BRITISH COLUMBIA
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Coastal Fire Centre wildfire News

- hot topics in Wildfire on the Coast

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DID YOU KNOW—

The Province has provided an additional 16 Wildfire Management Branch staff provincially to accelerate the completion of CWPPs.

Coastal has four staff members in Fuels Management this winter, which is two more than last year at this time.

Forest Fuel Management

Forest Fuel management, also known as Wildfire Hazard Reduction, involves the modification of the forest structure to reduce forest fuel accumulations. The goal of fuel management is to reduce fire intensities, reduce potential for crown fires, improve wildfire suppression success, improve firefighter safety and improve forest resilience to wildfires. The focus of fuel management is to modify forest fuels to help protect structures and lives in the interface fire zones.

As a result of historical practices, our forests have denser canopies, lower canopy base heights and higher surface fuel loadings. These conditions adjacent to homes and communities may result in the potential for increased hazard to homes, communities and infrastructure in Wildland/Urban areas.

The B.C. government is acting on interface wildfire issues, implementing all the recommendations of the 2004 Filmon review and the Auditor-General's report on interface fire management. No single agency alone, however, will be able to resolve the fuel management issues facing the province. It will take time and co-operation.

The Coastal Fire Centre is working in conjunction with local governments, First Nations, the forest industry, the public and other stakeholders to reduce the threat.

Through the Provincial Strategic Threat Analysis, all interface areas in B.C. were identified and mapped. Then, through the Union of B.C. Municipalities, local governments (including First Nations) are able to apply for funds to help pay for interface wildfire mitigation. The funds help pay for the preparation of Community Wildfire Protection Plans (CWPP) and to conduct on-the-ground fuel treatments.

The province also provided technical expertise and labour. Fuel management specialists worked one-on-one with communities to provide specialist knowledge and fire fighting crews conducted fuel management in priority areas while not suppressing fires. Over the fall, crews seasons were extended to reduce the build-up of forest fuels near communities.

Current plans are to accelerate Fuel Management activities in 2009/2010.

Spacing or Thinning

Spacing involves the removal of entire trees from the stand. This removes a portion of the forest canopy, lowering canopy closure or reduces crown bulk density (volume of crown material), thereby reducing the opportunity for crown fires to move quickly and easily from tree to tree, through a stand.

There are many types of thinning operations. Thinning from below removes intermediate and suppressed trees from the lower crown and is a common treatment for fire hazard reduction.

This can reduce crown fire initiation and potential wildfire spread. It also reduces ladder fuel, increasing the separation of surface and crown fuel.

Spacing standards will vary with tree species, diameter and height, slope, terrain and other factors. Thinning can remove trees to create specific densities and patterns and may allow certain species to thrive in an area such as deciduous trees (ie. Maple or Alder).

Pruning

- Pruning involves the removal of the lower dead and live branches on trees, often referred to as ladder fuels.
- Pruning is often conducted after spacing, when the lower branches are too close to the surface fuels.
- Pruning raises the crown base height in a stand, reducing the opportunity for surface fires to move upwards into the tree crowns.
- Care must be taken not to harm the trees by stem scarring or removing too much of the crown.
- At least 40% of the live crown should be retained to maintain a healthy, vigorous tree.
- The prescribed pruning height can vary with crown closure, surface fuel volumes and slope (normally 2 metres in height is a FireSmart standard).

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The Role of Fuel Management Specialists

There is no one forest treatment, or combination of treatments, that will be successful in all forest stands. Each forest is a unique ecosystem, with its own forest health, past forest management and fuel loading issues and it must have its own plan. Many stands require multi-layered plans, years apart, to achieve the desired results and minimize site damage.

Among the many considerations for fuel management planning and implementation are water quality, soil conservation, wildlife habitat, threatened or endangered species, forest health, aesthetics and timber production.

Ultimately, the role of fuel specialists is to determine what fuel treatments are most effective for a given area. In some areas, the use of fire may make a situation worse ecologically, while in others, fire may be a useful tool to restore and maintain ecosystems in a desired state. In still other areas, the volume of fuel is so great that some fuel should be removed mechanically before fire can be safely restored.

Not only must Fuel Management specialists take into account what does exist but must also factor in worst-case scenarios—they must ask the question: what if…? This year in B.C. we had the tenth driest summer since 1941, and fuel specialists are evaluating how this affected wildfires. They are evaluating how to mitigate fire damage in the coming years and accelerate the principles of FireSmart.

Fuel management specialists must therefore take into account the ecological effects, the vulnerability of soil to erosion caused by prescribed versus wildland fire, and the likelihood of erosion impacting watersheds. And they must answer to a number of organizations and levels of government on why they chose the method of fuel treatment they did. Studies have found that the amount of controversy that arises from a fuel treatment program is directly proportionate to how well the initial evaluation was done or explained. Clear descriptions of the fuel management plan and its goals, can engender the support of a whole community.

Surface Fuel Reduction

- Reducing the amount and organization of the surface fuels can reduce frontal fire intensities and in some cases, fire rate of spread.
- The finer, dry fuels such as needles, twigs and cured grasses and brush should be targeted for surface fuel treatments. These are the fuels that ignited easily and burn readily, allowing wildfires to spread.
- Mechanical methods include crushing, chipping, shredding, chopping. Woody material can then be chipped, used for bioenergy, or burned in piles.
- Reduced surface fuel can be accomplished by many means, including prescribed fire, mechanical piling and burning, mulching, chipping and hauling, or a combination of these methods.

Timber Harvesting

Harvesting of timber has a practical but limited use as a method for reducing crown closure and volume of timber in the Wildland/ Urban Interface.

It is very effective in areas of dead trees, such as those attacked by pine beetle. Site impacts can be severe on sensitive soils, near riparian areas or landing locations where the timber is decked before removal. Very careful site assessments and strict harvesting prescriptions are necessary to ensure success.

In multi-aged stands, harvesting should target the intermediate aged trees, leaving the veterans and healthy regeneration.

In evenly aged stands, or those prone to windthrow or root rots, patch cuts are an effective method of timber removal.

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Prescribed Fire

A prescribed fire is an intentional fire planned and managed by fire specialists. A "prescription" describes the conditions and procedures necessary to burn safely and effectively. Wildfire hazard abatement is one of the major reasons to use prescribed burning.

Change by fire is natural and biologically necessary to maintain a healthy forest. The suppression of fires in the early part of the last century created not only an unnatural ecosystem but a dangerous one as well, building up fuels that would have been normally burned off in stages.

Prescribed burning when applied in a skilful manner, under specific weather conditions, within a specific area with clearly defined goals and trigger points, can be safe and yield excellent results. The advantage to fire fighters is that areas where prescribed burns have been previously conducted result in wildfires that are less dangerous and more easily controlled.

From an effectiveness and cost perspective a prescribed burn is far more affordable and affords less risk to animal habitat, soil quality and the site. Chemical and mechanical treatments are both expensive and have associated environmental risks.

A prescribed fire is an effective but complex tool and only a certified fuel management specialist should conduct a burn. The proper tools, a complete assessment, with attention to all factors, specifically the weather, the terrain and other risks associated must be taken into account.

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Pine Beetles

One of the challenges faced by Coastal Fuel Management specialists is to deal with the Mountain Pine Beetle and Western Pine Beetle infestations. While both are native to British Columbia and have been around for as long as there have been pine trees in B.C., the current attack on our pine forests is reaching an epidemic. The Canadian Forest Service has estimated that at the current rate of spread, 80 percent of western Canada's mature pine trees will be killed by the Mountain Pine Beetle by 2013.

Pine beetle infestations that are adjacent to communities represent an increased wildfire hazard and in the Coastal Fire Centre these locations include areas near Pemberton, Manning Park and at the head of Bute Inlet in the Coastal Mountain Range.

Excessive needle drop increases surface fuel loadings. Lodgepole pine are known for their small, shallow root systems. They do not stand long after tree mortality in exposed areas. Blowdown can start to occur shortly after tree mortality, especially in windy, exposed locations or in areas with shallow soils.

Trees starting to fall over add to ladder fuels and surface fuels. Fallen or partly fallen trees can impede access to sites, producing and/or creating hazards for fire fighters. This wildfire hazard created by dead, falling trees can last for decades after the trees die.

For fuel management specialists, the best options for dealing with this threat is to remove the wildfire hazard by harvesting, piling or burning the dead and infested trees.

The beetle-killed forest stands pose a long-term wildfire hazard to the public and housing developments in the Wildland/Urban Interface. Harvesting or large-scale timber removal are the best methods for reducing the wildfire hazard in beetle-killed stands adjacent to communities.

The Tally Continues

The Coastal Fire Centre continues to tally the time and effort taken to manage wildfires within its boundaries this fire season.

Exceptionally hot and dry weather forced the Fire Danger Rating to climb early in the spring, and forest fuels remained dry over the summer. Extensive lightning storms started in June, and were virtually continuous in July and August. The D'arcy weather station near Pemberton had the second highest Build Up Index (a measure of the fuels available to fire) in the province.

The fire centre responded to about 1900 reported incidents, which resulted in 534 wildfires, over twice as many as our seven year average. No structures were lost within the Coastal Fire Centre, despite evacuation orders and alerts in Pemberton and Bella Coola. The Coastal Fire Centre is proud to have kept almost 92 percent of it's fires to below four hectares in size.

Every day during fire season, all activities and costs are estimated to the best of the ability of the people involved. Each helicopter hour flown, piece of equipment, fuel purchase and person's wages, accommodations and food costs are calculated and added together on each fire. All these cost estimates flow into the fire centre, and are gathered together to give the best estimate of costs for the day. Daily cost estimates are expected to be within 10 percent of the actual cost paid by the end of the fire season.

So far this year, the Coastal Fire Centre estimates that just over $49 million has been spent fighting wildfires within its boundaries. About $41 million in invoices has been processed to date.

Today in Coastal

Fire Danger Rating

Low