



SPECIES  
PROFILE

# Boreal felt lichen

It may not be as photogenic as the panda bear,  
but the boreal felt lichen is definitely more at risk

**N**icknamed the panda bear of lichens due to its rarity, the boreal felt lichen is an ancient and critically endangered species found in a few pockets of cool, moist coastal forests of Atlantic Canada. But, unlike the giant panda, the boreal felt lichen isn't photogenic. It is blueish-grey and leafy, with the sides curled up to reveal a white underside, and it attaches itself to the trunks or branches of trees. The species provides a valuable source of nitrogen for forests. The boreal felt lichen is also proving to be incredibly valuable as an indicator of air quality and climate change.

#### A SYMBIOTIC RELATIONSHIP

Lichens are one of nature's most interesting marriages; a tight-knit association between two organisms: fungi and algae. This association is so tight that most of the time, neither one can grow or reproduce without the other. Together, they are quite literally better than the sum of their parts.

The fungus partner in the relationship benefits by gaining access to food made by the alga through photosynthesis. The alga profits from having a protected place to live within the fungal filaments and increased access to moisture and minerals.

But new research published in the journal *Science* this July suggests that lichens may also include a third organism: a new kind of yeast. While the discovery still needs to be explored further, it underscores just how fascinating lichens are.

#### A SENSITIVE SPECIES

Lichens rely on airborne nutrients and water, and are incredibly sensitive to environmental changes. This sensitivity hurts the boreal felt lichen, especially in Nova Scotia, where it's declined by close to 35 percent over 10 years. The decline is linked to prevailing winds that bring pollution from central Canada and the eastern U.S., which lands in Nova Scotia as acid rain. Pollution isn't the only threat; the boreal felt lichen is threatened by logging, and is also sensitive to climate change. It is being studied as an indicator species—one that offers an indication of the health of its environment.

Like many of the Earth's species threatened with extinction, the boreal felt lichen lacks charisma, and may go gently into the night

#### THINK GLOBALLY

Because of the sensitivity of the boreal felt lichen, conservation strategies must go beyond the local. As an example of unsuccessful attempts at conservation, Sweden tried to conserve its boreal felt lichen by protecting the only remaining stand of trees that supported the lichen. A neighbouring private property owner did some clearcutting, which changed the microclimate in the area, and Sweden's last boreal felt lichen subsequently disappeared.

In Canada, the boreal felt lichen is protected under the *Species at Risk Act*. The species is listed as critically endangered by the International Union for Conservation of Nature. Boreal felt lichen is found on NCC properties in Port Joli, Nova Scotia, and Salmonier, Newfoundland.

Like many of the Earth's species threatened with extinction, the boreal felt lichen lacks charisma, and may go gently into the night, doing its vital, but mainly uncelebrated part, right up until it disappears. 🐼



## FACT SHEET

### SCIENTIFIC NAME

*Erioderma pedicellatum*

### SIZE

Usually 2 to 5 cm in diameter; has occasionally been seen up to 12 cm in diameter.

### POPULATION

The species survives with an estimated 15,000 to 20,000 individuals in Newfoundland, has been reduced to just over 315 in Nova Scotia and is believed to have been wiped out entirely in New Brunswick. There were boreal felt lichen populations in Norway, but sadly they are now extinct. It also occurs in Alaska.

### POPULATION TREND

A recent article in the scientific journal *Botany* predicted by 2040 the already-rare boreal felt lichen will be reduced by half.

### COSEWIC STATUS

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) lists the Atlantic population of boreal felt lichen in Nova Scotia and New Brunswick as endangered. The boreal population in Newfoundland is of special concern.



## DID YOU KNOW?

The boreal felt lichen is a species believed to be 400-million years old.