

Explore the Watershed

Turkey Tail on the Trail

The rainy season is well upon us, and with it comes the return of the many fungal species throughout the watershed!

Fungi and humans have a long and storied relationship. Humans use fungi for food (both cultivated and wild), medicine, pest control, natural dyes, as a hobby. Fungi can also be harmful to humans, causing diseases for humans, crops, timber and structures.

Fungi are an incredibly diverse kingdom of life that is all around us, and that we share more in common with than we do plants. They come in many forms, but all have eukaryotic cells and are heterotrophs, which means that they acquire their energy from the digestion of molecules --unlike plants, which use photosynthesis. Like us, fungi use cellular respiration to extract energy from their nutrients, and because of that they require oxygen to live and release carbon dioxide into the atmosphere.

Most fungi secrete digestive enzymes into the environment around them, a process that can be thought of as an external digestion of nonliving organic matter. Because of this, we can understand how fungi take on one of the primary roles of decomposition and nutrient cycling in an ecosystem. Not all fungi form mushrooms, but the ones that do can be categorized into forming either mutualistic symbioses with plants, or parasitic relationships with other organisms.

Trametes versicolor, also called Turkey Tail, is a polypore mushroom that can commonly be found in the Sausal Creek Watershed. Polypore mushrooms are important decomposers of wood, as they recycle minerals and nutrients from dead trees and slowly release them back into the ecosystem for use by other forest organisms. *Trametes versicolor* causes a white rot in wood, meaning that the fungus decays the lignin in the wood and leaves behind the cellulose. If it were not for fungi like Turkey Tail and their role as decomposers, dead wood would pile up in enormous quantities in forests, causing a fire hazard.

Turkey Tail can be recognized by its growth on dead hardwoods, growing in rows or masses of shelving (*Image 1*). It has a distinguishing color pattern of dark and pale concentric zones, with a white margin and white to cream pores on the bottom. It has no stipe and has thin to moderately thick leathery flesh (*Image 2*). For more information on identifying turkey tail, please consult a mushroom identification guide, such as *Mushrooms of the Redwood Coast*, by Noah Siegel and Christian Schwartz¹.



Image 1, Bernard Spragg, Flickr Public Domain



Image 2, Martin Grimm, iNaturalist Public Domain

Turkey Tail is not considered to be an edible mushroom species, but it has long been considered to be a medicinal fungus in cultures around the world, notably used in traditional Chinese medicine to treat pulmonary diseases². In Japan, extracts from *T. versicolor* are approved for usage in cancer treatment, with few adverse events being reported³. Polysaccharide compounds isolated from Turkey Tail have been shown to improved immune function in patients with certain cancers when used alongside with chemotherapy at Memorial Sloan Kettering Cancer Center⁴.

While Turkey Tail can become unmistakable to identify for the seasoned mycologist, there are a number of Turkey Tail look-alikes that novices should be aware of, including:

Trametes betulina, which is similar from the top but has gills instead of pores.

Trametes hirsute, which is thicker fleshed and more evenly colored with gray, white and beige.

Trametes suaveolens, which has many similarities but a has a sweet anise odor and a finely tomentose cap.

Trichaptum abietinum, which contains larger pores that grow ragged with age, has violet coloring, and grows only on conifers.

Stereum hirsutum, which has a cap with orange tones and an orange hue to the underside.

Bjerkandera adusta, which has smoky gray pores and a light brown cap.

Many of the Turkey Tail mimics can be found in the Sausal Creek watershed and in nearby areas. It is crucial that you have a 100% positive identification of any plant or fungus before consuming it for food or medicinal use. Additionally, please keep in mind that mushroom collecting is unlawful in many places, and regulations can change.

--Jackie Van Der Hout, FOSC Intern

1. <https://www.redwoodcoastmushrooms.org/about-the-book>
2. <https://www.cancer.gov/about-cancer/treatment/cam/hp/mushrooms-pdq>
3. <https://www.ncbi.nlm.nih.gov/pubmed/6238674?dopt=Abstract>
4. <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/coriolus-versicolor>