



FIRE MANAGEMENT

Controlling Wildfire

For most of the last century, all fires in national parks were suppressed. The first park wardens were hired in 1909, primarily to fight fires. Today, fire managers recognize the ecological importance of fire and use a variety of methods to restore it to park landscapes.

Wildfires that threaten people, structures, rare natural resources and adjacent lands will continue to be extinguished. Fire specialists also use preventative techniques to decrease the risk of fire in developed areas. Fire protection is still a key responsibility for national parks.



funnelled upward by canyons and gullies. Fire also burns differently in different types of vegetation. Understanding and predicting fire behavior is vital to successful fire protection.

Responding to Wildfire

During the fire season, the fire danger is constantly monitored. It can change rapidly. Information on weather, lightning strikes and fuel conditions is received daily in each park. Computer models help fire specialists predict where fires will start, how quickly they will spread and how best to control them.

How fires burn

Three elements must be present for a fire to burn: Fuel + Oxygen + Heat = Fire. The forest provides fuel, oxygen is in the air and heat comes from a lightning strike or is introduced by humans. The basic principle of fire suppression is to remove one or more of these elements and the fire will not burn. For example; putting water on a fire reduces the heat, covering it with dirt cuts off the oxygen and building a fire line separates the flames from the fuel.

Fire behavior depends on a number of factors. Hot, dry weather and strong winds can whip up an intense, fast-spreading fire. Fires burn more quickly up slopes than on flat ground and are

As the fire danger increases, crews prepare to respond quickly if a wildfire occurs. The number of fire patrols along roads or by aircraft increases. Campfires may be banned.

If a wildfire occurs in a suppression zone, an initial attack crew is sent out. Parks Canada employs 15 three-person initial attack crews. These highly trained, mobile crews quickly extinguish most fires while they are still small. Some initial attack crews are capable of rappelling from a helicopter into rugged terrain. If initial attack does not extinguish a fire, plans for a sustained attack are developed. In some cases, a specialized Fire Command Team is called in to assist local efforts.



Fighting fires is difficult and dangerous work. One of the first steps is to construct a control line. The fire crew clears vegetation and digs a trench wide enough to prevent flames from jumping across. This is combined with natural barriers like cliffs and streams to surround the fire. The crew may actually "fight fire with fire" by burning off fuels between the control line and the main fire. Once the fire is under control, fire fighters extinguish smoldering materials. Finally the area is patrolled, sometimes for weeks, to make sure the fire is out.

Air support is often needed. Helicopters are used to sling equipment and drop water or retardant on the fire. Water bombers may also be used.

Some parks use less than full-force suppression for certain fires. For example, a fire in Wood Buffalo in 1994 was controlled along flame fronts that threatened adjacent lands. However, one side of the fire was allowed to burn into the park for ecological reasons. This approach is taken only if it is safe and ecologically beneficial to do so.

To increase fire-fighting efficiency and reduce costs, Parks Canada co-operates with other federal, provincial, and territorial agencies. Joint training sessions provide an opportunity for fire crews and managers to continually upgrade their skills.

Crews, equipment and aircraft are shared and can be moved quickly to where they are most needed. Many parks also have joint protection plans with neighbouring agencies.

An Ounce of Prevention

The ability to quickly extinguish fires is essential. Equally important are preventative measures that make dangerous fires less likely to develop and spread.

One of the most effective techniques is "fuel reduction". Prescribed burning and mechanical thinning are used to remove some of vegetation around developed areas. This reduces the amount of material available to burn in a fire.

Park residents can also take steps to reduce losses from fire. For example; buildings can be constructed, located and maintained to make them more fire resistant.

Into the future

Fire is an essential part of nature. It can also threaten property, adjacent lands and public safety. Parks Canada's fire management program ensures that fire continues to shape park environments while providing fire protection where necessary.