

Oregon Native Edible Truffles

Nontimber Forest Products for Small Woodland Owners

Alicia Christiansen and Tiffany Hopkins



Credit: Tatiana Mordkovich

Their alluring aroma and flavor make truffles one of the most expensive culinary delicacies in the world. The growing conditions in Oregon are perfect for these highly nutritious and highly sought-after fungi. A simple shave of one of these truffles takes culinary dishes to a new level, and the demand for them continues to rise.

There are hundreds of native truffle species in Oregon. None are poisonous, but only four are considered gourmet edibles by humans. There are two white varieties: the Oregon Winter White Truffle (*Tuber oregonense*) and the Oregon Spring White Truffle (*Tuber gibbosum*), commonly called Oregon White Truffles. The other culinary truffles native to Oregon are the Oregon Black Truffle (*Leucangium carthusianum*) and the Oregon Brown Truffle (*Kalapuya brunnea*). Each truffle species has its own flavor and aroma profile, and even amongst the same species, subtle nuances in flavor are attributed to climate, soil and host species.

Truffles are the seasonal spore-bearing fruiting body of a perennial fungus that forms a symbiotic mycorrhizal relationship with the root systems of specific tree species. These fungi develop underground, absorbing water and mineral nutrients from the soil and passing them along to the tree. In exchange, the tree provides sugar, a product of photosynthesis, to the fungus. Truffles are a key food source for many forest animals, from squirrels to bears. Their aromas evolved to attract animals to eat them, and their spores are distributed in animal droppings.

Habitat

The conditions most suitable for Oregon White Truffles are young to early-mature Douglas-fir stands planted on former pasture lands. Oregon White Truffles are found from sea level to about 2,000 feet in elevation on the west

side of the Cascade Range and in the coastal ranges from Northern California to southern British Columbia.

Oregon Black Truffles are predominately found in the western Pacific Northwest in young Douglas-fir forests. They prefer dark, loamy soils and drainage from broad streambeds. They are more common where the understory boasts moist moss and fern and less common in Oregon grape and salal habitats. Although these truffles form throughout Oregon, they are most prolific in the Coast Range foothills above the Willamette Valley.

The Oregon Brown Truffle grows in lowland and foothill forests in western Oregon and Northern California in similar habitat as the Black Truffle, primarily west of the Cascade Range and the Coast Range foothills above the Willamette Valley. It often fruits in the same places and seasons as the Oregon Black Truffle.

Identification

Oregon Winter White Truffle (*Tuber oregonense*): When immature, the outer layer (peridium) is white to beige, sometimes with yellowish to olive to reddish-brown tints. The interior (gleba) is firm and white, with traces of marbled texture. It has little aroma. At full maturity, the exterior is reddish-brown. The surface tends to develop fissures, and the interior becomes a smoky brown with prominent white marbling. The Oregon Winter White Truffle ranges in size from a marble to a golf ball and is irregularly round to potato-shaped. Frequently it has little aroma when harvested, even if mature. The odor often develops one to three days after harvest and is described as a complex mixture of garlic, spices and cheese. Its odor is more intense than the Oregon Spring White Truffle.

Oregon Spring White Truffle (*Tuber gibbosum*): The outer layer of this variety is thin and nearly translucent, and is pale olive to brown-yellow with some brown mottling. The inside is firm and white when immature and brown with white marbling when mature. It is smooth but has furrows that can produce small hair-like growths (hyphae). The size and shape are similar to the White Winter Truffle. It emits a complex aroma of garlic, spices and cheese that is often undetectable at harvest.

Oregon Black Truffle (*Leucangium carthusianum*): The outer layer of the Oregon Black Truffle is coal-black and warty but can sometimes have smooth areas. The inside is firm and solid, with gray pockets of spore-bearing tissue separated by a white veining pattern. The aroma resembles a pineapple (fruity) when young, becoming increasingly pungent as it ages. It ranges from 1-5 inches across and is often potato-shaped. The Oregon Black Truffle is much less common and has more limited range than the Oregon White Truffle.

Oregon Brown Truffle (*Kalapuya brunnea*): This species is formerly described as *Leucangium brunneum*. Like the Black Truffle, it is larger than the White Truffle and has a more limited range. The outer layer is orangish-brown and granular to warty in texture. The inside is firm and solid, mostly white, with gray pockets of spores giving a mottled appearance. It has a garlicky odor.



Credit: Andrea Cairone, Unsplash

Never eat a wild truffle or mushroom unless you have identified it with absolute confidence. If in doubt, do not eat it!

Harvest

Each species has a fruiting season that indicates the best time to harvest. This is usually during the rainy season, although you can harvest truffles almost any month. Look for truffles when above-ground mushrooms of other species are abundant and ready for harvest.

Oregon Winter White: October through February

Oregon Spring White: January through June

Oregon Black: September through February

Oregon Brown: September through February

Trained dogs can smell the ripe truffles from over a hundred yards away, making them an effective and efficient way to hunt for them. Only ripening truffles emit these aromas, so truffle dogs leave immature truffles undisturbed to continue ripening. Truffles harvested before they are mature will not develop aromas or ripen to the quality expected by chefs. Truffles are only fully fragrant for about a week.

If you don't have a truffle dog, you can unearth truffles using a rake with three to five tines (like a garden cultivator). Use the rake to gently peel back the duff layer on top of the soil, then lightly rake the soil below. You do not need to rake very deep for most truffles — just a few inches will do. If you notice that small forest-dwelling animals have dug up parts of the earth, that may be a clue that truffles are nearby. Squirrels and mice may unearth a few truffles in an area, leaving a small pit behind. Pits will generally be no deeper than a finger in length, and the animals will generally only consume a few truffles in an area, leaving more to mature later. Raking around those pits to about the same depth will sometimes yield a return for your effort. After raking, *always* return the duff and litter to cover the bare soil. Like mulch in your garden, this protects roots and soil organisms by retaining moisture. Leaving soil bare will ensure the area will no longer be productive. Avoid creating large, continuously raked areas. Instead, keep raking limited to small areas where truffles are most likely to occur. Backfill holes created by raking to ensure adequate cover over any newly exposed tree roots.



Credit: Larionovao, Adobe Stock

Many truffle species are not the four gourmet edibles. Other species are often spongy, hollow or have different colors. The gourmet edibles are firm (like a pencil eraser) and solid with a marbled or speckled interior. Spongy, squishy, hollow or powdery truffles are not edible. The gourmet edibles are only found near Douglas-firs.

Because tree roots are so widespread throughout a forest, truffles can be anywhere. Low spots near rotting logs, loose soil, compacted soil, previously disturbed areas like abandoned roads and road banks, and many other locations are all possible habitats for truffles. However, areas with minimal ground vegetation near Douglas-fir trees are a great place to begin your search.

When you successfully find and harvest truffles, collect them in wax, cloth, or paper bags or baskets.

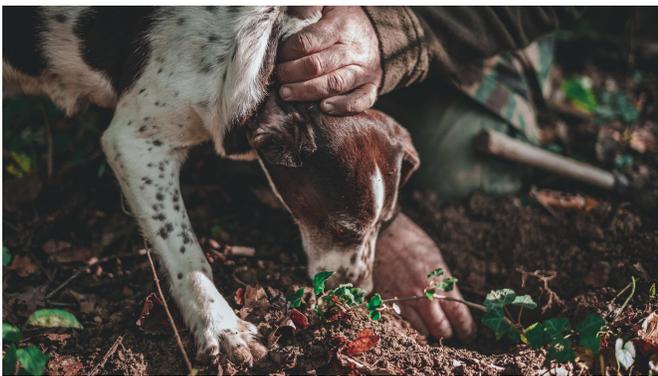


Credit: PKZ, Adobe Stock

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Storage

The proper storing of a harvested truffle is complex. That is one of the reasons for the large price tag that comes with the fungi (hundreds of dollars per pound). The goal is to keep the truffles alive so they will continue to produce their aromas until they are served. To do this, you must ensure they are in an airtight container with more air than truffles. The bottom of the container needs to be lined with paper towels to soak up any condensation. They need to be refrigerated and kept dry. One truffle should not touch another truffle. Truffles harvested at the right time will continue to ripen after you harvest them; their aroma increases in the days postharvest. The aromatic compounds in truffles bind with fats, so using a sealed container prevents other foods in your refrigerator from soaking in the strong aroma of the truffles. If these steps are taken, you can store truffles for about a week (the exact time depends on the species).



Credit: Andrea Cairone, Unsplash

Some Pacific Northwest farmers have successfully cultivated a European species of truffle, the European black truffle (*Tuber melanosporum*). If you are interested in learning more about this effort, you can find additional resources on [Oregon Native Truffles: A primer for commercial production on small forestlands in the Pacific Northwest](https://knowyourforest.org/sites/default/files/documents/Oregon_Native_Truffles.pdf) (https://knowyourforest.org/sites/default/files/documents/Oregon_Native_Truffles.pdf) and the [Know Your Forest Learning Library: Non-Timber Forest Products](https://knowyourforest.org/learning-library/non-timber-forest-products) (<https://knowyourforest.org/learning-library/non-timber-forest-products>) page.

Use

The true truffle flavor lies in its aromatic compounds, which are highly volatile. This means truffles are never cooked but rather shaved paper-thin over anything fatty and warm (eggs, meat, butter or cream sauce, etc.). The fat can soak

up the fungus's aroma more effectively than other foods. The warmth expresses the oils in a way cool foods cannot. You can also infuse fatty foods (cheese, butter, eggs) with truffle aromas by placing them in a sealed container with truffles. Still, the foods should never directly contact the truffles (for example, keep cheeses or butter wrapped loosely in wax paper).

If you are a small woodland owner with Douglas-fir trees, you may have one or more of these incredible species on your property. The best way to find out if you do is to have a truffle dog pay a visit to your land or do some exploratory raking on your own. If you would rather purchase truffles, they can be found seasonally at specialty grocery stores and local suppliers. Or you might find a local high-end restaurant serving a truffle dish to enjoy what has been touted as one of the most superior cuisine experiences anyone can have.

Resources

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About the authors



[Alicia Christiansen](https://extension.oregonstate.edu/people/alicia-christiansen) (<https://extension.oregonstate.edu/people/alicia-christiansen>)

Forestry & Natural Resources, Associate Professor of Practice

[Tiffany Hopkins](https://extension.oregonstate.edu/people/tiffany-hopkins) (<https://extension.oregonstate.edu/people/tiffany-hopkins>)

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