The Pacific Northwest Truffle Industry Matures

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Oregon black truffles, Leucangium carthusianum, have a fruitier fragrance than Tuber species, and are often used in sweet desserts. ©David Pilz

The Oregon truffle industry got off to a rocky start 30-40 years ago. Few people knew that native truffles with culinary value even existed. No dogs were trained to seek them; thus harvesters found truffles by scratching away forest duff and soil with garden rakes. Too often this disruptive method was used without landowner permission, let alone compensation. As a result, harvesters often sold unripe truffles. Few chefs would pay more than $90/kg (if that) for a product that had little aroma, so the reputation of native truffles languished.

The first glimmer of recognition that Oregon had good culinary truffles came in 1977 at the Mushrooms and Man symposium[1] where famous chef James Beard declared the Oregon white truffle to be as good as the Italian white truffle. Subsequently however, little changed within the truffle industry, even as recently as 2005. If anything, more people were raking without permission, causing conflict and perpetuating a reputation for poor quality truffles. Some of the more savvy harvesters were high grading raked truffles to sell only the ripe ones, but the practice remained wasteful and left unsightly messes and damaged tree roots in the forests.

Meanwhile, Oregon State University and the adjacent laboratories of the Pacific Northwest Research Station (USDA Forest Service) had long been recognized as a center for research on the biodiversity and ecology of hypogeous fungi[2]. The modern era of truffle research was first managed by world-renowned truffle expert Dr. James Trappe from 1965-1985 and continued under the direction of Dr. Randy Molina from 1985-2007. The Mycology Team consisted of many professors, researchers, graduate students, post-docs, and employees over these years. Critically for the Pacific Northwest (PNW) truffle industry, one of Dr. Molina's graduate students, Dr. Charles Lefevre, earned his Ph.D. in 2002 studying the ectomycorrhizae of *Tricholoma magnivelare,* the American matsutake. In a move that would reshape the regional truffle industry, Dr. Lefevre switched his focus to truffles shortly after graduation.

Applying his knowledge of ectomycorrhizae, he started a nursery (www.truffletree.com (http://www.truffletree.com/)) where he inoculated tree seedlings with European culinary truffles and sold them to entrepreneurs who braved the risk of establishing truffle plantations in this new region. But Charles and his wife Leslie Scott also had a larger vision of promoting a vibrant, sustainable, and ethical truffle industry throughout the PNW (including northern California, Oregon, Washington, Idaho, and British Columbia). To foster this vision, they established the wildly successful Oregon Truffle Festival (OTF) in 2006 (www.oregontrufflefestival.com (http://www.oregontrufflefestival.com/)). Importantly, the OTF focuses both on truffieres with European species and on the sustainable harvesting of native truffles[3]. The annual festival brings together chefs, harvesters and consumers to create a culture of quality. Central to this effort is the training of truffle dogs so that only ripe truffles will be harvested and sold. Years of truffle dog training by OTF participants have culminated during the last three years in the annual Joriad™ Truffle Dog Championship competition.

Dog-harvested Oregon white truffles (Tuber oregonense and gibbosum) for sale in January 2015 at the Oregon Truffle Festival during the Sunday Marketplace event in Newberg, Oregon. ©David Pilz

Two other organizations participated in efforts to reform the industry. Dr. Trappe founded the North American Truffling Society (www.natruffling.org (http://www.natruffling.org/)) in 1978 to enhance the scientific knowledge of North American truffles and truffle-like fungi and to promote related educational activities. Although not focused specifically on culinary truffles, the organization has increasingly become involved in promoting a sustainable industry through its educational activities and by sponsoring truffle dog training sessions. Similarly, the Truffle Association of British Columbia was founded in 2004 to promote sustainable native and European truffle industries in that Canadian province (www.bctruffles.ca (http://www.bctruffles.ca/)).

How have these ongoing efforts changed the PNW truffle industry?

- Four native culinary truffle species[4,5,6] are now recognized and commonly harvested in the PNW. These

are the two “white” truffles, *Tuber oregonense* and *gibbosum,* the “black” truffle, *Leucangium carthusianum,* and the newly named “brown” truffle, *Kalapuya brunnea.*

- PNW truffieres have been established with seedlings inoculated with three cultivated European species; *Tuber melanosporum, T. aestivum, and T. borchii*.
- Over a hundred truffieres are now established in the PNW and many have begun to produce European truffles. Yields are expected to grow as trees mature and managers improve plantation management.
- Over a hundred trained truffle dogs are now finding wonderfully ripe native truffles and restaurateurs are using them to further enhance the innovative reputation of PNW cuisine. While most native truffles are still harvested without dogs, chefs are increasing their demand for high-quality dog-harvested truffles and shifting the market towards superior harvesting practices.
- Current prices for dog-harvested PNW truffles (approximately $1400/kg)[7] are now an order of magnitude greater than original prices. This increased price adequately rewards harvesters for sustainable harvesting practices and provides sufficient income to collaborate with landowners.
- Trained dogs are greatly expanding the known range of the native culinary truffles far beyond Oregon; finding them throughout the west coast forests of their ectomycorrhizal host trees, Douglas-firs.
- The cadre of trained truffle dogs and their owners are now also available for harvesting in truffieres as their production increases.
- PNW native truffles fruit most abundantly in young Douglas-fir forests. However, thinning when the trees get too crowded has the potential to extend the period of abundant truffle production by restoring vigorous tree growth. Annual truffle harvesting might, therefore, provide small woodlot owners with the additional income and incentives needed to thin young forests and implement longer rotations between timber harvests. A range of associated environmental benefits, including healthier streams, wildlife habitat diversification, and carbon capture would result from such extended rotations.

In a world of increasingly stressed natural resources, it is heartening to recognize examples where dedicated individuals and organizations have succeeded in creating a winning strategy for all non-wood forest product stakeholders. They deserve our appreciation and we can learn from their experiences.

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