Government of
Northwest Territories

Wildfire's natural role

Background on wildfire and its place in the forest

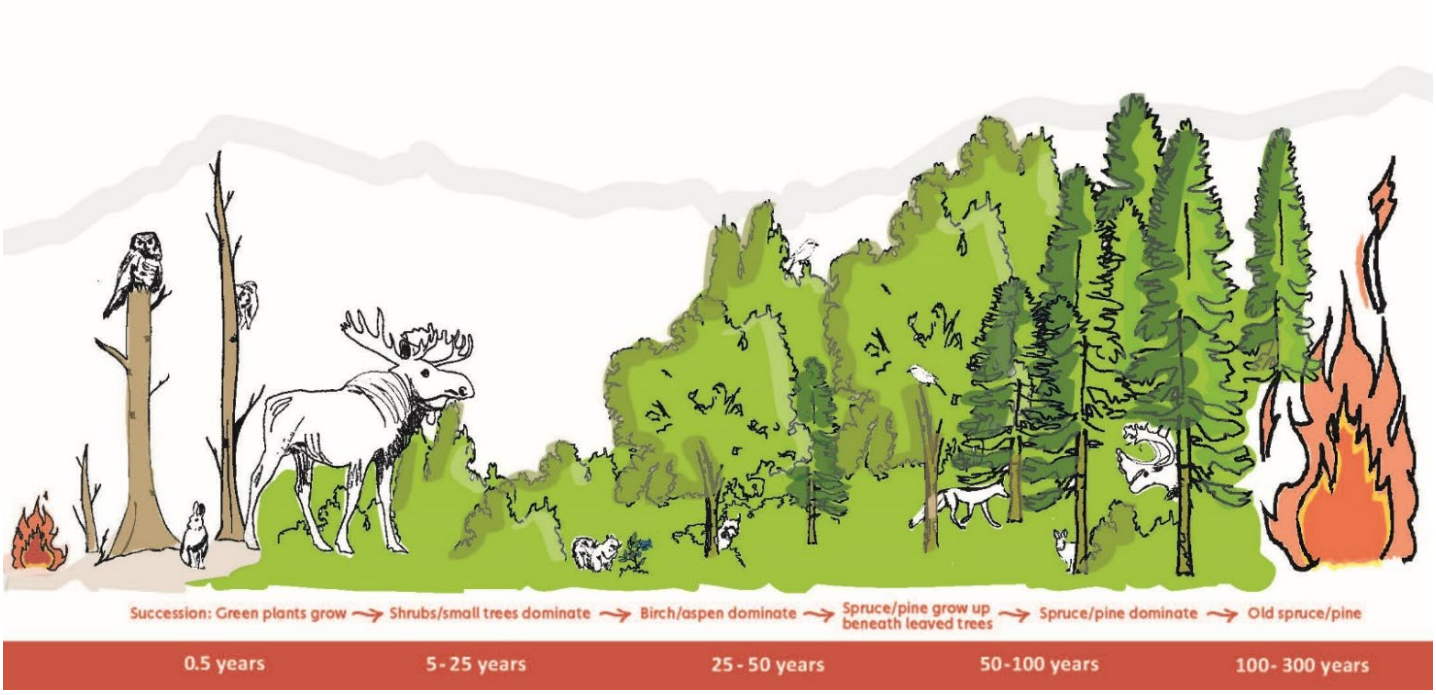
While wildfire can be very concerning when it threatens the things we care about, it's an important, natural part of the forest. It plays an essential role in regeneration of the boreal forest, and supports diversity of plants, animals, and other species in the NWT.

Wildfire in the boreal forest

- The boreal forest, which covers 29 of the NWT's 33 communities, is largely made up of spruce, pine, tamarack, aspen, and birch trees.
- There is an average of around 200 lightning-caused fires each year that burn a little less than 1-2% of the territory's forest.
- For thousands of years, animals and plants have adapted to the effects of wildfire.

Wildfire and forest succession

- Wildfire is critical to "forest succession" – **meaning gradual change in plant and animal communities after a disturbance (like wildfire) over time.**
- Succession starts right after a wildfire – with grass and small plants growing back quickly.
- From there, shrubs and small trees begin to dominate the area.
- Larger trees like birch and aspen grow back next (both resistant to wildfires).
- Then, spruce and pine (both highly flammable) grow beneath those leafy trees – eventually growing tall and dominating the area.



- The forest is now "mature". A lot of fuel builds up in the area, which will eventually lead to wildfire when lightning strikes.
- When wildfires burn, they help release the seeds of pine and spruce trees, return nutrients to the ground, and the cycle starts again.

Wildfires and their role in preventing larger fires

- This process of burning and regrowth naturally thins out forest fuels that build up – like twigs, leaves, brush, trees, and dead wood – over time. This natural cycle means more, lower intensity burning over time.
- When that natural cycle plays out, there are fewer large, difficult to control fires.
- People can disrupt this cycle when we fight fires without regard for the important, natural role they play in our forests. You stop the
- **Fighting fires can change the natural way forests grow in areas where fire is natural - which usually means multi-aged forests of varying sizes and species composition.**
- Fighting fires that aren't threatening people, communities, or other critical values can lead to build up of fuels. This can make fighting future fires difficult as they tend to be larger and more difficult to put out.

Wildlife and wildfire

- Wildfires – especially those burning with extreme severity in part caused by built-up forest fuel – can affect wildlife over the short term. However, during a fire, most wildlife can escape by leaving the area or hiding underground. **They've been doing so for thousands of years.**
- Burned areas can be important habitat for some animals at different stages of regeneration. When a forest burns, it opens it up – letting in sunlight that allows for growth of grass and shrubs, and making it easier for some predators to find prey.
- When nutrients return to the soil after a wildfire, it provides nutrients for new plants like aspen, berries, lichen, and roses – which are good food for many animals.
- Animals like snowshoe hare require early stages of forest succession where they can reach willow, birch, and aspen branches. They are in-turn eaten by predators – like lynx and owls.
- After several years of regeneration, moose see burned areas as excellent habitat with lots of forage to eat, and provides opportunities for local harvesting of animals in these recently burned areas.
- The impact of wildfire on caribou populations depends on how severe a fire is, and how much of the forest, and the lichen within it, burns during a fire.
- **Natural fire cycles resulting in a mosaic of different forest ages are better for caribou than large areas that have burned.**
- Since fire doesn't usually burn the whole forest in its path, there are often areas of preserved older forest habitats – even after a very large fire – since wildfires tend to burn erratically.
- We **do consider the potential impacts of fire on important wildlife habitat** when we make decisions on wildfire response.

Wildfire and forest health

- Pests are a major issue for forests – causing the death of trees and other plants.
- Wildfire plays a critical role in keeping pests at-bay in the Boreal forest.
- When wildfire comes, it kills pathogens (things that cause sickness) and insects and pests which may be carrying them.

Recognizing the natural role of fire in management

- Prescribed fire – planned fires which are started by fire management agencies with a specific goal in mind – is a tool used to mitigate wildfire risk by bringing fire back to the landscape in places we want it to keep wildfires out of areas we don't want it to go.
- Indigenous peoples have used this tool for thousands of years.
- Prescribed fires are a way to model the natural role of fire more closely in places that role has been disrupted.
- They are not easy – there are limited windows, a lot of planning, and some risk in taking them on.