

What are Lichens?

Lichens, often mistaken for mosses, are complex organisms composed of fungi and photobionts, typically algae and/or cyanobacteria. They exist in diverse environments and benefit from a mutualistic relationship, with fungi providing structural support, UV protection, and moisture retention, while photobionts provide nutrients through photosynthesis.

Bear Creek Lake State Park supports a wide population of lichen that can be found in a variety of places, including on trees, rocks, fences, trails, and even the side of buildings!



Some of the different types of lichen found here.



Importance of Lichens

Lichens have many uses for both animals and humans such as nesting material, background camouflage, and winter food. Some lichens are also utilized for their antibiotic properties in things such as toothpaste and deodorant. In times of famine, Native Americans would eat lichen, although not all lichen should be consumed as some are poisonous. Different pigments and dyes are also made from lichen. Because lichen absorbs its nutrients from the air, they are often used as bioindicators. Bioindicators are living organisms that can tell us a lot about their environment.

Bear Creek Lake provides a place for lichen to thrive and contribute to not only their environment but also ours.



<https://home.nps.gov/mora/learn/nature/lichens.htm>

To learn more about lichens

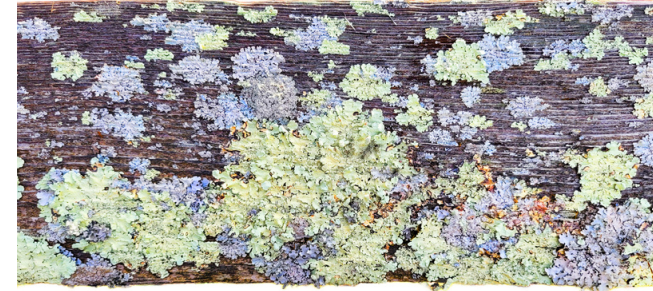


<https://www.fs.usda.gov/wildflowers/beauty/lichens/index.shtml>



Bear Creek Lake State Park
22 Bear Creek Lake Rd.
Cumberland, VA 23040
804-492-4410

BEAR CREEK LAKE STATE PARK



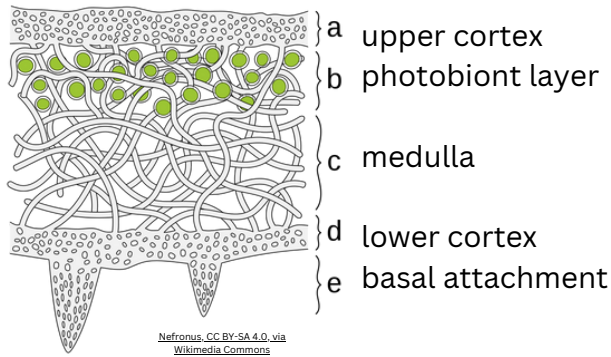
Let's Get Lichenized!

VIRGINIA STATE PARKS

www.virginiastateparks.gov

Structure of a Lichen

Lichen cross-section



Lichens have a unique structure consisting of tightly woven hyphae (fungus filament) in the upper and lower cortex, and a photobiont layer where alga and/or cyanobacteria are located. When wet, the cortex becomes transparent, allowing the alga color to become more vibrant. The medulla is made up of loosely woven hyphae, and the basal attachment occurs through rhizines or a holdfast. Rhizines are multiple hyphae extending from the medulla while a holdfast is a singular central peg extending from the thallus (the body of a lichen).



Growth Forms of Lichen

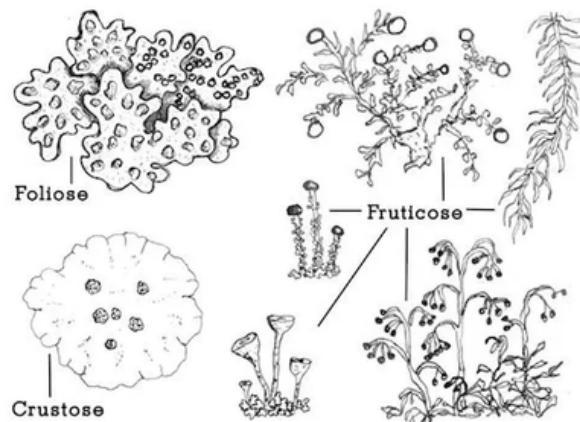
There are three main growth forms of Lichens: foliose, fruticose, and crustose.

Foliose lichen, with their flattened thallus and two distinguishable sides (top and bottom) that are often different colors, may look like clusters small leaves or be full of bumps and ridges laying mostly flat against a surface of which they can be peeled off.

Fruticose lichen can have a bush or hair like thallus with branches that are either flat or cylindric and are attached to a surface at only one point using a holdfast.

Crustose Lichen often grow in patches or speckles pressed like a crust against a surface.

You can often find multiple different forms of lichen growing together in the same place.



nps.gov

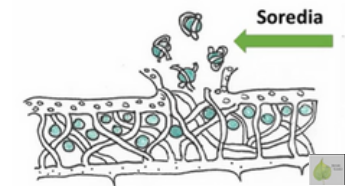
Lichen Reproduction

Lichen can reproduce 3 different ways, both sexually and asexually.

1) The fungus of some lichen is able to grow fruiting structures called apothecia which release fungi spores with then need alga to lichenize with (become a lichen).

2) Some lichen, instead of growing apothecia, are able to simply release soredia which are small granular masses containing both the fungi and photobiont cells.

3) Fragmentation is another way lichen reproduce. This happens when a small piece of the lichen breaks off and continues to grow into a new lichen.



Apothecia

