

the hidden cost of **BUSHFIRES**

A spokesman for the Country Fire Authority said they were "acutely aware that at any minute the situation could blow up".

Millions of equipment swung into action to fight the fires' progress.

The Bright fire has been burning since Monday night and is expected to burn for several days.

Mr Crow said there were about 30 fires burning. The situation has placed a drain on the State's resources, but Mr Crow said there were far from



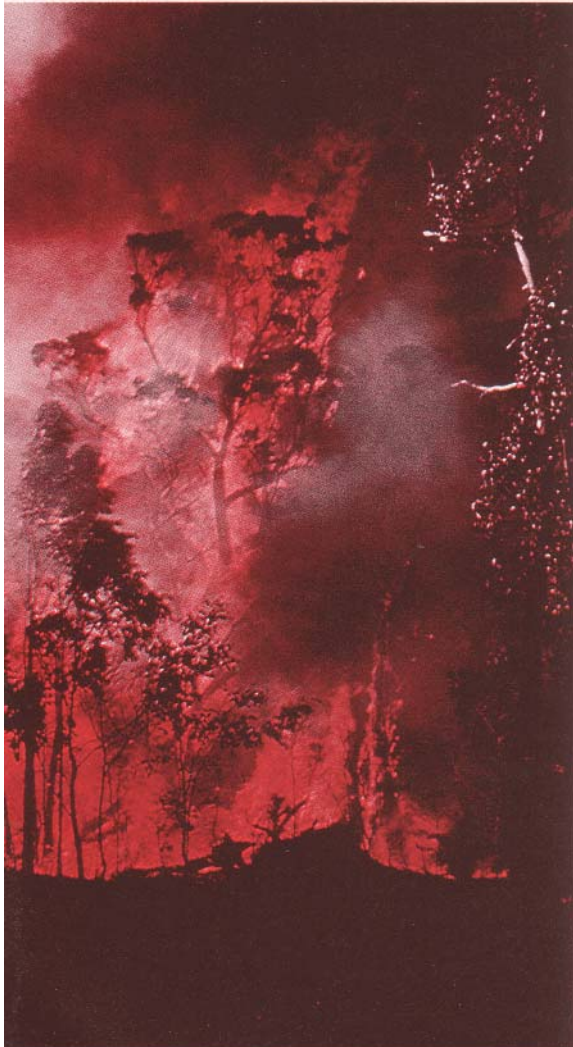
Photographs: Courtesy National Parks and Wildlife Service of N.S.W.



BUSHFIRES – THE HIDDEN COST

Bushfires are a common phenomenon of southern Australia. Each summer, many hundreds are started but about 95 per cent are rapidly brought under control and do little lasting harm. However, the five per cent that do get away cause almost all the serious damage. Fires can seriously affect flora, fauna, buildings, bridges and property. By removing the protective cover of vegetation they also expose soil to erosion which can result in sedimentation of water supplies and streams.

In January 1985 after a long period of above average rainfall followed by a long dry spell, the fire danger in the Hume catchment area of south-eastern New South Wales was extremely high. During the night of January 15-16 the area was hit by a series of electrical storms with lightning strikes starting over 200 fires. Most were quickly contained but several roared out of control.



↑ Fires threaten human life, ruin homes and kill plants and animals

Photo: Courtesy Bush Fire Council of NSW

← Almost every summer, bushfires severely damage forests and farmlands in New South Wales.

Photo: Courtesy Bush Fire Council of NSW

Fanned by high winds, one fire burned for several days and devastated 40 000 hectares, including 30 000 hectares of forested land. The most seriously affected area was vacant Crown land which has since been dedicated as Woomargama State Forest.

The immediate damage was considerable. The Holbrook Shire alone estimated cost of destroyed livestock and facilities at \$2.5 million with a further \$16,000 spent on repairing the fire-affected Albury to Jingellic road.

But the immediate losses do not tell the full story.

Following the fires the threat of further damage, this time from rain, was very real. In the forest area, a combination of steep slopes, highly erodible soils and a very intense fire resulted in a bare, erosion susceptible land surface.

The erosion was not long in coming. Although rainfall in March 1985 was of low intensity - 11 mm on the first day and 40 mm some days later - extremely high runoff occurred, causing serious soil erosion. Large amounts of sediment moved across the forest floor and out into roadways, farm dams and flowlines. This added to the already high cost of the fires and compounded their effect.

The degree of destruction wrought by the bushfires in the forest was graphically revealed by aerial photographs taken after the fires were controlled. Huge quantities of soil, ash and sediment had been swept along by runoff water, channelling into streams, clogging farm dams and threatening water storages.

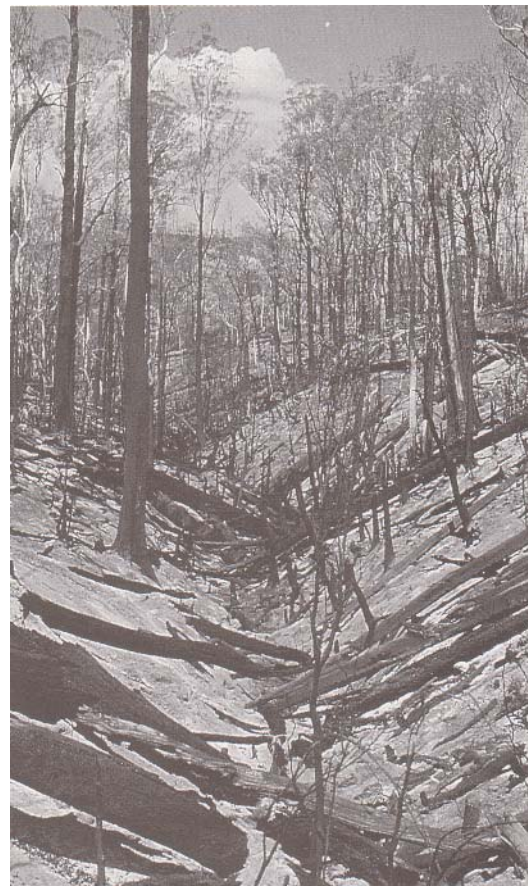
While it is impossible to prevent bushfires we can at least lessen their intensity by reducing the quantity of fuel available to feed the flames.

Sediment, the result of rain on an area → left bare after a forest fire, encroaches onto lower lands.



Photo: Courtesy Bush Fire Council of NSW

↑ Fires threaten human life, ruin homes and kill plants and animals.



With no protective tree canopy or ground cover, this fire-devastated country is prone to severe erosion which can spoil nearby land and rivers.



A less intense fire, burning when conditions are mild, allows faster regrowth which forms an effective buffer to subsequent falls of rain. This in turn will help curb soil erosion and other hidden costs of any subsequent bushfires.

The Hume catchment area of NSW comprises the headwaters of the Murray River and, as in all catchment areas, contains a diversity of vegetation and landforms and supports a variety of land uses. Managing the basic resources of soil, water and vegetation requires co-ordination by policy makers, land owners and land managers. Good management will result in a continual flow of good quality water, sustainable agricultural and forest production, and retention or enhancement of the habitat for the wide variety of fauna and flora unique to the region.

The fires of 1985 clearly demonstrate the need for effective regional-or at least catchment-based - fire management plans. These plans co-ordinate all aspects of fire control such as hazard reduction burning, construction of fire trails and fire breaks and fire fighting.

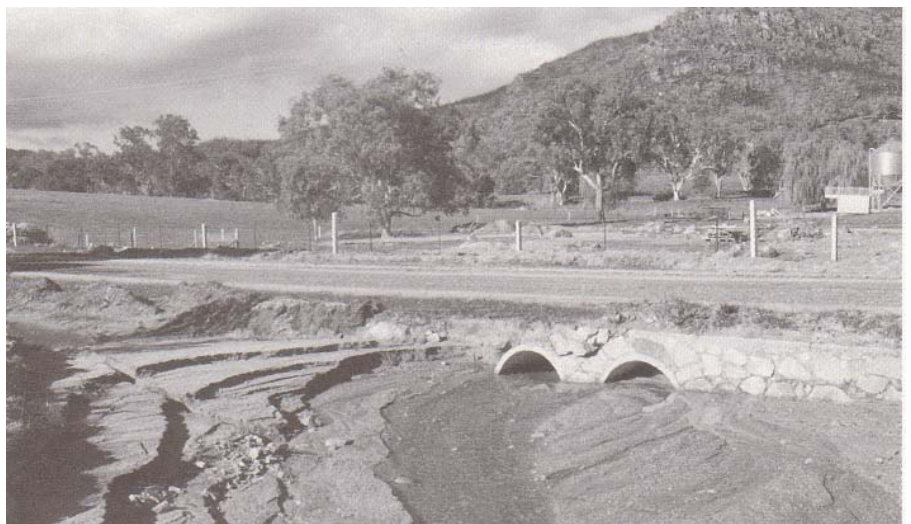
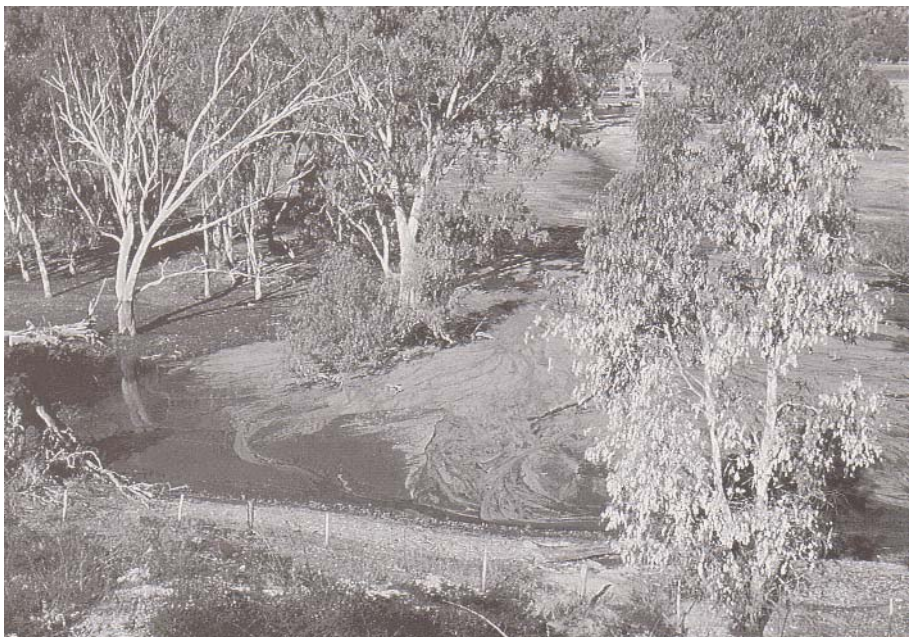
That such planning is feasible and successful has been demonstrated by the operations of the Hume Snowy Bushfire Prevention Scheme in the upper catchments of the Murray, Snowy and Murrumbidgee Rivers.

The Hume Snowy Bushfire Prevention Scheme is directed by a group of organisations and individuals, all with a strong interest in protecting the area and includes government departments and authorities, local government and landholders. It has functioned for over 30 years and during that period has developed and refined methods of fire control that have become models for other areas.

■ Top: Major river systems also suffer the aftermath of bushfires. Here sediment moves into the Murray River following a fire in the upper catchment.

■ Centre: A lagoon on the Murray flood-plain filled with sediment and ash after fires and rainstorms in 1985.

■ Bottom: Local councils must meet the cost of clearing drainage systems clogged by sediment – another hidden cost of bushfires.



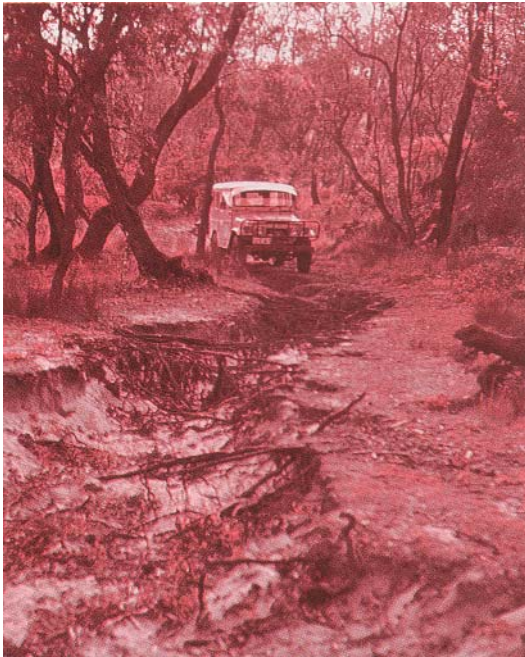
The effectiveness of coordinating fire protection demonstrated by the Hume Snowy Bushfire Prevention Scheme suggests it would be possible - and desirable - for similar programs to be developed for other catchments and regions of the State.

■ Top: Sediment carried by runoff from burnt out country choked this small creek and some farm dams in the Riverina in 1985.

■ Below left: Fire fighting operations can be seriously disrupted by eroded access tracks.

■ Below right: Hazard reduction burning carried out under strict supervision, can reduce the impact of wildfires.

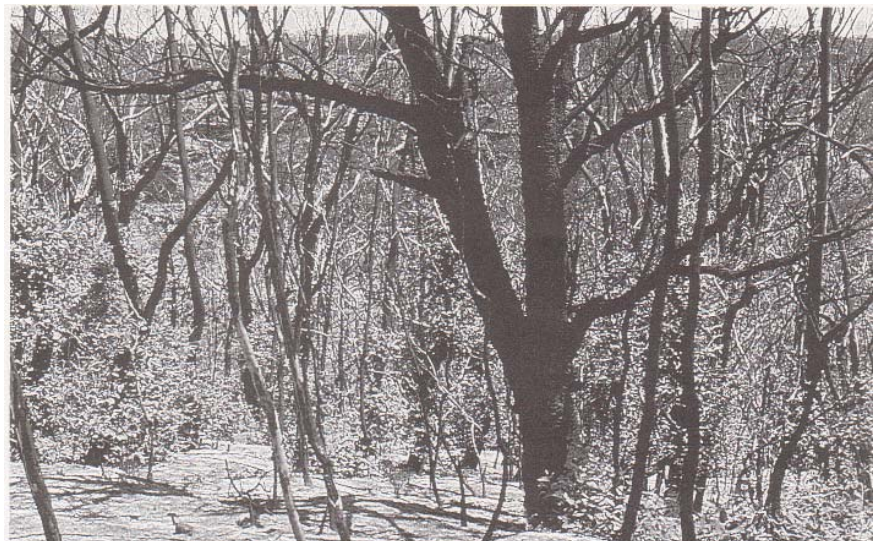
Photo: Courtesy National Parks and Wildlife Service of NSW



Catchment management must embrace all processes that can have an adverse impact on its resources. Human activities and natural events such as fires can all too easily lead to a deterioration in the quality of the environment, and especially to soil erosion. Co-ordinated planning by all involved in land management is the key to protecting resources for the future.

Additional information on soil erosion and soil conservation can be obtained from any office of the Soil Conservation Service of New South Wales.

■ Right: The environment is slow to recover from very hot fires.



New growth breaks through the scorched soil.



Fires threaten the stability of catchments by destroying vegetation and exposing the soil to erosion.



Fire management should be co-ordinated and include measures which reduce the impact of fires on forested and farming land.



This publication has been prepared with the endorsement of the Hume Snowy Bushfire Scheme whose membership comprises the Soil Conservation Service, NSW; Forestry Commission, NSW; National Parks and Wildlife Service, NSW; Snowy Mountains Hydro-electric Authority; a representative of shires in the eastern catchments and a representative of shires in the western catchments.