Bushfire and Environmental Threats & Possible Management: A Case Study of Sydney, Australia

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Introduction

Earth, Air, Water, Fire–the four natural elements known to man. In Australia we have had a very bad earthquake in Newcastle, New South Wales back in 1989 and several earth tremors in the Southern Highlands, where damage to property has been done. We have had tidal waves from the ocean and "spring tides" at Full Moon from November on through summer at times, as well as disastrous floods from too much rain suddenly, in the inland river systems. These floods do cause loss of life, particularly with people trying to cross a river bed by car and misjudging the power of the swollen river. They often get swept away to their deaths. People also drown trying to save others swept into rushing rivers. Inspite of these tragedies, nothing conjures up more fear than fire. Australia is called the land of flood and fire. The Australian Bush is made up largely of Gum Trees, often referred to as the Eucalypts, and there are many species. All of these trees contain eucalyptas oil, which is nowadays used medicinally for the natural healing of many ailments. The leaves are the only food for the Koala bears. Many of the houses in the Sydney suburbs are built near the bush and some too near the bush. Every year we seem to have trouble with bushfires endangering human life and property, both on the northern, western and southern sides of the harbour these bushfire dangers persist.

Past History of Fire Disasters in the World

The great fire of London, September, 2-5, 1666

The great fire of London was the worst fire in the city's history. It destroyed a large part of the city of London including most of the civic buildings old St. Paul's Cathedral, 87 Parish church's and about 13,000 houses. At least 9 people were burned to death. Some important historical insights into this appalling disaster are contained in the diaries of Samuel Pepys (1633-1703) who was living in London at the time. The fire broke out accidentally at king Charles IIs baker in Pudding Lane near London Bridge when a spark from the ovens ignited the hay in a neighbouring in yard.

La Compania Church, Santiago Chile Dec. 8, 1863

In the world's worst fire disaster in a single building, approximately 2500 people, nearly all women and children were burned to death as flames spread quickly through La Compania church in Santiago, the Capital of Chile. That there were very few men among the victims is explained by the fact that the tragedy occurred on the feast of the Immaculate Conception. This day one of the most important dates in the Roman Catholic calendar is of particular significance to women because it celebrates the doctrine that Mary, the mother of Jesus, was free from original sin.

On the day of the feast some 20,000 candles were burning and 3000 people were squatting on prayer mats and at 7 pm a Convave Cresent moon caught fire and spread quickly through the building. The priests escaped and left the congregation to die. The church was gutted in less than 20 minutes.

The Great Chicago Fire, USA, October, 8-10, 1871

Four square miles of Chicago, including the whole of the business district, were destroyed in October 1871 by a blaze that raged across the city for nearly three days. The conditions were ideal for a fire as there had been a long hot summer and most of the building were built of wood. Starting in a south-western suburb, flames spread rapidly northeastward, leafing the Chicago River and dying out only when they reached Zalme Michigan. About 250 people died, 90,000 more were made homeless, 18,000 buildings were destroyed and almost 200 million dollars worth of property was lost. One story is that Mrs. O'Leary's cow knocked over a lighted kerosene lamp which set fire to a pile of hay and wood shavings.

Triangle Waist Factory, New York, USA March 24, 1911

One hundred and forty-six workers were killed when fire swept through a shirt factory on the top three flooms of a 10 story building in Washington Place in New York City. Some 125 of the victims were young women aged between 16 and 23. The Triangle Waist Company was a sweatshop in a squalid loft building. The workers were explacted by having to put in long hours for poor pay in dangerous conditions. The fire Raged on the 8th floor at 1640 hours, 5 minutes before closing time. Most of the women were Germans, Hungarians, Italians and Russians all recent immigrants hired for a rush job as all of the Jewish workers had been sacked, having demanded better working conditions.

Bush Fires, Indonesia, 1997

For most of 1997, up to a million hectars of forest, scrubland and plantation burned out of control across much Sumatra and Kalimantan (The Indonesian part of the Island of Barrier). This was one of the most wide ranging fires ever and presented an enormous ongoing threat, not only to

the many rare and endangered species of wildlife in its path but also to the whole ecosystem to the planet earth.

Ash Wednesday, Australia

Forest Fires, Western USA Summer 2000

The year 2000 saw some of the worst outbreaks of forest fires in living memory. Across huge swathes of the western United States. Eleven states were ravaged from Arizona and New Mexico in the south to Washington and Montana in the North and from California in the west to Colorado in the east an ecological disaster on a virtually unprecedented scale was also in the making. The chief cause of the inferno was "dry lightning" produced by a combination of high temperature, low humidity and painless thunderstorms. Thousands of dry lighting strikes had set fire to the tender dry brush and undergrowth. Holiday makers also contributed by discarding cigarate butts and barbecuing their food.

Childers, Queensland, Australia, June 22, 2000

Eighteen people died when fire tore through the Palace Hotel, a wooden two – story backpacker's hostel in childers, some 130 miles (208 km) north of Brisbane. The blaze was apparently started deliberately by a man with a grudge against the management.

In many parts of the Australian Bush fires are a recurring fact of life. But in February 1983 they became a multiple killer when 68 people died in a conflagnation that spread across many parts of Victoria and South Australia. Adelaide, the South Australian capital, was covered by a pall of smoke blown in from other parts of the state. This happened at the start of Lent and as a result the tragedy became known as Ash Wednesday.

Bushfire and Environmental Threats to the Sydney area

Australia can now boast of having one of the best fire brigade services in the world. We have professional fire watchers placed throughout the bush and a very fast response team to fight the fires. In addition to this, we have the Volunteer Fire Brigade Service stationed in many suburbs ready to give an additional lending hand when necessary. The general public is now very well informed about fire and its dangers, both in and around the home. Leaflets are supplied freely to every household living in an endangered area. These are updated every year and are worth keeping in the kitchen. The next big question is "How does a bushfire start?" There are many answers to this question.

Causes of Bushfire

(a) In Australia, careless people may throw a lighted cigarette butt out of the window from a car. When the butt has not been properly extinguished and it lands on the earth on dry

leaves, then that will be sufficient cause to start a fire. If some person is quick enough to observe the commencement of a fire and even take the registration number of the car from which it was thrown, then steps can be taken to put the fire out and an offender can be heavily fined, put through the courts and end up with a goal sentence.

(b) A piece of clear glass from a broken jar or bottle which is lying freely on the dry leaves under the sun's rays, when the temperature is round 40º Celsius, may also be sufficient cause to start a bushfire. Worst is, when such an occurrence happens kilometres from nowhere in really remote areas. Such fires are often spotted by aeroplanes and quickly reported but although this is done, there is often no access to the thick scrub in the bush and this is where the latest technology in the form of "water bombs" comes quickly into action. The latest helicopter using this technique can get their water from private swimming pools, rivers, lakes etc. With the present drought in New South Wales at the moment, water access is proving a crucial factor facing the fire authorities in 2005 should an outbreak occur.

(c) Teenagers in Sydney quite recently have deliberately lit fires, have been caught and are at present in goal. Some people have lost their homes and all of their possessions through this thoughtless, destructive behaviour.

(d) One of the most terrifying and horrifying phenomena facing the professional fire fighters is wind change. A fire can break out anywhere, including the Sydney area and just when the firefighters think that they have everything under control, a strong gusty wind change can occur, sending the fire quickly upwards to the tops of the gum trees, and being close together, the oil in the dry leaves ignites in the highly combustible atmosphere leading to an out of control fire storm just within minutes. We see the whole scenario portrayed on the Television. Once again, the helicopters with their water bombs have to come to the rescue and fight they must. Nature is very powerful when her forces are unleashed.

(e) Two or three years ago at Mt. Kuring – gai, one of the outlying bush areas of Sydney, some young people were working for the Parks and Wildlife Association and they were being instructed in "back burning". This is a technique used to deliberately light the loose scrub nearest the earth, keep it under control and let it smoulder. This is usually done late August through to springtime September, before the real summer heat starts. The first day went well. The second day, in order to continue the work, the group proceeded further into the bush. Suddenly, before the smouldering stage, an unexpected gust of wind swept up through the valley from an unusual direction and the flames grew so rapidly that four of these young people were burnt to death inspite of having maps for a so-called quick escape. Nature shows no mercy. Many of the National Parks around Sydney really need

"fire breaks", that is, wide treeless areas to prevent fires from spreading. There are always political arguments over this issue.

(f) Strangely enough, in Sydney round January and February we are getting more and more electrical storms. A tree can be struck by lightning and cause a large fire to start. Even light rain is not enough to put the fire out. The aboringies were masters of fire. They knew when to start a fire and why. They would have a piece of wood as a base, scrape a hole into it, and between their hands they would rub a pointed stick until enough friction was caused to start a fire. Many birds and animals inhabit the Australian bush. They need the trees for food and nesting and many lose all of this when the big fire-storms come. The Koala Bear who lives and sleeps in the gum trees is much slower to move than say, the Kangaroo, when the big fires come. Fire and its destruction strangely enough helps the Australian bush to regenerate very quickly. What appears to be the remains of burnt-out tree trunks and undergrowth, quickly starts sprouting new shoots and new leaves and flowers are soon appearing. This process has been going on for thousands of years.

The environmental threat from a bushfire is obviously the loss of life to the plant and animal world and immense damage is done to human society emotionally, financially and socially. Some people are not only under insured-they are not insured at all, either for house or contents, and they find themselves destitute. The management of extinguishing any bushfire, be it in the Sydney suburbs or out in the wild bush, is in the capable hands of the Government State Fire Authority, one of the fastest response groups and highly technical organisations in the world. The Volunteer Fire Brigade also pays a major role in helping the professionals and all NGO groups should in turn help them too. Many of these volunteer fire fighters start fire fighting at 6 p.m. after their days's work and may fight through until midnight. Each does what he can.

Because of advanced technology and communication, the response time to all the fires has been considerably reduced. The training of professional five fighters takes many years and fire management is a difficult and life threatening job. Even when these highly skilled men are in the bush trying to trying a fire storm under control, there is sometimes a wind change and they have been burnt to death together with their fire engine. New council building regulations have now been drawn up so that people may not build too near the bush. The neighbourhood watch groups and self help groups do an outstanding job in the suburbs and many people are already saving other people's houses before the fire Brigade arrives.

Conclusion

One may say that education plays a most important role. Every year we are told to take out the leaves from our guttering and remove loose wood and debris Also from near our houses. Also, we must have water hoses connected to the house front and back. Another very important lesson is

how to save yourself if you are trapped in the bush. Dig a hole deeply enough in which to place your nose. Lie stomach down on the earth. There is always a space of 24 to 30 centimetres of oxgyen between the earth and the fire. Cover yourself with a wet blanket if possible. In this emergency you may get burnt but you may also save your life, which is more important. Do not make the mistake of jumping into a swimming pool to avoid the encroaching flames as there is no oxygen directly above water as there is above the earth. One woman in Jannali, a suburb of Sydney, did this and she died from lack of oxygen. The fire brigade had told her to leave her house and "run for it" but she thought she knew better. Always heed advice from experts. The officers from the Fire Brigade visit schools regularly and teach the children about the dangers of electrical appliances being left on, playing with matches and the danger that that brings and what to do in an emergency. Follow instructions from the fire chiefs. Every capital city of Australia has had its fire tragedy but it is only through education that fire awareness and fire hazards can be kept to a minimum.

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