1984

Damage report of the west coastal wildfire (Jan 16-21, 1984) and its effects on the Western Australian beekeeping industry

R.C. Burking
A.C. Kessell

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"DAMAGE REPORT OF THE WEST COASTAL WILDFIRE (JAN 16 - 21, 1984) AND ITS EFFECTS ON THE WESTERN AUSTRALIAN BEEKEEPING INDUSTRY"

Compiled by:

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&
A.C. Kessell (Senior Apiculturist)
April, 1984
CONTENTS

1. Introduction.


3. The Wildfire - Area - Progress - Damage.


5. The Effects on the Beekeeping Industry.


7. Carnamah Public Meeting.

8. Acknowledgements.

APPENDICES

1. Photographic Record of Wildfire Selected Locations.


3. Map of Wildfire Area. (Back Cover)
1. **INTRODUCTION**

During the period January 16-21, 1984, an extensive wildfire devastated large areas of coastal flora, important to the Beekeeping Industry, on the Beekeepers' Reserve 24496 and areas of adjacent vacant Crown land.

It was indeed fortunate that no loss of life occurred, however, at one stage the coastal town of Leeman was threatened, but a change of wind direction diverted the wildfire to heathland to the east of the area.

The extent of this fire ranged from North Head in the South to the Mt. Adams Road in the North crossing the Brand Highway to the East.

The area of the fire was calculated by Landsat Imagery (recorded on 23/1/84) and the details are as follows:

- General area of wildfire (including uncontrolled or burnback situation) - 117,000 ha
- Total area damaged by fire - 98,500 ha
- Fire damage to the Beekeepers' Reserve 24496 - Total Reserve area burned which has been calculated at 89%.

The effect on the Beekeeping industry is documented within this report, but as a summary a total of 143 apiary sites, 113 within the Beekeepers' Reserve have been devastated affecting some 28 Beekeepers.

2. **REPORT FORMAT**

This report is the result of a request by the Beekeepers' Section of the Primary Industries Association for the Department of Agriculture to undertake a survey of the area, document the damage and report problems that face the Beekeeping Industry to the Hon. Minister for Agriculture, Mr H.D. Evans.

An extensive ground survey was undertaken during February by officers of the Apiculture Section, following a study of the Landsat Imagery. In addition to this, interviews and discussions were held with various people who were associated with the wildfire including:

- Bushfires Board of W.A., Beekeepers associated with the Primary Industries Association or the Honey Industries Association, Farmers and Graziers who acted as firefighters and from notes taken at a meeting of interested people held in the Irwin Shire Council Offices on the 13 February 1984.

As one would expect, a number of conflicting views, opinions and comments were expressed by a wide variety of people. Whilst it is not possible to substantiate many of these statements, it has been considered that all the points should be documented and listed for discussion at future meetings when formulating policy for Wildfire Control Management. These comments are listed and discussed in Section 4.
3. **THE WILDFIRE - AREA - PROGRESS - DAMAGE**

It has been established that the wildfire started adjacent to a number of "squatters" shacks near North Head on C.G. 8836 either from a barbeque or camp fire. Some control burning may have been undertaken in the area as no damage to buildings was observed.

From this starting point location it gradually worked its way North towards the Coorow-Green Head Road where strong winds created a wildfire of large proportions.

3.1 **Fire Progress**

From information provided by the Bush Fires Board of W.A., the progress of the fire was documented on the attached map (see back cover).

A summary is provided in Table 1.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>16th</td>
<td>1600 hours</td>
<td>North Head - Sandy Point</td>
</tr>
<tr>
<td>17th</td>
<td>1330 &quot;</td>
<td>3km South of Green Head</td>
</tr>
<tr>
<td>18th</td>
<td>1100 &quot;</td>
<td>Green Head - Coorow Road</td>
</tr>
<tr>
<td>18th</td>
<td>1700 &quot;</td>
<td>Old Green Head Road</td>
</tr>
<tr>
<td>18th</td>
<td>1830 &quot;</td>
<td>Coolimba Road</td>
</tr>
<tr>
<td>18th</td>
<td>2400 &quot; est.</td>
<td>Illawong Beekeepers' Road</td>
</tr>
<tr>
<td>19th</td>
<td>1900 &quot;</td>
<td>Cliff Head Area</td>
</tr>
<tr>
<td>19th</td>
<td>2030 &quot;</td>
<td>Crossed Brand Highway</td>
</tr>
<tr>
<td>21st</td>
<td>1600 &quot;</td>
<td>Burn back Beekeepers' Road</td>
</tr>
<tr>
<td>21st</td>
<td>2000 &quot;</td>
<td>Burn back Mt. Adams Road</td>
</tr>
</tbody>
</table>

In discussion with fire fighters, it is difficult to ascertain when many areas were brought under control due to the number of units involved, however by the 22 January it was considered no longer a threat.

Wind direction at various times provided the biggest problem for fire fighters with the prevailing winds alternating from SW in the afternoon with NE winds in the late evening and morning periods.

Data has been obtained from the Bureau of Meteorology and is provided in Table 2.
Table 2: Wind Direction and Velocity During Fire Period
(Data supplied by Meteorological Bureau)
16-21 January, 1984

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Wind Direction</th>
<th>Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>16th</td>
<td>1600</td>
<td>S</td>
<td>20 kph</td>
</tr>
<tr>
<td>16th</td>
<td>2400</td>
<td>SE</td>
<td>10-15 kph</td>
</tr>
<tr>
<td>17th</td>
<td>0600</td>
<td>ESE</td>
<td>10 kph</td>
</tr>
<tr>
<td>17th</td>
<td>1200</td>
<td>E</td>
<td>10 kph</td>
</tr>
<tr>
<td>17th</td>
<td>1500</td>
<td>S</td>
<td>15 kph</td>
</tr>
<tr>
<td>17th</td>
<td>1800</td>
<td>SSW</td>
<td>30 kph</td>
</tr>
<tr>
<td>17th</td>
<td>2400</td>
<td>SSE</td>
<td>15 kph</td>
</tr>
<tr>
<td>18th</td>
<td>0900</td>
<td>E</td>
<td>15 kph</td>
</tr>
<tr>
<td>18th</td>
<td>1200</td>
<td>E</td>
<td>10 kph</td>
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<tr>
<td>18th</td>
<td>1500</td>
<td>SSW</td>
<td>15 kph</td>
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<tr>
<td>18th</td>
<td>1800</td>
<td>S</td>
<td>40 kph</td>
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<tr>
<td>18th</td>
<td>2400</td>
<td>SSE</td>
<td>10 kph</td>
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<td>19th</td>
<td>0300</td>
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<td>19th</td>
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<td>19th</td>
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<td>21st</td>
<td>1500</td>
<td>SSW</td>
<td>15 kph</td>
</tr>
<tr>
<td>21st</td>
<td>1800</td>
<td>SSW</td>
<td>15 kph</td>
</tr>
</tbody>
</table>

3.2 Area of Wildfire

As discussed in the introduction the total area directly associated with the fire, in either a burn, or a "burn back" situation has been calculated to be 117,000 ha. with a total burnt area of some 98,500 ha. ranging from North Head in the South to Mt. Adams Road in the North. Due to conflicting reports it is not possible to specify at what time it jumped the Brand Highway but from this point it travelled North-North West and was eventually brought under control by a burnback from Mt. Adams Road. The areas adjacent to Beekeepers' Road and the Brand Highway are a burn back situation. Some control burn back prevented the fire entering the fishing village at Cliff Head.

3.2 Damage

3.2.1 Vegetation

With the exception of an area south of the Coolimba Road East of Morgan's Track (Known to the Bushfires Board as the Beagle line) to the Stock Yard Gully National Park, and isolated pockets throughout the Reserve 24496, the majority of the vegetation has been burned. The intensity of the burn ranges
from a Stage 1, scorched leaves, to Stage 5 where total destruction has
occurred. Depending on the wind direction and velocity the damage to
vegetation varies considerably, however irrespective of the stage of fire
intensity, it is considered that very little survival will exist.
Regeneration in the majority of species will be in the form of regrowth from
ligno tubers or from seed. Extensive areas of either bare soil or bare rock
are evident in many locations however seed shed caused by the fire will ensure
regeneration of many species. The biggest concern is the damage to two major
honey producing species, Hakea trifurcata and Dryandra sessilis which are not
fire tolerant and regular burning by wildfires will eventually stop its
regrowth potential.

The affects of the fire on the Beekeeping industry are very severe. Such an
extensive area, essential for Beekeepers' in the spring has been lost. Full
documentation of these affects are provided in Section 5 of this report.

During the survey, it was observed that regeneration of some species had in
fact started. Eucalyptus ethyrcorys and Zamia palms were showing considerable
new growth, the rain received from the aftermath of Cyclone Bobby has assisted
with falls of 16mm Carnamah, 19mm Coorow, 47mm Dongara and 35mm Eneabba being
recorded up to 23 February.

3.2.2 Loss of Wildlife

As the main purpose of the survey was to record and document vegetation loss,
no intensive Fauna survey was undertaken. However some observations were made
in various locations and the comments recorded by Mr Burking (R.A.O.U.) are
listed for interest.

"In general, the bird life of the general area has been greatly affected.
Passerines with the exception of Australian Pippets are non existant. The
heathland birds, normally prolific in the area are gone understandably with
the loss of habitat. Odd groups of Pink and Grey Galahs were observed but in
comparison to flock sizes normally recorded were very few.

Macropods (Kangaroos and Wallabys) appear to be the worst affected by the
wildfire. Large numbers of carcasses were observed East of the Eneabba -
Dongara Railway line, Beekeepers' Road and adjacent to Carpenter's Track.

Observations showed that these animals had not been burned but appear to have
died from exhaustion or smoke inhalation.

Resulting from the deaths of many Kangaroos, many species of Raptons were
observed including Wedge-Tailed Eagle, Little Eagle, many species of smaller
Hawks together with 5 sightings of Peregrine Falcons.

Travelling along many tracks during the survey failed to provide information
of avifauna losses. No dead birds were observed, and it can be assumed that
these were able to escape the fire."

4. THE WILDFIRE AND ITS ASSOCIATED PROBLEMS

As discussed in Section 2 this report is based on various sources of
information and it is felt that comments as discussed by many people who were
concerned should be documented for discussion at future meetings to discuss
wildfire management.
During the survey conducted by the Apiculture Section it has been established that the fire started adjacent to squatters shacks in the locality of North Head (Jurien Bay) whilst it is impossible to substantiate the actual cause, it is interesting to record that the three squatters shacks suffered no damage and from the fire direction, it appears to have been lit in this area.

From information received, it appears that the fire during the period 16-17 January did not represent a problem and that it was "contained" within the area of the western coastline, Cockleshell Gully Road to the East and the Green Head Coorow Road to the North. However at 1100 hours on the 18th it jumped the Green Head - Coorow Road and the Bush Fires Board were advised and the system swung into action. In a period of 7.5 hours it had travelled North to the Coolimba Road at times fanned by 40 kph winds (see table 2). With this wind behind it the Coolimba Road offered little resistance as a fire break and once it crossed this, the lack of suitable access tracks and firebreaks provided little or nothing in terms of control by back burning.

It would appear that some form of control could have been established at the Green Head - Coorow Road in a back burn situation and similarly at the Coolimba Road. However no action was taken. At one stage Beekeepers had a large section of country under control between Morgans Track and the eastern boundary and safe from fire by Wednesday night 18th. However early on the 19th the fire came in behind them from the East and devastated the area saved the day before.

This was caused by a flare up South of the Green Head - Coorow Road which eventually jumped the road and started to burn the area which was previously saved. Due to the wind direction, it was decided to burnback from the Eastern firebreak with the agricultural land to avoid property damage.

4.1 Control Officer

The lack of an appointed Controller to make the decision to burn back at specific locations appears to have caused a large problem. Although by the 18th the Bush Fires Board were the co-ordinating body, a number of decisions that should have been made were in fact not and the fire proceeded N-NE uncontrolled.

4.2 Radio Communications

The lack of a common radio frequency during the fire contributed to the co-ordinating of fire fighters. A range of radio with frequencies ranging from HF through VHF to UHF created problems. Communication with fire fighters in various locations at times was impossible, and in many cases firefighting groups in many locations, may have been better used.

4.3 Area Maps

It has been established that the existing maps as used by the Bush Fires Board and Bush Fire Brigades are outdated and provide little information of tracks and seismic lines North of the Coolimba Road. Whilst many of these tracks are rough, some access can be made on a number of them and some control may have been undertaken. The Apiculture Section of the Department of Agriculture has mapped the whole Reserve area (24496) and advised the Bush Fires Board (W.A.) supplying an inventory of the area.
4.4 Access track and fire breaks

The lack of suitable access roads and firebreaks north of the Coolimba Road presents a serious problem. Limestone ridges in places up to 60m form natural barriers for road and break construction. Firebreaks without suitable vehicle access are of little use. The 60m firebreak buffer where installed by the Bush Fires Board along the Bneabba - Dongara Railway provided some relief assistance and in many places stopped the fire. However areas to the East of the break were later destroyed by the fire when wind changes caused the fire to come in behind where the breaks did not exist.

4.5 Manpower

It should be appreciated that the majority of fire fighting manpower is made up from farmers with properties adjacent to the Reserve supported by limited resources by Local Government Authorities. The farmer input is a voluntary contribution which can be an expensive exercise in terms of fuel and possible damage to vehicles. Many are hesitant to enter the Reserve due to the rough nature of the tracks together with risk of injury.

Whilst the effort made by the farmers is very much appreciated, their first consideration is the fire risk to their own properties, not an area of bushland, and they cannot be ordered to enter an area of high risk.

Local Government Authorities have limited resources and are well aware of damage that may occur to Shire equipment if requested to undertake fire control in the very rough situations that exist within the Reserve areas.

4.6 Reserve area - responsibility

Because the Reserve is unvested, it does not become the responsibility of one authority. Lack of finance has resulted in the situation where the Bush Fires Board of W.A. have included the Reserve area with adjacent Crown land and have provided fire protection in the form of buffer strip fire breaks in some areas and standard double breaks adjacent to farming properties. As with other Authorities, finance is restricted and they use their money as best as possible to cover an extremely large area.

A fire management plan is at present under consideration by the Beekeepers' Reserve Management Committee, but lack of finance for the construction of firebreak/access roads for fire control prevents any constructive work to be undertaken.

4.7 Victoria fire control plan

The area of the wildfire falls within the Victoria Fire Control Area which is co-ordinated under the Bush Fires Board of W.A. This is supported by Shires, local farmers and other interested parties.

Due to a breakdown in communication, a number of parties were not officially advised of the situation resulting in a disorganised approach until full details could be provided. It is obvious that one overall "Commander" should have the authority to advise all parties and request assistance. The lack of a "standard" form of radio communication may have caused problems in this regard (as discussed in 4.2).
4.8 Control burning

The subject of control burning of areas of the Reserve and adjacent vacant Crown land was discussed by various bodies.

Whilst the majority of people favour some form of control burning (Bush Fires Board, farmers and local Authorities) many Beekeepers are hesitant to agree due to a loss of honey producing flora.

The present apiary site allocation situation does not allow for control burning, where 1 or 2 Beekeepers may loose all available flora for a period of up to 5 years. Apiary sites are allocated on a geographic location basis by the Forests Department and are permitted on an annual rental payment.

In discussion with some fire fighters, control burning may provide some relief but the fire survey showed many areas of previous burn regrowth up to 2 years which in fact carried a fire, whereas in other locations 2 year regrowth did not suffer. The variation in wind direction and velocity during the recent fire presented problems with unburned and previously control burned situations.

4.9 Fighting of wildfires

Due to the nature of the topography and the associated vegetation, it has been established that the only effective way to fight wildfires in the areas is by the utilisation of a burn back situation.

Fire fighting using conventional methods of water in association with machinery can assist very little. With the existing situation of a limited number of firebreaks not combined with access tracks little can be done to control with back burning and if in fact this practice is undertaken, large areas of productive country could be lost.

5. THE EFFECTS ON THE WESTERN AUSTRALIAN BEEKEEPING INDUSTRY

The wild fire of January devastated 90% of the Reserve.

The total area burnt on the Reserve and adjacent Crown land destroyed completely the flora on 143 apiary sites. Of these, 113 sites were actually on the Reserve.

These figures represent the official apiary sites for which Beekeepers are paying an annual rental of $30 per year. It is a known fact that many Beekeepers place apiaries between official sites where the higher concentration of the better flora types exist.

Therefore the real loss of apiary sites would be much higher, possibly an increase of 20-30%.

In addition to these sites there are also private sites on farmland immediately adjacent to the Eastern boundary of the Reserve and vacant Crown land. Beekeepers using these sites allow their bees to fly into the Reserve to forage. As the number of private sites is an unknown factor they will not be listed, but it must be remembered the Beekeepers concerned will be affected.

A total of 29 Beekeepers have been affected by the loss.
The fire was so severe mostly grade 2 and 3 that honey and pollen production from the area would cease completely for some time.

In the 1st year of recovery some small ground plants do flower and may produce some pollen and even small quantities of nectar. However the main honey producing plants are Dryandra cossilis and Hakea trifurcata and both these plants regenerate from seed.

It takes 2 years before Dryandra cossilis shows its first one or two flowers per plant. It is 3 to 5 years old before it starts yielding quantities of nectar pollen to support commercial apiaries and at about 8 years would be in full production.

The annual production of honey only in W.A. averages 2,000 tonnes and has been valued at $1.36m average per year over the last 6 years. It is estimated by producers that between one third to one half of their annual production comes from these winter and spring flowering areas.

The Reserve was unique in Australia in that it allowed colonies to build up early in the spring permitting Beekeepers to take advantage of late winter and early summer honey flows with strong productive colonies.

**Honey**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average production for commercial colony</td>
<td>162 kg</td>
</tr>
<tr>
<td>Average value per kg</td>
<td>65 $</td>
</tr>
<tr>
<td>Average income per colony</td>
<td>$105</td>
</tr>
<tr>
<td>One third of average income</td>
<td>$36</td>
</tr>
<tr>
<td>100 hives on each site</td>
<td>$3,600</td>
</tr>
<tr>
<td>143 sites plus 25% additional sites</td>
<td>178 sites</td>
</tr>
<tr>
<td>Total honey lost on all sites</td>
<td>$640,800</td>
</tr>
</tbody>
</table>

**Queen Bees**

Less Queen Bee production 50 per site @ $5.00 each = $250
Estimated only half Beekeepers would raise their own Queens = 89 sites involved = $22,250

**Beeswax**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Beeswax production - 1/3 of 2 kg/hive =</td>
<td>0.66 kg</td>
</tr>
<tr>
<td>Average price $3.20/kg, 100 hives per site =</td>
<td>$211.20</td>
</tr>
<tr>
<td>178 sites @ $211.20 =</td>
<td>$37,594</td>
</tr>
<tr>
<td>Estimated total loss (rounded) =</td>
<td>$682,844</td>
</tr>
</tbody>
</table>

It could also be stated that on top of this direct loss a further loss of 1/4 of all Beekeepers total production for the year would be utilised in building of his hive strength to full production level.

This would further reduce colony production by 26 kg. However, it can also be assumed that the Beekeepers will seek a late spring build up on old traditional country of cape weed, flooded gum, york gum and Paterson's curse which could in fact halve this additional loss reducing it to 13 kg.
There is also the additional cost of travelling to locate, negotiate and pay for these additional late spring sites estimated cost $1.50/hive.

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<table>
<thead>
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<tbody>
<tr>
<td>100 hives per site</td>
<td>$150</td>
</tr>
<tr>
<td>178 sites</td>
<td>$26,700</td>
</tr>
<tr>
<td>13 kg honey @ 65¢</td>
<td>$88.45</td>
</tr>
<tr>
<td>100 hives per site</td>
<td>$8845</td>
</tr>
<tr>
<td>178 sites</td>
<td>$150,410</td>
</tr>
<tr>
<td>Total additional loss</td>
<td>$177,000</td>
</tr>
</tbody>
</table>

The immediate loss for the winter spring of 1984 = $683,000
Plus additional build up loss = $177,000
Total loss for 1984 = $860,000

It is expected that this loss would also apply for the spring of 1985, 1986 making an all up total loss of $3,648,000.

From 1987 over the next 5 years until 1991 the loss should reduce on a sliding scale as production increases each year.

It is estimated the losses could be expressed as follows:

1987 a loss of $500,000
1988 a loss of $300,000
1989 a loss of $100,000
1990 a loss of $50,000
1991 full production

This indicated a further loss of $1.4m.

The estimated total loss to the Beekeeping Industry over the next 8 years is $3.4m.

As the Industry is not in a position to carry the burden of this tremendous loss, it is recommended that consideration be given to the granting of financial assistance to disadvantaged Beekeepers.

Other losses not included in the foregoing are - the hundred of railway sleepers lost by Westrail and the damage to the Tourist Industry in the loss of their wildflower tours in the area.

6. PROPOSALS AND RECOMMENDATIONS

From observations made during the survey and comments expressed by people involved during the wildfire, the following proposals and recommendations are listed for consideration:

6.1 Cartography

At present, a variety of maps and aerial photos and mosaics are available but vary in detail, scale and accuracy. From a study made of the maps presently used by the Bush Fires Board of W.A., are out of date and do not provide details of all tracks within the fire area.
It would appear that these have been compiled from 1969 aerial photography and many alterations have taken place since that time.

The Apiculture Section of the Department of Agriculture has mapped the area from aerial mosaics 1:50,000 scale from photography September 1982 and has provided Bush Fires Board and local Authorities with an inventory of the Reserve cartography information.

To date, it would appear that this information has not been transposed onto maps being used by the Board.

It is essential that up to date maps in a suitable scale 1:50,000 be produced showing road and track details of the Beekeepers Reserve from the West coast and vacant Crown land East to the Brand Highway and beyond. The Apiculture Section is prepared to assist in any way.

6.2 Communications

The lack of a standard communication radio frequency presented problems during the fire fighting operations. As discussed in Section 4.2 a variety of radio frequencies were in use.

A standard communication system for fire control is essential. The system used by the Bush Fires Board (UHF repeater system) provides a service where Local Authorities have installed the system. However many farmers and Beekeepers use HF or UHF frequencies and the change over to a new system could prove costly. Priced at $750 approximately, these sets can link into the existing system but cost could prohibit some people from participation.

It is recommended that the Department of Communications be contacted to provide the latest information and suggest a system that would suffice for operations in this area.

6.2 Fire breaks and access roads

Due to the topography and nature of the country in which the wildfire took place, fire fighting or back burning is virtually impossible due to the lack of suitable vehicle tracks in the area, particularly North of the Coolimba Road.

Firebreak/access tracks in specific locations for fire control are urgently required. Construction of these would be very expensive and the lack of available Government finance may be the prohibiting factor.

Discussions have taken place between the Bush Fires Board of W.A. and the Apiculture Section (Department of Agriculture) in relation to the construction of new break/access tracks and investigations are underway.

This topic will be discussed at the next meeting of the Beekeepers' Reserve Management Committee.

6.3 Vesting authority

As the Reserve 24495 is unvested, there is no authority responsible for its overall management. It adjoins large areas of vacant Crown land which to many property owners adjacent to it consider it to be a problem area.
Bush Fires Board have the responsibility of unvested reserves and vacant Crown land in relation to fire control, but must rely on volunteers, farmers, beekeepers etc to form a fire control unit. As discussed in 6.2, the existing tracks within these areas provide little incentive for persons to carry out fire control from the risk of damage to vehicles and to human life.

A vesting authority is required if the area is to be protected through a fire management plan.

6.4 Fire management plan

It will be necessary for the Beekeepers' Reserve Management Committee to make recommendations to the Bush Fires Board of W.A. or the vesting Authority if such is created, as the most effective way for the Beekeepers' Reserve and adjacent vacant Crown land be managed in respect to fires.

At present Beekeepers' using the area are not in favour of control burning of large areas due to production loss. It was evident that some areas of regrowth following a burn did provide some protection but this was dependent on the wind direction and velocity at the time.

The issue of fire control of areas where Beekeepers are involved is a difficult one to finalise. Opinions vary considerably with fire control methods and a general recommendation must be made before any management plan can be implemented.

At a meeting of the Beekeepers' Reserve Management Committee, proposals for fire control in the area were formulated and presented to the Bushfires Board (W.A.) meeting at Carnamah on the 28th March, 1984. A copy is attached.

6.5 Assistance to Beekeepers

Allow rental payments for fire affected apiary sites to be waived for a period of 5 years until full production from flora species returns.

Allow existing apiary site holders to retain these sites rent free until full production returns to the area.

Discuss with the National Parks Authority and the Department of Fisheries and Wildlife, the existing problems with apiary sites on specific reserves.

Discuss the possibilities of increasing the number of apiary sites in areas not affected by fire for a period of 5 years.

Consideration be given to the granting of financial assistance to disadvantaged beekeepers.


At the invitation of the Bush Fires Board (W.A.), a meeting was held to discuss the West Coastal areas - Lancelin to Dongara and representatives of many Government Departments, Local Government Authorities together with local Fire Control Officers, were present.
Following 2 hours of discussion, two resolutions were made:

1. Undertake a survey of the Reserves (vested and unvested) and areas of vacant Crown land between Lancelin in the South to Dongara in the North to assess the fire control requirements, including access tracks, firebreaks and buffer strips.

Such a survey would be undertaken by the Bush Fires Board of W.A. with assistance from the Department of Fisheries and Wildlife, National Parks Authority and the Apiculture Section, W.A. Department of Agriculture, who are able to provide relative information regarding specific areas.

2. Establish a committee to formulate a West Coastal Fire Control Plan incorporating Fisheries and Wildlife, National Parks, Local Authorities and the Beekeepers' Reserve Management Committee.

At the time of this report, minutes of the Carnamah meeting were not available but will be provided as soon as possible.

6. ACKNOWLEDGEMENTS

Appreciation is expressed to the following who assisted in providing information regarding the wildfire for this report.

Mr J. Fitzharding
Mr J. Pickering ) Shire of Irwin

Mr N. Sommers) Mr P. Sommers) Graziers, Arrowsmith

Mr J. Robley ) Mr. W. Harris)
Mr R. Flaise ) Bush Fires Board of W.A.
Mr R. Gould )

Mr H. Boughton Department of Lands and Surveys

Mr P. Stevens) Mr W. Stevens) Mr B. Pearson) Beekeepers

Mr G. Ellis Bureau of Meteorology
1. Squatter's Shacks Location North Head Wildfire Starting Point. No damage to Shacks and Garden Areas.

2. Fire Damage To "York Gum" and Understory Podooloo Well Adjacent to Eneabba - Dongara Railway Line.
3. Sand Hill Vegetation Damage Location Illawong Township - Cliff Head Coolimba Road.

4. Wind Erosion on Sand Hills - Location Illawong Township - Cliff Head Coolimba Road.
5. Fire Damage to Rare Eucalyptus Species Euc. dongarrensis.  
Location Cliff Head Area.

6. Unburnt Acacia and Eucalyptus species Location Cliff Head area.  
Illustrates Normal Situation.
7. Location Sawyer's Track (Between Coolimba and Old Green Head Road) Extensive Fire Damage to Flora.

3. Location West of Railway Line North of Beekeepers' Road Looking West. Extensive Damage to Dryandra Sessilis and Hakea Species.
9. Location Beekeepers' Road Looking S.S.E.
   Extensive Damage to Flora Essential to Honey Production.

10. Extensive Loss of Wildlife Evident in Many Areas of Reserve 24496.
    Location Beekeepers' Road.
11. Location Arrowsmith Siding - Looking East.
Extensive Damage to Eucalyptus, Hakea and Dryandra species
Beyond Bush Fires Board Rolled Firebreak.

12. Exposed Geology. Location Arrowsmith Area Adjacent to
Railway Line Typical of Many Areas Throughout Reserve 24496
And Adjacent Vacant Crown Land.
13. Regrowth of Eucalyptus todtiana 5 weeks After Wildfire.
Location N. of Beekeepers' Road West of Emsabba - Dongara
Railway Line.
"RECOMMENDATIONS & PROPOSALS FOR A FIRE MANAGEMENT CONTROL PROGRAMME FOR THE BEEKEEPERS' RESERVES AND AREAS OF ADJACENT CROWN LAND"

PRESENTED TO A PUBLIC MEETING HELD AT THE CARNAHAN SHIRE COUNCIL 28TH MARCH, 1984.

COMPILED BY:
R.C. BURKING
(SECRETARY)

MARCH, 1984
CONTENTS

1. INTRODUCTION

2. PROPOSALS AND RECOMMENDATIONS
   2.1 Area Survey
   2.2 Access Tracks
   2.3 Land area - Grid Network System
   2.4 Beekeeper Involvement
   2.5 Cartography

3. CONCLUSIONS

4. REFERENCES
"RECOMMENDATIONS & PROPOSALS FOR A FIRE MANAGEMENT CONTROL PROGRAMME FOR THE BEEKEEPERS' RESERVES AND AREAS OF ADJACENT CROWN LAND".

COMPILED BY: R.G. BURKING (SECRETARY)
BEEKEEPERS' RESERVE MANAGEMENT COMMITTEE
MARCH 1984.

1. Introduction:

During the period January 16th - 21st, 1984, a large wildfire devastated large areas of The Beekeepers' Reserve, Proposed Fisheries & Wildlife Reserves and adjacent Crown Land. The area affected is essential to the Beekeeping Industry of Western Australia and loss to the industry following the wildfire has been estimated at up to $1 million per year for a period of 5 years until the regeneration of vegetation has occurred.

As experienced by local Shires, The Bush Fires Board, Beekeepers and local volunteers, the area due to its topography presents numerous problems in fire control. Such obstacle such as lack of firebreaks, access tracks and standard communications greatly reduce efforts to bring a large wildfire under control.

At the request of the Bush Fires Board of W.A. the Beekeepers' Reserve Management Committee was requested to submit proposals and recommendations for a Fire Management Committee Control Programme for presentation and discussion at a public meeting at Carnamah on the 28th March, 1984.

The following proposals and recommendations are the result of a Beekeepers' Reserve Management Committee meeting held 26th March, 1984.

2. Proposals and Recommendations:

2.1 Area Survey

The area at present is devoid of thick heavy vegetation (which in the past has presented survey problems). Large areas of burned country now exist and it is possible to survey specific locations to assess the possibility of access road and firebreak construction.

This can be undertaken with the assistance of aerial photos and mosaics available from the Apiculture Section - W.A. Department of Agriculture.

It is appreciated that problems will be experienced by the survey parties but it is essential that a survey be undertaken as soon as possible before regeneration occurs following winter rains increasing the problems of travel.

Some assistance can be provided by the Apiculture Section - W.A. Department of Agriculture if required.

2.2 Access Tracks

With the exception of a few major roads such as the Coolimba Road, Coorow-Green Head Road, Cliff Head - Coolimba Road, and the Brand Highway, the area in general lacks suitable tracks for access or fire control. Beekeepers in many locations have constructed tracks for the transportation of bees etc., and these are evident south of
the Coolimba Road. However, to the north of the Coolimba Road, access tracks are limited due to the topography of the area. Large limestone ridges run North-South creating obstructions to firebreaks and access roads construction on an East-West basis. A number of Exploration seismic lines cross the Reserve E-W and could provide vehicle access if upgraded. On the whole, the tracks are suitable for 4-wheel drive usage but extremely rough conditions are experienced when crossing the ridges.

Upgrading of these rough limestone outcrops would provide complete access E-W at specific locations, such as Beekeepers' Road and Seismic line A3 (Arrowsmith). Upgrading can be undertaken using sand to fill in the large holes and then covered with gravel to ensure against erosion. An estimated cost to upgrade specific tracks is in the vicinity of $4000 per kilometre.

Careful selection of existing tracks should be undertaken to ensure the maximum usage of available finance.

It may be possible to gain access in specific locations if track directions were altered at various points to avoid "ridge" situations and may be realigned on an angle basis which may provide easier and less costly track upgrading. This would need to be studied closely during the initial survey work.

2.3 Land Area-Grid Network System

Due to the large expanse of country, any wildfire at present can destroy large area due to the lack of suitable firebreaks, roads or access tracks. This is particularly obvious in the area of Reserve 24496 together with the vacant Crown Land - north of the Coolimba Road.

Recommendations are to construct a series of grid line firebreak/access roads at various intervals in specific locations of the land area, depending on topographical features.

Proposals are :-

South of the Coolimba Road - a 5km grid system due to the availability of existing tracks and Beekeeper firebreaks.

North of the Coolimba Road, due to the topography of the country, a 10 km grid system utilising known tracks such as Beekeepers' Road and seismic line A3 and A9 (Arrowsmith Area) etc.

Within these 5 or 10 km grid lines, smaller access tracks/firebreaks could be constructed by beekeepers tying in to an overall network system.

These may best be classified under the system at present used by the National Parks Authority.

Access Track - 4-wheel drive use limited use as firebreak.

2nd class Firebreak - Light vehicle duty usage may provide limited use for fire control in a burn-back situation.

1st Class Firebreak Track - Upto 4m wide allowing usage by heavy duty fire fighting equipment, two way traffic and turning areas. These may be used as a major fire control line system to undertake a large burn-back situation. This would be the mainstay of the 5 or 10 km grid network.
Depending on the topography of the location these main grid line systems would need to be adjusted to avoid the rough limestone ridge situations to the Western Edge of the Land area.

It may be necessary to install the grid system on each side of specific ridge situations.

2.4 Beekeeper Involvement:

As the area under discussion is used primarily by Beekeepers for Honey and Pollen production, it is essential that they should be involved with any fire control management programme.

Recommendations are as follows in this regard:

- A list of Beekeeper's Names, Address and Telephone numbers be lodged with the local Fire Control Officer and the applicable Shire;

- An inventory of manpower and equipment available for fire control in specific areas. This should be lodged with both the Fire Control Officer and the local Shire;

- Beekeepers should be encouraged to join the local Bush Fire Brigade associated with his specific area and attend local fire Advisory Committee meetings to formulate fire management policy and planning.

In a number of cases, this is being undertaken, and during the recent wildfire, many Beekeepers assisted in fire fighting operations, particularly in the Green Head - Coolimba sections.

The Bush Fires Board of W.A. should encourage involvement by Beekeepers and regularly advise them of Seminars and fire fighting demonstrations which are conducted by the B.F.B. at regular intervals.

Beekeepers to liaise with each other and with locals in specific areas to discuss specific problems in fire control.

2.5 Cartography:

Following investigations, it is obvious that the lack of up to date accurate maps of the Land area under discussion are not available.

Present map usage includes, 1" to the mile Lithos, 1:50,000 topographical; in some areas, line complications based on 1976 aerial photographs and 160 chains to the inch lithos, create a complicated system for use during fire fighting operations.

It is considered essential that up to date, accurate maps be made available through the Department of Lands and Surveys at a suitable scale i.e. 1:50,000 utilising track names as installed by the Apiculture Branch, Western Australia Department of Agriculture.

(Some assistance in this regard can be provided by the Department of Agriculture).
Distribution of maps to Local Fire Control Officers, Local Shires and other associated Government Departments is essential and distribution and display of such maps is important during operations.

The latest aerial photography for map compilation available is October 1982 from the Department of Lands and Surveys. It is from this data that the Apiculture Branch has produced a track inventory.

It should be appreciated that these proposals and recommendations are extremely broad and at this stage do not provide the fire detail which is ultimately required. For the purpose of this public meeting, a summary is provided.

3. Conclusions:

The land area discussed is a very important area to Beekeepers, Tourists and Wildlife and Conservation Authorities. In many ways, it is unique in such fields as vegetation soil types and topography. To ensure its preservation it is important that a Fire Control Management Programme is instigated as soon as possible.

4. References:

Burking, R.C. (1983)
"An Inventory of Roads and Tracks within the Beekeepers' Reserves".

"Proposals and recommendations for the upgrading of existing lines and seismic tracks as access Roads and Firebreaks within the Beekeepers' Reserves".

"Proposals for the relocation of some boundary sections of the Beekeepers' Reserves for consideration by the Beekeepers' Reserves Management Committee".

"Western Australian Beekeepers' Reserves"
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March 27, 1984