Fires!

Management and Safety

An information leaflet

Introduction

We have all had bonfires in our back gardens at sometime. However, the fires that we have on work sites can be much bigger and hotter. It is important, therefore, that we manage the fires responsibly and ensure that everyone works in a manner that ensures their safety and that of others at all times.

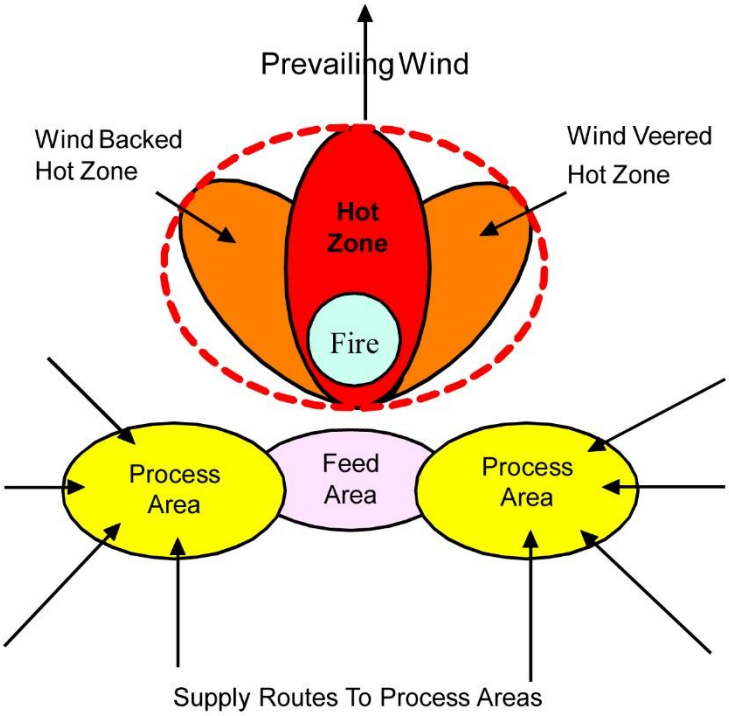
Location of fire

Choosing a fire site location is never easy and often involves conflicts. In an ideal world, choose a site in the middle of where you are working so that cut material can be dragged the shortest distance. Try to find a large open space that is flat and away from trees to be left to avoid heat damage (minimum 5m). Keep away from fences and footpaths. Avoid rabbit holes that can cause one to stumble. On sloping ground, locate the fire site down the hill as it is easier to drag material downwards with the help of gravity. In a wood, a gap in the trees will allow heat to rise up without damaging higher branches. Always reuse fire sites if possible. Always check the weather for wind direction that may dictate where you have a fire site. Smoke across roads and into properties must be avoided. The owner of the site may dictate the location.

Preparation

Always prepare a fire site before lighting. This will include cutting small scrub to ground level to remove tripping hazards. Overhead branches in your way must be cut back to the main branch or trunk. Do not leave pointy bits sticking out that can spear an eye. Fires will grow in size so the work area near the fire will move away from the centre of the fire. Always gather lots of dead wood of various thickness before lighting the fire in order to get as much heat as possible as quickly as possible. Green wood contains moisture and requires lots of heat to evaporate it (latent heat of vaporisation).

Fire Safety



It is rare that a wind is not blowing or starts to pick up as the session progresses. The fire creates a hot zone downwind of the fire and the hot zone will lengthen with increased wind speed. This is a **dangerous** area to go into as sparks are constantly being blown from the fire and the wind speed can suddenly increase as well without warning. Smoke inhalation is also possible, undesirable and must be avoided.

The wind can also shift and change direction and the hot zone moves with it as shown by the **orange** areas either side of the prevailing wind hot zone.

The **dotted red line** determines a much larger no go zone than the hot zone created by the prevailing wind. You should, therefore, **never** approach the fire in a direction that will take you into this no go zone.

This establishes that you should only feed the fire from the upwind side where it is much cooler. Material to be burnt should be taken around the fire for possible processing and feeding.

Best Practice

Even if someone arrives early and gets a fire going,it will still be small at the start of the session. Most material brought to the fire will need processing into fire sized portions before it can be lifted and placed onto the top of the fire. Towards the end of the session, the fire will be much bigger and hotter so there will be less need for processing and more material to burn can be placed onto the fire in a given time. This means that a trickle of material should be brought to the process area to begin with and this will gradually increase throughout the session until everyone will be dragging material near to finish time. Material should only be brought to the fire at a rate that it can be consumed. Piling material into a heap only makes it more difficult to process as the heap has to be un-piled. Always drag material to the process area by holding the stub end and leave it with the stub end pointing towards the process area where it can be picked up and dealt with. When feeding the fire, always lay the fire sized lengths onto the top of the fire with the stub ends pointing back to the feed area. The stub ends help shield you from the heat of the fire and act like a fireguard. This practice enables you to work close to the fire. Heat rises so all the material needs lifting onto the top of the fire and not placed at the side where there is insufficient heat.


A Good Fire with Stub Ends towards you

Bad Practice


Tripping Hazard

You would never do this, would you! This branch thrown onto the fire is a serious tripping hazard and only a small piece in the middle will burn. Another bad practice is to throw material onto the fire from the opposite side. Not only have you entered the no go zone, you may hit the person feeding the fire in the face. I write from experience!


The Ring

Processing material into fire sized portions may seem like unnecessary additional work at the time but it prevents problems later on. Only material laid on top of the fire will burn and rest remains unburnt forming a ring around the fire. This distances the feeder from the fire and leads to more material at the side of the fire making matters worse. If the ring builds up too high then material can bridge the fire and effectively put it out. This happened on our first visit to Watlington Hill when all the unburnt material had to be pulled off the fire and the fire relit. A waste of time and effort!

The picture on the left shows another example of what happens when material is placed at the side of the fire - it does not burn. This heap was too big to move with a fork and had to be un-packed piece by piece. This means the material was moved twice and it took half an hour.


Fire Diameter

Fires may rage and generate a lot of heat, but how wide does a fire grow to? The fire on the right has a diameter of five feet, the length of the long handled manure fork. When the fire was small it was three feet in diameter. So the fire has increased its diameter at the tortoise pace of about one foot per hour. Any material over five feet in length would not be fully burnt and some of it would be lying to the side of the fire. A few twiggy bits will always lie there and can be easily scooped up with a fork. Large amounts left at the side take a considerable time to get onto the fire.

Final Safety Thoughts

When working a fire or near a fire, always wear some head cover. A peaked cap will protect your head from stray sparks and the peak can be used to shield your face from the fire thus protecting eyes. Fires are continually being supplied with material so working in the process areas or feeding the fire is hard work. Remember too that you need to lift the material onto the fire which can be hard on the legs and back. If a fire receives too much material it may become head height making it hard to lift the material onto the fire. In this case, let it die down and have a rest. At the end of the session, all fires and not just those where there are public rights of way must be identified by hazard tape placed round the fire. Animals will avoid it but children may not so mark it.

Enjoy the fires and the occasion spud roast, but above all be safe.

Source: R. Godfrey, April 2026