

## February EcoQuest: Looking for Love(ly Lichens)

In the month of love, lichens make a strong pitch for the forest's most romantic residents. Lichens are a group of symbiotic organisms, each composed of two or more species partners: a fungi paired with an algae or cyanobacteria. Biologically unorthodox, when these species come together, they create their own unique form that is designated as its own species, and named after the primary fungal partner. They are totally co-dependent, scientifically speaking. In these partnerships the fungi provide structure and the photosynthetic species (algae or cyanobacteria) provide energy.

In addition to being biologically fascinating, they are also ecologically important. They provide food, shelter, and even habitat for various other species. For example, birds will use lichens for building their nests—and tiny tardigrades (aka water bears) live within lichen like a real bear might live in a forest. Lichens perform ecosystem services like carbon capture, nutrient cycling, and can act as pioneer species, able to obtain nutrients from sheer rock and sunlight.

### What is an EcoQuest?

EcoQuests, part of the Denver EcoFlora project, challenge citizens to become citizen scientists and observe, study and conserve the native plants of the City via iNaturalist, an easy-to-use mobile app.

### How Do I Get Started?

1. Download the iNaturalist app or register online at [iNaturalist.org](https://www.inaturalist.org).
2. Take photos of the plants in bloom that you find on your daily neighborhood walk. It is ok if they are weeds! But avoid taking photos of cultivated plants in gardens or in your home.
3. If you are concerned about revealing the location of sensitive organisms or observations at your own house, you can hide the exact location from the public by changing the "geoprivacy" of the observation to "obscured."

Beard lichens are a specific genus of lichens, called *Usnea*. Although lichens are notoriously challenging to identify, this genus is quick to spot—look for tangled masses of silvery-green threads hanging from tree branches and bark. This genus is prolific in its range and grows from the Arctic to the tropics. *Usnea* is often confused with Spanish moss (which actually isn't a moss or a lichen and doesn't grow in Colorado). To identify *Usnea*, pull apart the outer sheath of its main stem. If there is tiny, white central cord inside, with the pull of an elastic thread—it'll be *Usnea*. If not, it's likely a different genus.

*Usnea* and other lichens are known for their valuable traits. The species in *Usnea* aren't edible but are widely regarded for their medicinal uses, especially for antibacterial and antifungal properties. Lichens are also known as bioindicators, meaning they can be used to monitor changes in environmental health. Some lichens, including the beard lichen, are sensitive to common air pollution contaminants, like sulfur dioxide. This means that they can only thrive in areas with good air quality.

We still have a lot to learn about lichens, and documenting where they grow can help us better understand air quality in the Front Range. In February, contribute to our understanding of beard lichens by sharing your observations on [iNaturalist](https://www.inaturalist.org).



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### What is the Goal?

The EcoFlora project is designed to meaningfully connect citizens with biodiversity, and to assemble novel observations and data on the metro area's flora to better inform policy decisions and conservation strategies.



Photo by Scott Dressel-Martin