

Physco Hunt

Welcome to the PhyscoHunt, a Citizen Science initiative integrated in a project that explores genome duplication in plant evolution. The goblet moss (*Physcomitrium pyriforme*) is our model organism. If you want to contribute to our research: **FIND**, **REPORT**, and **SEND** samples. Here is all you need to know:

1. Find

You will identify this moss by its pear or goblet-shaped capsules growing on top of the leafy generation. A hand lens will be helpful.



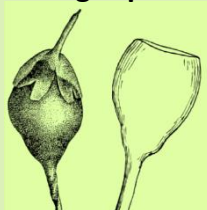
Calyptra a delicate pointed hood that covers each young capsule

Capsule Symmetrical, green and pear-shaped when young, turning brown and goblet-shaped when they ripen, open, and release spores

Stalk $\frac{1}{4}$ to $\frac{3}{4}$ inches (0.5 to 2 cm)

Leafy generation small tuft of leaves low on the ground

Young capsules



Ripe capsules



Actual size



Where? The goblet moss grows in a variety of habitats, often next to populated areas. Pay attention to disturbed moist soil in roadsides, gardens, lawns, floodplains, riverbanks, abandoned croplands, or pastures. We welcome your finds from anywhere in North America and Europe.

Physcomitrium pyriforme
"Goblet moss" or "bladder moss"



When? This moss has a short life cycle and is only noticeable during part of the year, mostly during spring but sometimes also in the fall, so keep your eyes open for suitable habitats in both seasons.

2. Report

In order to report your findings, we need the **location** (with coordinates, if possible), **date**, and a **picture** to confirm the ID. When taking pictures consider appropriate light, focus and zoom



ID your observations as "goblet moss", "bladder moss", or *Physcomitrium* and they will be added to the PhyscoHunt project

The preferred way to do this is through the **iNaturalist** app



Getting started with iNaturalist
<https://www.inaturalist.org/pages/getting+started>



PhyscoHunt project
<https://www.inaturalist.org/projects/physcohunt>

Alternatively, you can report them via email (see contact below)

3. Send

To take your contribution one step further you can **send** your samples for us to culture and include in our research project.

Samples for culture should contain viable spores. Collect them at the right stage.

Too early! Capsules are still developing, bright green with a calyptra, or still closed and green, with immature spores. Try again after a few days.

Too late! Capsules are open and spores have been released. Can you find younger colonies around?



Capsule development takes 2-4 weeks

Right on time! Collect samples when capsules are brown but still unopened. Spores will be ready and plentiful

Preparing a sample for us is simple: (1) Collect the sample annotating date and coordinates, (2) allow it to air-dry indoors for 48 hours, (3) gently wrap it in a paper towel, (4) place it in an envelope, and (5) mail it to the address shown below. You will receive a reward in return.



Not just goblet moss

You will likely find other species in the goblet moss habitats



Bonfire moss (*Funaria hygrometrica*) belongs to the same family of goblet moss, but its capsules are asymmetric and pendant, and their stalks longer



Silver bryum (*Bryum argenteum*) has a leafy generation with a whitish or silver shine that is not seen in the goblet moss colonies





Redshank (*Ceratodon purpureus*) develops spindle-like capsules with bright red stalks and calyptrae

With more than 12,000 extant species, mosses are the most diverse plant group after flowering plants, and they are key components in many ecological processes. Despite their small size, they are approachable to all nature enthusiasts

Contact info

For questions, feedback, and to report goblet moss via email, contact Rafael Medina:

 rafaelmedina@augustana.edu

 [@bryomedina](https://twitter.com/bryomedina)

Send your goblet moss samples for culture to:

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Funariaceae Research Group website: <http://funariaceae.uconn.edu>

Image credits: Mary Ade, Bernard Goffinet, James Lindsey, Rafael Medina, caasi saari, and Andrew Simon

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This document was prepared by Mary Ade and Rafael Medina

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