

## **Portneuf Project Area Westside Ranger District, Caribou National Forest**

### **The Role of Fire**

Fire is natural and a vital ecosystem process (White and Pickett, 1985) and is necessary for sustaining Forest ecosystems, which can all, in some way, be characterized as “fire-dependent” (Atkins *et al.* 1999). Fire serves many roles in the ecosystem including reducing biomass, recycling nutrients, regenerating vegetation, and maintaining diverse landscapes (Kozlowski and Ahlgren 1974, Parsons 1981). Fire has played a central role in the Forest’s ecosystems. The origin of Englemann spruce/subalpine fir, lodgepole pine, Douglas-fir, and most quaking aspen stands on the Forest can be traced to some form of disturbance. Historically, that disturbance was usually fire (Barrett 1994). Fire suppression in these communities can affect their susceptibility to insects and diseases and lead to changes in species composition, structure, and diversity (Atkins *et al.* 1999).

In the early 1900s, particularly after the dramatic wildfires of 1910 in northern Idaho and Montana, public concern for protection from forest fires brought about an era of aggressive fire suppression. The trend has continued to this day, with the effectiveness of suppression increasing greatly with the advent of aerial capabilities and improved road access in the years following World War II (Pyne 1982). Effective fire suppression has led to the overwhelming majority of the vegetation on the Caribou National Forest in mature age-classes as shown in Table 1.

**Table 1**

<b>Vegetation Type</b>	<b>Mature and Old Age-Classes</b>
Sagebrush	50%
Utah juniper	80%
Rocky Mountain juniper	50%
Curlleaf mountain-mahogany	>70%
Limber pine	>60%
Douglas-fir	>60%
Quaking aspen	>60%
Lodgepole pine	>60%
Engle mann spruce/Subalpine fir	>70%

## **Fire Occurrence within the Portneuf Project Area on the Caribou National Forest**

Historically, wildfire is the disturbance agent believed to have had the largest impact on the species composition and structure of the vegetation within the Portneuf Project area (Barrett 1994). Fire regimes in the Portneuf Project area are predominantly mixed-severity and lethal-severity regimes that periodically remove most or all of the existing vegetation from the sites affected. The annual acreage that historically burned on the Portneuf Project area is estimated to be approximately 300 acres, on average. Since southeastern Idaho was settled, however, most of the natural vegetation has been by affected by livestock grazing and fire suppression. The Forest Service has had a policy of aggressively suppressing wildfires within the proclaimed boundary of the Forest. The following information is based on fire occurrence within the Portneuf Project area from 1970 to 2001.

Since 1970 there have been 4 lightning-caused wildfires and 8 human-caused wildfires that have burned approximately 30 acres within the Portneuf Project area. The wildfires have ranged in size from 1/10<sup>th</sup> of an acre to approximately 15 acres before they were extinguished. From 1970 to 2001 the annual acreage burned by wildfire (both lightning and human-caused) on the Forest has been approximately 1 acre, on average. In the past 32 years wildfires have burned substantially less than 1% of the area of the Portneuf Project area that is estimated to have burned under historic conditions.

Since 1970 there has been 1 prescribed fire within the Portneuf Project area that has been used to treat approximately 100 acres. The purpose of the prescribed fire was to improve wildlife habitat, to provide more herbaceous diversity and provide a more diverse mix of shrubland age-classes, to increase forage production, and to reduce hazardous fuels. Since 1970 the total acreage on the Portneuf Project area that has burned from all causes is approximately 130 acres. In the past 32 years fires from any source have burned approximately 1% to 2% of the area of the Portneuf Project area that is estimated to have burned under historic conditions.

As a result of fire suppression the amount of woody biomass has increased, both live vegetation and dead plant material. The Portneuf Project area has become more homogenous and less diverse (Barrett 1994), which has increased the risk of uncharacteristically large wildfires. If the trend of withholding fire, or some other form of disturbance, continues the risk of uncharacteristically large wildfires is expected to increase.

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