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## Upcoming Events - Save the Date!

**October 31- November 3, 2022 - [8th California Oak Symposium](#),**  
San Luis Obispo, CA

**November 1-3, 2022 - [Cal-IPC Symposium](#) - Invasive Plant Management from  
Cities to Wildlands, Virtual.**

**November 16-17, 2022 - [CFPC Annual Meeting](#), UC Davis - Student Community  
Center or Virtual.**

**January 19 - March 16, 2023 - [California Forest Stewardship Workshop](#), Virtual  
and in-person February 4th. This is for Napa.**

## How to Identify Common Small Decay Fungi

by Charlie Barnes, US Forest Service, Forest Health Protection

I recently read an article from an astrophysicist about the cycling of carbon. It discussed how every carbon atom on this planet has always existed, and that every carbon atom in living cells used to be in something else. What's the main driver in the recycling of carbon on our planet? Fungi.

Downed logs and fallen branches are all over most forests. The carbon in all this wood and the accompanying leaves is mostly broken down by saprophytic fungi. There are two main types of wood decay: brown-rot and white-rot. Fungi that cause brown-rot decompose the cellulose and hemi-cellulose, leaving the brown lignin behind. Naturally, the white-rot fungi are breaking down the lignin, leaving behind the white cellulose and hemicellulose. Only recently was it proven that white-rot fungi can use lignin as a carbon source and don't simply degrade it to get to the cellulose and hemicellulose (del Cerro et al. 2021).

When walking along trails, we frequently see woody debris sprouting little clumps of white or tan-colored decay fungi.

These little decay fungi are often called "LBJs or Little Brown Jobs" and are mostly ignored. However, these fungi are important white-rot saprophytes that decay the dead woody material and recycle carbon. To help identify these fungi we need to look underneath at the spore producing surface. There are three basic "underneath surface" categories for these fungi: ones with pores, ones with gills, and ones with a smooth pore layer. Common genera in these categories are *Trametes* species (with pores), *Schizophyllum* species (with gills), and *Stereum* and related genera (with a smooth spore surface). In California, there are two other common genera that have a smooth spore surface *Aleurodiscus* and *Xylobolus*, but these three genera are very difficult to tell apart without DNA sequencing.

Please note this is not meant to be a taxonomic key to these groups, but simply an easy way to recognize basic differences between these important and very common white-rot fungi.



Fig. 1. *Stereum ostrea* on Pechanga tribal Lands. Photo: C. Barnes, US Forest Service.

### They look alike

The natural color variation in these fungi is similar but also, environmental wear and tear can make these fungi look even more similar as they age and wither.



Fig. 2. [Trametes ochracea](#) or “true turkey tail”. Photo: Noah Siegel.



Fig. 3. *Stereum ostrea*, or “false turkey tail”. Photo: The Mushroom Observer.



Fig. 4. *Schizophyllum commune*. Photo: [First-nature.com](#).



Fig. 5. [Trametes versicolor](#). Photo: Indiana University.



Fig. 6. *Stereum ostrea* on Pechanga tribal lands. Photo: C. Barnes, US Forest Service.

### How to tell them apart

To determine the different genera, you need to look at the pore layer; *Trametes* species (with pores), *Schizophyllum* species (with gills), and *Stereum* and related genera (with a smooth spore surface).



Fig. 7a. *Trametes* species have pores underneath. Same fungus as Fig. 5. Photo: Indiana University.



Fig. 7b. *T. versicolor*, Photo: Amadej Trnkoczy, Bay Nature. Same fungus as Fig. 5. Photo: Indiana University.



Fig. 8. The pore layer of *Schizophyllum* species has gills on the underside. Photo: [UC Santa Barbara](#).



Fig. 9a. *Schizophyllum* sp. from the Cleveland National Forest. Photo: C. Barnes, US Forest Service.



Fig. 9b. *Schizophyllum* sp. from the Cleveland National Forest. Photo: C. Barnes, US Forest Service.



Fig. 10. *Stereum ostrea* on Pechanga tribal lands. Photo: C. Barnes US, Forest Service.



Fig. 11. *Stereum ostrea*. Photo: Missouri Department of Conservation.



Fig. 12. *Stereum hirsutum*. Photo: Amadej Trnkoczy, Bay Nature.

## References

Del Cerro, C.; Erickson, E.; Dong, T.; Wong, A.R. and others. 2021. Intracellular pathways for lignin catabolism in white-rot fungi. *Proceedings of the National Academy of Sciences*, 118(9): e2017381118. <https://doi.org/10.1073/pnas.2017381118>.

When buying firewood for camping or home heating this fall, remember to buy wood sourced local to where you will be using it, helping to minimize the spread of pests and diseases - **Buy It Where You Burn It**. For a list of local firewood dealers, go to **firewoodscout.org**.

Sincerely,

The California Forest Pest Council



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