

The vanishing lichen is our fault

Once plentiful organism almost extinct due to human growth

ENDANGERED PERSPECTIVE

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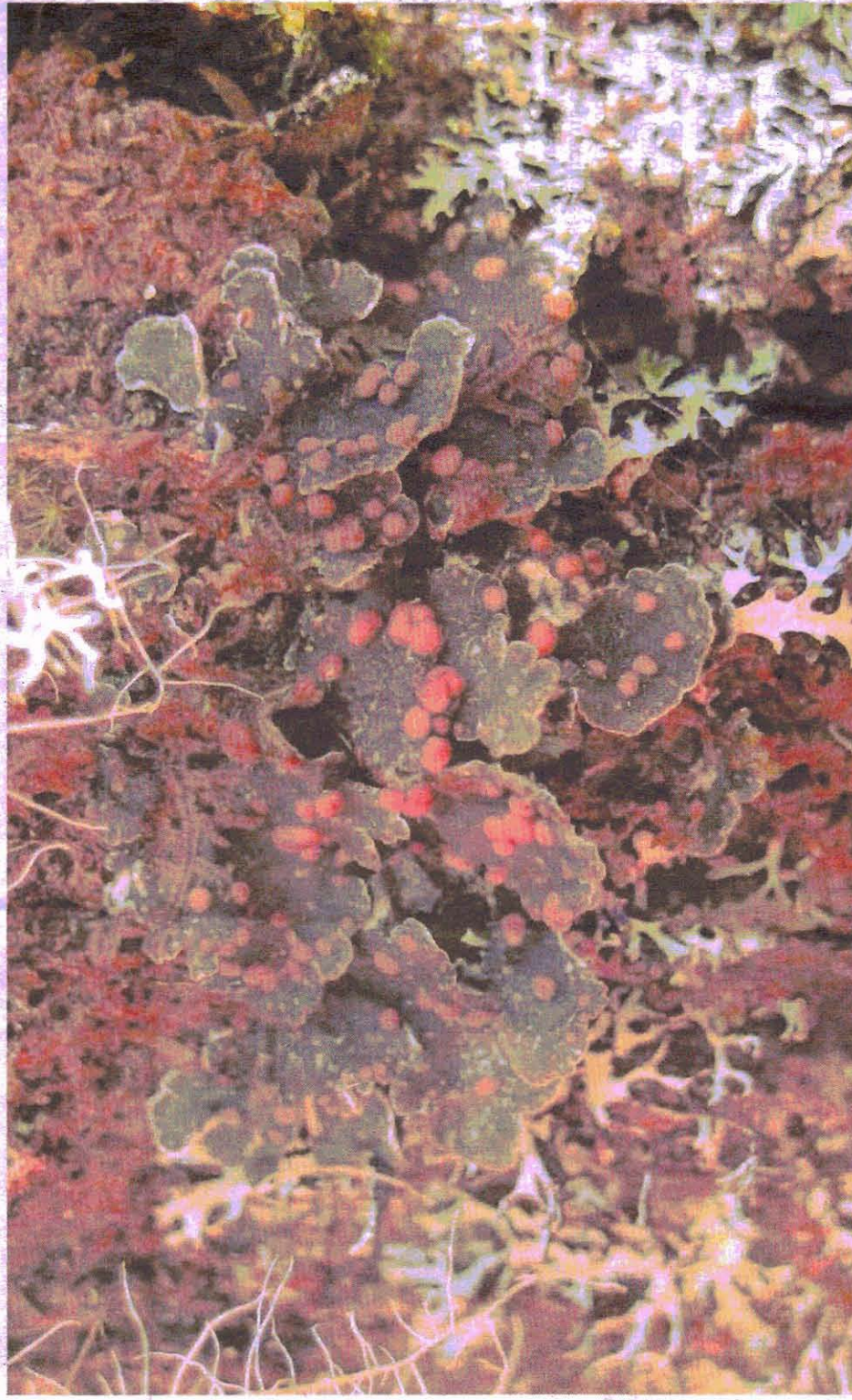
Only recently have I looked into the lives of lichen, a brand of plant very few of us have given a moment's consideration, even as it crunches beneath our boots while we hike the Nova Scotian shoreline.

These lichen take many shapes, such as that of a haphazard mushroom sprouting on the side of a tree or a flattened, colourful oval adorning the face coastal rock. But there's one shape you'll see considerably less often than all the rest: a lichen with characteristic upturned lobes of olive green revealing an underbelly of sharp white, and small red discs marking its surface.

This would be the boreal felt lichen, and with each passing year there seem to be fewer and fewer left to find.

All lichen are made up of two separate organisms: a species of fungus and algae growing together in mutual benefaction — and the boreal felt lichen is no exception.

Its unique pairing is known to



A glimpse of the boreal felt lichen is shown here. The plant is fighting an uphill battle against human interference.

als were known in Nova Scotia, all clustered together in a patch of Halifax County.

Both provincially and federally, this species was declared endangered and surveys began, searching its ideal habitat in hopes of finding more.

Results were encouraging.

From 2003-2012, boreal felt lichen has been discovered in pockets across Nova Scotia's east-

have been discovered since 2012, but their slow decline continued, compelling researchers Robert Cameron and Brad Toms to follow this trend to its mathematical conclusion, estimating that in 25 years this population will have declined 49 per cent if significant action is not taken.

The significant action in question seems obvious enough to me, though it's easier said than done

Then there's air pollution and its persistent companion acid rain, issues which have been tackled somewhat in recent decades but which are far from being solved.

I see no remedy here except to encourage our move toward a green economy and the end of fossil fuels, for our sake if not for this lichen's.

It's been said that boreal felt lichen is an excellent indicator of

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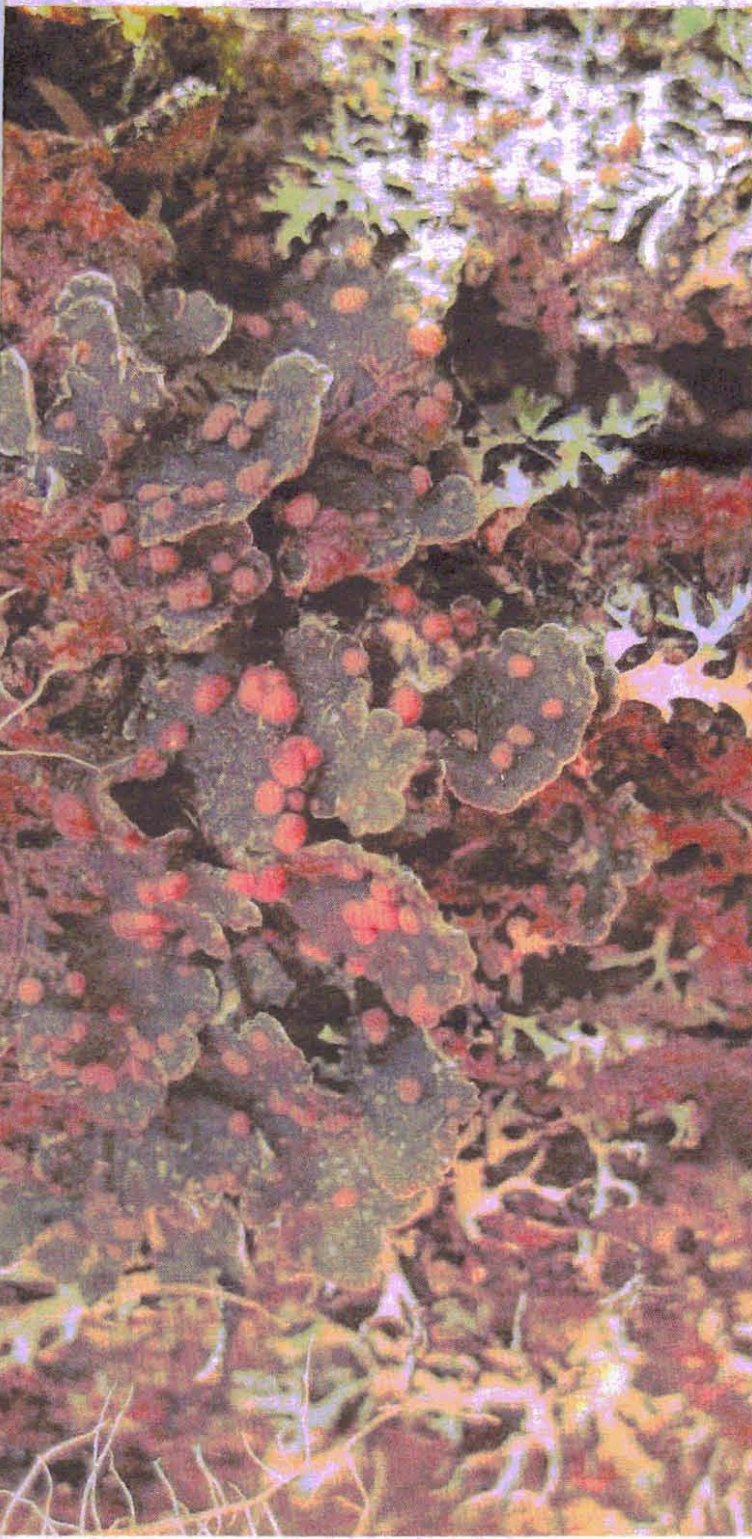
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All lichen are made up of two separate organisms: a species of fungus and algae growing together in mutual benefaction — and the boreal felt lichen is no exception.

Its unique pairing is known to have occurred in Norway, Sweden, Siberia, Eastern Canada and now Alaska, but in recent decades the majority of these populations have begun to collapse and a few have disappeared entirely.

In Atlantic Canada, this particular lichen is native to the cool, coastal coniferous forests of New Brunswick, Nova Scotia and Newfoundland, growing primarily on the trunks and branches of balsam firs.

But lichen are fragile creatures,



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intolerant of changes in their humid homes and especially vulnerable to air pollution.

So when the emissions of an industrialized eastern seaboard began blowing into Atlantic Canada several decades back, the boreal felt lichen underwent a significant decline which has continued to this day.

Among other things, the widespread burning of fossil fuels fills our atmosphere with nitrous oxide and sulphur dioxide which manifest themselves as acid rain, particularly in the Maritimes.

From 1980-2000, we watched these migrating toxins reduce boreal felt lichen populations by 90 per cent across Nova Scotia and New Brunswick, a process exacerbated by habitat loss to forestry.

Those in New Brunswick were destroyed altogether.

When the dust settled around 2003, only a handful of individu-

als were known in Nova Scotia, all clustered together in a patch of Halifax County.

Both provincially and federally, this species was declared endangered and surveys began, searching its ideal habitat in hopes of finding more.

Results were encouraging.

From 2003-2012, boreal felt lichen has been discovered in pockets across Nova Scotia's eastern shore, in Shelburne, Halifax, Guysborough, Richmond and Cape Breton counties.

Three hundred twenty eight individuals were accounted for in that time, the hiding masses of a globally endangered species, and in no way did these individuals change that designation.

As it would turn out, they were dying almost as quickly as they could be found.

Of those 328 individual lichen, 56 withered and died in the course of these surveys. More

have been discovered since 2012, but their slow decline continued, compelling researchers Robert Cameron and Brad Toms to follow this trend to its mathematical conclusion, estimating that in 25 years this population will have declined 49 per cent if significant action is not taken.

The significant action in question seems obvious enough to me, though it's easier said than done. Our forestry practices need to account for these lichen and, more importantly, for their habitat.

You don't need to cut down a boreal felt's host tree in order to kill it; you need only remove surrounding forests enough to alter the local climate.

Clear-cutting in lands adjacent to Sweden's last remaining boreal felt lichen is thought to have been the deciding factor in their disappearance.

Then there's air pollution and its persistent companion acid rain, issues which have been tackled somewhat in recent decades but which are far from being solved. I see no remedy here except to encourage our move toward a green economy and the end of fossil fuels, for our sake if not for this lichen's.

It's been said that boreal felt lichen is an excellent indicator of air quality, considering how vulnerable they are to atmospheric contamination.

This should speak volumes to the damage we're doing to ourselves and others, damage which would be invisible were it not for these vanishing lichen.

To help them is to help ourselves, so if you ever come across this hopelessly rare species, be sure to take a deep breath. Your lungs would be in good company.