What to do if you find it:

Make an observation

The first thing to do is to **record your observation**. We prefer to use the iNaturalist app for that (visit www.iNaturalist.org to learn more), but you could also upload your observation to Mushroom Observer (visit www.MushroomObserver.org). The QR code to the right will take you to the Fungal Diversity Survey (FunDiS for short) website to explain how to contribute to the project.

fundis.org/protect/take-action

The best thing you can do is take *lots* of photographs and notes. Typically, smartphones will automatically georeference any photos taken, but it is good practice to note your exact location, preferably with GPS coordinates, and what trees or other habitat features are nearby. For example, was the mushroom growing from decaying grass and humus, or from bare soil? Did it have a particular smell?

Collect a specimen

If you are in an area where it is allowed and have any necessary permits, **we strongly urge you to create a vouchered collection**. This means a dried specimen for deposit in a herbarium, where researchers can access it for things like DNA sequencing. If you don't know how to do this, please see:

fundis.org/sequence/sequence/dry-your-specimens

In California, collecting mushrooms is usually allowed in National Forests **with a permit**. Permits can be obtained at the headquarters of the National Forest you're visiting, and are usually inexpensive or free. However, restrictions vary among the individual National Forests, so make sure to find out the specifics when picking up your permit. State and County Parks generally do not allow mushroom picking, but regulations vary, so make sure to check your destination before you go out. In Oregon and Washington, most State and Federal lands allow collecting up to a gallon without a permit, but again, regulations vary, so check ahead of time. In BC, collecting is allowed on Crown land without a permit, but it's illegal to pick mushrooms in a provincial or national park.

Don't foget to look for other mushrooms and fungi while you're there! Since you've already got iNaturalist open, why not record your other finds?

Most mushrooms are like fruit: picking an apple from an apple tree doesn't hurt the tree. In the same way, **harvesting mushrooms does not generally hurt the mycelium of the fungus**. We do still recommend leaving some mushrooms behind, and not picking perennial mushrooms, like brackets and conks.

Who to contact

If you think you've found this mushroom, and you're not sure about any of the above, such as how to report the find, whether you can collect it, or what to do with it once you have collected it, please contact us!

WestCoast_Rare@fundis.org

Habitat

The Live Oak Waxcap grows in **association with oaks**, providing them with nutrients and water, and receiving sugars in return. This species has only been sighted a handful of times, so if you're in **California oak woodlands**, keep an eye out for this handsome waxcap, and help further our understanding of this species' range.

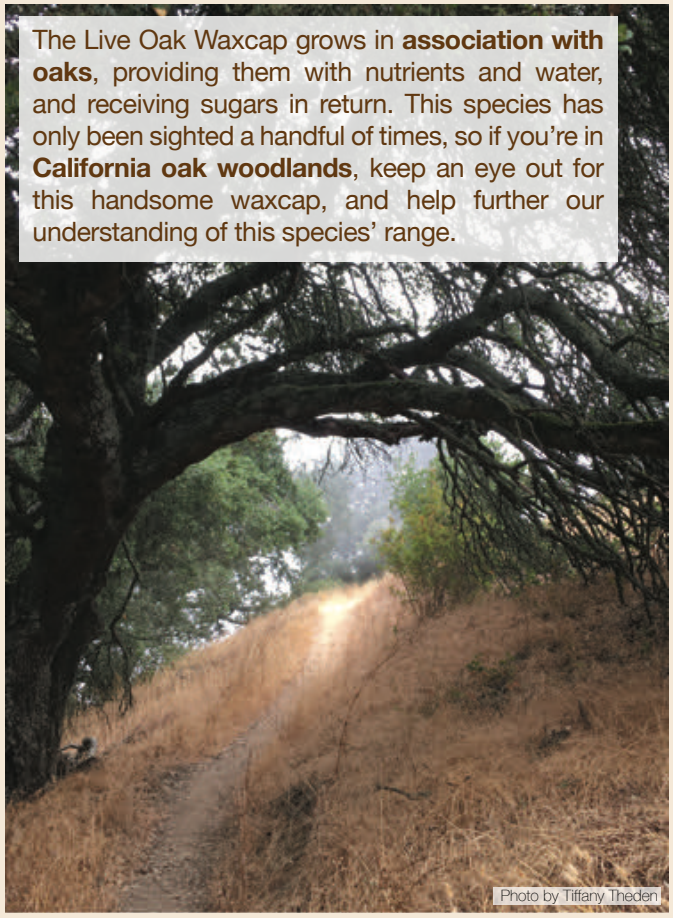


Photo by Tiffany Theden

More information

Siegel N & Schwarz C. 2016. *Mushrooms of the Redwood Coast: A Comprehensive Guide to the Fungi of Coastal Northern California.* Ten Speed Press: pg. 281

Siegel N. 2021. *Hygrophorus nemoreus* var. *raphaneus*. The Global Fungal Red List Initiative.
iucn.ekoo.se/iucn/species_view/116602/

Mushroom Observer (4 obs.):
mushroomobserver.org/name/show_name/43462

iNaturalist (2 obs.):
inaturalist.org/taxa/514102-Hygrophorus-nemoreus

This species has been proposed for the **IUCN Red List of Threatened Species**, *but has not yet been assessed, accepted, or published.*

The Live Oak Waxcap

Hygrophorus nemoreus var. *raphaneus*

Photo by Alan Rockefeller

RARE

Status: ***RARELY COLLECTED***

The Live Oak Waxcap is a large **orange** mushroom with a **sticky to dry cap**, thick, waxy gills and a sturdy stem. It **smells like cucumber** and has a **radish-like taste**. It fruits during the wet winter months in the **live oak woodlands** of southern California northwards into Santa Cruz county, but is rarely reported. Did you see it by any chance? Is it able to survive in the increasingly dry California oak woodlands? What else did you come across while walking among the oaks?

FUNGAL DIVERSITY SURVEY

This pamphlet prepared by:
Tiffany Theden, Else C. Vellinga, Alex Mayberry & Roo Vandegrift


Photo by Noah Siegel

Description

The Live Oak Waxcap has an **apricot to orange-cinnamon colored cap** up to 4.5 inches wide, and thick white flesh. The **gills are off-white to pale orange-yellow**, and reach the stem or go down a bit onto it. The stem is up to 4 inches long and 1.5 inches wide, and quite sturdy; it is white with some **pinkish apricot tinges**. A key identifying feature to help distinguish this species from others is its scent and taste: The mushroom **smells of cucumber**, and the **taste is reminiscent of radishes**.

Hygrophorus nemoreus grows in Europe; the Californian variety (v. *raphaneus*) is distinct, and is waiting for someone to officially make it a species!

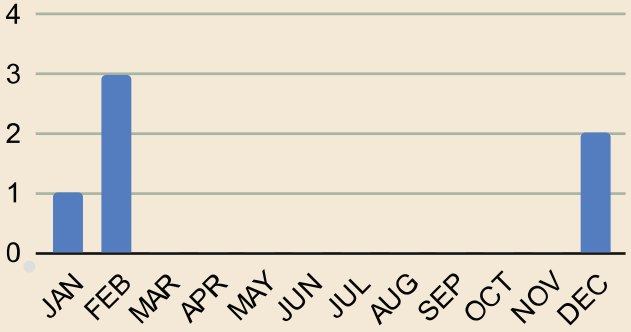
What else could it be?

Other waxcaps in the oak woodlands of southern California are either **white and very slimy** or have a **brown to brownish cap**. *Cuphophyllus pratensis*, the **Salmon waxcap**, is smaller than *H. nemoreus* var. *raphaneus*, with a **dry, orangy cap** and distinctly decurrent gills. It **lacks the smell and the taste** that are typical for *H. nemoreus* var. *raphaneus*.

CAUTION: Never eat wild mushrooms without a confident identification! Contact Poison Control if you think you have eaten a poisonous mushroom: 1-800-222-1222

When & Where?

Look for this species in the **Winter**, first appearing in December in the north to February in the south.



Data from iNaturalist & Mushroom Observer

The Live Oak Waxcap is known from **Santa Cruz county** in California southwards into **Baja California**. While it has predominantly been spotted in central and southern California, look for it anywhere there are live oak woodlands!