconnaissance at this time showed the fire to be burning in 3-4 year old fuel in timbered country. There did not appear to be anyone engaged on fire suppression action.

The Forests Department became very concerned that the fire could move westwards into State Forest areas and requested the assistance of the Denmark Shire in controlling the fire. The chief fire control officer called for volunteers and about 40 men responded. A backburn was put in that night from the point of origin to Quarram Inlet and the western spread of the fire halted.

On Friday, 3rd March, the western section of the backburn was patrolled and mopped up by Forests Department gangs and held. The section east of Kent River escaped in the late afternoon, when the wind changed to a south-westerly.

Previously, a second burning-off fire escaped in the vicinity of Owingup Siding and had spread rapidly in a south south-easterly direction towards William Bay. Settlers and Shire employees concentrated on controlling the eastern edge of this fire.

On Saturday, 4th March, the fire was still burning slowly east and north of Kent River and was uncontrolled.

From Sunday, 5th March to Tuesday, 7th March, efforts were made to control the northern edge of the fire by the use of heavy bulldozer equipment.

At 8 a.m. on Wednesday, 8th March, rain commenced to fall and control of the fire was achieved.

Mopping-up and patrol of the northern perimeter by Forests Department personnel and local brigade members continued for several days.

The total area burnt by the several fires was approximately 27,650 acres, and it is estimated that damage resulting from the fire was approximately £5,000.

(4) FIRE CONTROL ORGANISATION IN THE REGION.

It appears that brigades and farmers in the district are only prepared to fight fires when cleared pasture land is endangered. Officers and men of the Forests Department and the Shire are left to organise the main firefighting efforts on timbered and partly developed private holdings.

There appears to be an urgent need for a co-ordination of effort between local landholders, the Shire and the Forests Department so that fires occurring in the area can be tackled quickly and suppressed whilst within their early stages.

A very large proportion of the region is comprised of vacant Crown lands over which no authority assumes responsibility for fire control measures. Even in alienated areas much of the country is uncleared, due to it being held for investment purposes or because the owner has insufficient capital for development.

Such unoccupied blocks are a constant source of fire hazard, and protective burning appears necessary over such areas.

The rateable value of the land in this area is low, and the Shire Council appears to have insufficient revenue to allocate any large sum for fire control measures. If fire protection of this area is to improve, it would appear necessary for the Government to give some consideration to the establishment of a special fire control organisation with adequate finance to undertake protective burning, provide access and form a small firefighting force which will attack fires as they occur. The present system of waiting until the fires reach large proportions and then endeavouring to control excessively large fire perimeters is, in the long run, a most uneconomic and dangerous method of fire fighting.

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