Fire is natural

The boreal forest is dominated by spruce trees, which are highly flammable and have evolved to burn regularly. Each year lightning starts about 100 fires in Alaska and burns hundreds of thousands to over a million acres. Over time, boreal forest animals and plants have adapted to the effects of these frequent fires. In fact, fire is necessary in order to return nutrients to the soil and create openings in the canopy so new plants can grow.

Why should we let fires burn?

Many wildfires in Alaska are extinguished due to concern for human safety, private property, and commercial timber. However, fire in the boreal forest is necessary for habitat and wildlife diversity. Fires that are not allowed to burn cause an unnatural aging of the forest and heightened risk of large fires during dry summers.

But Smokey Bear says!

Smokey's message, "only you can prevent forest fires," is aimed at accidental, human-caused fires and is accurate in that sense. Humans usually cause fires near populated areas where fire can threaten life and property. People should prevent accidental human-caused fires. People cannot prevent naturally caused fires.

Using prescribed fire

Prescribed fires are intentionally set by fire professionals under specific conditions. Some prescribed fires are used to reduce forest fuels. This helps prevent potentially dangerous fires in the future. Other prescribed fires are used as a management tool to enhance wildlife habitat.

Similar to wildfires, prescribed fires warm the soil, release valuable nutrients, and stimulate regeneration. They also leave standing and fallen dead trees behind — a valuable resource to many wildlife species.

Fire and wildlife

Do animals die in fires?

While most animals escape fire by fleeing or hiding underground, some animals die. Even so, the animals that survive usually thrive and multiply in the years and decades after the fire.

Impacts of fire depend on:

1. **The speed of the fire:** Slow moving fires generally burn more deeply into the ground, consuming the organic soil. The 'spring back' of plant life is usually slower, and sometimes wildlife hiding underground perish.
2. **Time of year:** Fires in early spring (before most young are born) or late in the summer (when most young are mobile and independent of parents) are much less likely to cause mortality.
3. **Animal species:** Large mammals (bears, moose) can easily outrun most fires and birds can fly away. Smaller mammals can move to wet areas or go underground.

Questions?

For more information about fire and wildlife check out the habitat enhancement pages on our website. Habitat — Restoration & Enhancement — Habitat Enhancement.

http://alaska.gov/go/I4KF

This brochure was revised in 2020.

Fire and Wildlife

in the boreal forest

Division of Wildlife Conservation

Forest succession

The gradual change in plant and animal communities after a fire, or other disturbance, is called **succession**. Succession in the boreal forest usually begins with the growth of small, herbaceous plants and culminates in old spruce forests. Each successional stage supports different wildlife. As habitat conditions change, an area becomes less suited for some wildlife species and more suited for others. Many species require multiple stages of succession to meet their needs.

Northern hawk owl

Fires leave standing dead trees (snags) used by many nesting birds, insects and other wildlife. For example, three-toed woodpeckers thrive in burned areas because they eat bark beetles found in dead trees.

Red fox
Vole
Snowshoe hare
Moose
Ruffed grouse
Sharp-shinned hawk
Northern goshawk
Flying squirrel
Crossbill
Great horned owl
Spruce grouse
Marten

0 – 5 years
First green plants

5 – 25 years
Shrubs, then small trees

25 – 50 years
Birch or aspen

50 – 150 years
Spruce grow up under leafed trees

150 – 300 years
Spruce

Disturbance

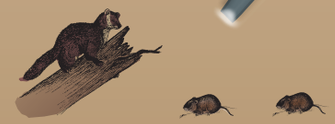
Habitat mosaic

Fires burn erratically, depending on wind, weather, vegetation and season. Some areas burn completely while others remain untouched. The result is a patchwork of habitats called a mosaic. This mosaic is key to plant and animal diversity.

Edge effect

The border where two plant communities (successional stages) meet is an **edge**. Edges support the greatest diversity of wildlife and many animals use them as travel routes and hunting grounds.

Fallen trees provide a runway under the snow and cover for marten and other small animals and insects.



Flammable plants

Some members of the heath family, like blueberry and Labrador tea, contain a flammable resin that cause ground fires to spread and burn quickly in the boreal forest.