



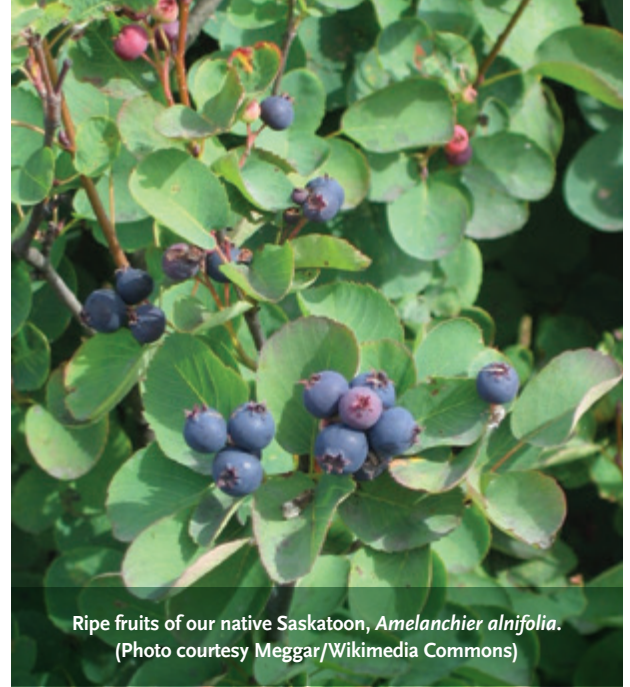
DESIGNING A NATIVE FOOD FOREST

| BY THEODORE HOSS

The Central Rocky Mountain Permaculture Institute's food forest near Basalt, Colorado.
(Photo courtesy the Association for Temperate Agroforestry; aftaweb.org)

In most Seattle gardens, a significant portion of space is devoted to plants grown for their aesthetic appeal rather than for the production of food. There are practical reasons for this. Most food gardens are annual gardens, and it takes a significant amount of time and effort to replant and maintain them each year. The process of planning the garden, acquiring plants and seeds, turning soil, sowing, transplanting,

watering, and stressing about a late freeze or summer heat dome—not to mention battling hungry bunnies and other garden interlopers—can make such an endeavor pretty daunting. There is also the fact that part of your garden might lie fallow during the colder months, which isn't necessarily a problem, but let's face it, it would be nice to have a little less bare soil further graying the Seattle winter landscape!



Ripe fruits of our native Saskatoon, *Amelanchier alnifolia*.
(Photo courtesy Meggar/Wikimedia Commons)



Ripening fruit of beaked hazelnut, *Corylus cornuta*.
(Photo by Albert Herring/Superior National Forest)

Thankfully, there is another type of garden that can produce edible snacks, while maintaining its vigor and structure through all four seasons, standing resilient in the face of summer drought and thriving year after year without repetitive planting. No, I am NOT talking about a garden populated entirely by Himalayan blackberry! Instead, consider the value of a “food forest,” a diverse array of perennial edibles planted in a

way that is meant to imitate patterns and interactions found in the natural environment.

Also called “forest gardens,” such landscapes have the aesthetic qualities provided by variably sized trees, shrubs and forbs (non-woody herbs and flowers), while also providing a multitude of culinary benefits. In this article, I will touch briefly on the basics of what a food forest design aims to accomplish, and on common

management practices for such a garden. I'll also explore a list of native edible species that have great potential for creating indigenous food forests here in the Puget Sound region.

A Layered Approach

When planning a food forest, one common goal is to reduce the number of required human inputs—such as water, fertilizer and new plants—necessary to maintain the garden in the long term. This is achieved through a variety of strategies. Food forests emphasize the use of perennial trees and shrubs, and either perennial forbs or self-seeding annual forbs. This greatly reduces the need for yearly sowing and planting.

While forest gardens vary widely in terms of the actual species they contain, they typically share a basic structure composed of seven layers: overstory trees, understory trees, shrubs, vines, forbs, groundcovers and the rhizosphere (roots and soil fungi). Plants are usually very closely spaced together but occupy different niches and vertical space, maximizing the amount of biomass in a way that is difficult to achieve with an annual vegetable garden.

This dense planting has another benefit: weed suppression. Many of the plants most commonly thought of as weeds in our region are “early succession” species, meaning that have evolved to specialize on recently disturbed sites with bare soil. In native ecosystems around the Puget Sound, such sites are few and far between; however, in most city gardens, such conditions abound—thus the constant weeding. The multiple layering and dense growth of a well-designed food forest mimics nature’s ability to reduce suitable habitats for weeds to sprout and flourish.

Also, in the interest of keeping down weeds, most forest gardens use a “chop and drop” pruning method, where snapped and dead plant matter is retained on the site—and used to fill any un-vegetated gaps—rather than removed to a compost pile or green waste bin. Along with reducing the amount of bare soil that weeds might colonize, this method—through the natural decomposition of the plant material—helps

maintain soil nutrient levels and reduces the need for fertilizer amendments.

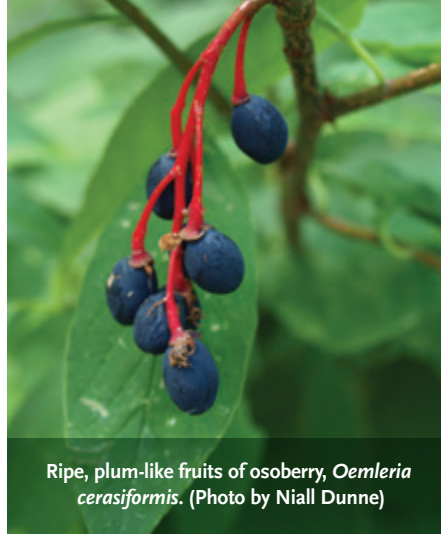
Finally, food forests are usually composed of a diverse array of species installed throughout the garden space. Having a wide array of species increases the biodiversity of animal and fungal species present in the garden, including beneficial birds and insects that help control common pests that cause problems in less diverse gardens.



Miner's lettuce, *Claytonia perfoliata*.
(Photo courtesy Novato/Wikimedia Commons)



Fireweed, *Epilobium angustifolium*, in bloom.
It's young leaves and stems are edible. (Photo by Niall Dunne)



Ripe, plum-like fruits of osoberry, *Oemleria cerasiformis*. (Photo by Niall Dunne)



The edible leaves of Redwood sorrel, *Oxalis oregana*, have a citrusy flavor. (Photo by Niall Dunne)

It also provides a more productive and varied harvest for the kitchen!

To be clear, a food forest is not a perfect, maintenance-free landscape. Occasional pruning and new plantings will be needed, as will monitoring for invasive plants and pests. However, unlike in a traditional annual garden, these demands should diminish over time with the increasing maturity of the plant specimens. Much of the work required will be concentrated in the garden's initial few years, while it establishes. After that, a successful food forest typically produces in great abundance with limited human inputs.

Right Plant, Right Place

When planning a food forest, there are nearly boundless options as to the plants you can include, from well-known fruits tree like the common fig (*Ficus carica*) to unusual edibles like dead man's fingers (*Decaisnea fargesii*). Part of the fun of designing such a garden is that the gardener gets to mix-and-match different plants they would like to eat!

The overstory tree layer of a food forest is the hardest to create since it can take decades for a tree, such as a black walnut (*Juglans nigra*), to reach mature heights. Some patience is required for a forest garden to develop actual forest dimensions. But it doesn't mean you can't have fun and enjoy a rich harvest in the meantime.

There are so many plants from around the world that could be put together to achieve the various layers of a food forest, and every

gardener and landscaper will want to incorporate their personal tastes and preferences. The most important thing is that you follow the "right plant, right place" maxim of good, sustainable gardening. Ensure the success of your plantings by providing each of them with the correct growing conditions—light, moisture and soil nutrients—they need to thrive as part of a community of plants. Many of your shrubs, for instance, will need to be able to adapt to the shady and relatively dry conditions under your trees. Plants that require sunnier, moister conditions will need to be sited at the "forest" edge. The brighter fringes of the food forest are often the most diverse and productive areas.

Though "food forest" implies a big garden space, it is really more about simulating the natural structure and cycles of a forest ecosystem—and you don't need a whole lot of garden room to do that. You can start small by dedicating one corner of your yard to edible plants and build it out as much as you wish. As you would with any mixed planting bed, install your trees and large shrubs first, and plant in around them.

A tall tree might be a cherry or pecan tree, and underneath that could go smaller trees such as Italian plum or paw paw. Dwarf selections of fruit and nut trees are handy for this layer! Under that, place yummy shrubs like blueberries, raspberries and so on. Mark out and install pathways before planting to allow movement among your crops, but also to bring in more light to the understory layers. The groundcover layer is where you can grow perennial plants like strawberry, oregano,



Fruits of red-flowering currant, *Ribes sanguineum*. (Photo by Niall Dunne)



Evergreen huckleberry (*Vaccinium ovatum*) in flower. (Photo by Niall Dunne)

and asparagus. You can get really creative in the rhizosphere with root crops, like peanuts, and in the vine layer with plants like kiwi and grapes.

Indigenous Plant Options

Describing all of the possible combinations of edible plants that could go into a food forest would be impossible for the scope of this article. As one design option, here are suggestions for plants from our own region you might use. Humans have been managing forested landscapes for food production in the Puget Sound for thousands of years! First-hand accounts and scientific research both indicate that Native American land management led to the formation of persistent food-dense pockets of forest around locations of human settlement, with a higher-than-expected concentration of edible plant species.

Indigenous forest gardens are, in fact, so resilient that many of them still exist to this day around village sites that have been uninhabited for decades—and even centuries—due to the displacement and disruption of indigenous ways of life following Euro-American colonization. There is a plethora of native edible species that can be used for a Northwest-themed home food forest. Below are some examples, with information on which layer of the food forest they can occupy.



Blue elderberry, *Sambucus cerulea*, in fruit.
(Photo courtesy M.C. De Laubarede/Wikimedia Commons)

Depending on the scale of your food forest, it can be a good deal of work in the initial phases. But it's wonderfully rewarding in the long term. For those who embark on this journey, best of luck, and happy snacking! 🍓

SPECIES	SCIENTIFIC NAME	EDIBILITY	LAYER
Oregon White Oak	<i>Quercus garryana</i>	Produces acorns in fall that are exceedingly nutritious and edible with proper processing.	Overstory Tree
Beaked Hazelnut	<i>Corylus cornuta</i>	Produces edible nuts in late summer that can be eaten raw, or cooked.	Understory Tree
Blue Elderberry	<i>Sambucus cerulea</i>	Produces edible berries in late summer with antiviral properties.	Understory Tree
Chokecherry	<i>Prunus virginiana</i>	The fruit of the chokecherry is quite unpalatable raw (unless you are a bird), but can be cooked into a variety of dishes.	Understory Tree
Saskatoon	<i>Amelanchier alnifolia</i>	Produces small purple pome fruits in early summer that taste like blueberries.	Tall Shrub
Osoberry	<i>Oemleria cerasiformis</i>	Produces small, plum-like edible, though bitter, fruits in summer.	Tall Shrub
Evergreen Huckleberry	<i>Vaccinium ovatum</i>	Produces small, sweet edible berries in fall.	Shrub
Salal	<i>Gaultheria shallon</i>	Produces edible berries in early summer.	Shrub
Currant	<i>Ribes</i> species	The myriad types of currant native to our region produce edible berries that are especially tasty in jams and baked goods.	Shrub
Trailing Blackberry	<i>Rubus ursinus</i>	The edible, thimble-like berries of this species are smaller than those of its introduced cousin, but unlike <i>Rubus armeniacus</i> , the plant will not take over every bit of space you have!	Vine
Fireweed	<i>Epilobium angustifolium</i>	Young leaves and stems are tender and can be eaten raw or cooked like spinach. They contain high quantities of vitamin C and beta-carotene.	Tall Forb
Miner's Lettuce	<i>Claytonia perfoliata</i>	One of the most palatable of all native greens, these plants have wonderful leaves and stems that taste like lettuce.	Forb
Blue Camas	<i>Camassia quamash</i>	The sweet bulbs of this species have been a staple food of this region for thousands of years.	Forb
Chickweed	<i>Stellaria media</i>	A lovely wild salad green with tender mild flavor similar to iceberg lettuce.	Forb
Redwood Sorrel	<i>Oxalis oregana</i>	Thrives in soils with high organic content. The leaves can be eaten raw or cooked and have a citrusy flavor.	Groundcover

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References

Alexander, R. (2019). “Unusual Ornamental Woody Edibles for Urban Gardens.” “Arboretum Bulletin.” Spring 2019. https://arboretumfoundation.org/wp-content/uploads/alexander_ornamental-woody-edibles.pdf

Armstrong, C.G., Lyons, N., McAlvay, A.C., Ritchie, P.M., Lepofsky, D. and Blake, M., 2023. “Historical ecology of forest garden management in Laxyubm Ts’msyen and beyond.” “Ecosystems and People,” 19(1).

Tilford, G.L., 1997. “Edible and Medicinal Plants of the West.” Mountain Press Publishing.

“What is a food forest?” Project Food Forest. (2016). <https://projectfoodforest.org/what-is-a-food-forest/>