

The intention of the University of Washington Permaculture Experimentation Station (UWPES) space on the student farm is for growing edible perennial plants, mainly fruits. It also serves as a launch pad for testing different irrigation techniques like the current meandering rain retention swale design with the buried wood berm beds (Hugelkulture). Other initial visions for the space are the development of no-till fertilization methods like sheet mulching and the placement of nitrogen fixing shrubs and other nutrient accumulator and successional plants. The site is a canvas for future students to try out “alternative” methods of food production, and possibly expand into other areas of the farm.

The main idea is that the rain that falls on the south facing slope is collected from the footpaths and planting area and slowly channeled through the site. Holding that water for plant use as long as possible and hopefully reducing or eliminating the need for irrigation in the drier season. The Hugelkultures soak up water like a sponge, and keep the soil temperature warm as the wood decays. They are planted with blueberries and huckleberries because of their tendency to grow on fallen trees in the natural environment. As the swale path moves towards the bottom and around the herb spiral it should collect in a final marshy area where hopefully mushrooms could be cultivated and other water loving plants can be grown. The herb spiral creates more planting area in a small space and also creates different microclimates for different plants.

Throughout the site *Elaeagnus* shrubs are planted for nutrient dense food and to improve the initially poor soil through nitrogen fixation. These plants require attention because they are opportunistic and vigorous and can become invasive. Comfrey is incorporated and also needs careful attention because of its tendency to spread quickly if its roots are cut (vigilant digging!). Comfrey is a very important plant though as it is a nutrient accumulator and great green manure/mulch provider. A great fertilizer tea can also be made with comfrey. The purpose of the sheet mulching is to try to control persistent weeds on the farm like dock, to build the soils organic matter and fertility without disrupting the soil ecology, and to hold moisture. Along the southwest edge there will be a windbreak of raspberries planted to shield not only this small space but other parts of the farm from high winds coming up from Lake Washington. The fruit trees are planted with natives Salal and Kinnikinnick as a groundcover, with the idea that different guilds will be tested in the future. One vision I have is planting self seeding flowers around the fruit trees, edible and/or medicinal, but mostly beneficial insect attracting species like the *Phacelia* genus. Also seeding clover or another nitrogen fixing cover crop to help suppress weeds and bring enrich the soil would be a really good idea. Sheet mulching should be practiced probably every fall for at least the first few seasons until a good amount of humus is built up and the soil is in a healthier condition.

To prune or not to prune? The serviceberries, autumn olives and some of the other berries will need to be pruned, however it might be an interesting experiment to try not pruning the fruit trees. They will probably produce less, but according to ecological farmers like Masanobu Fukuoka and Sepp Holzer, they should be stronger and more resilient if not. If it's decided not to prune, they cannot later be pruned in maturity or will most likely die. Unfortunately I cannot give better instruction on this topic, but there are plenty of resources out there to reference and learn from. Some plants may need to be moved in the future because they were planted too close together or will become unsuitable for their particular placement. As this was my first project of this kind, I'm sure the planning was not perfect. Certainly some of the blueberries were planted too close and will need to be transplanted. If widening

the spacing between them is what is done, then it might be a good idea to extend the hugelkultur as well. While this is a small space it holds a lot of potential for testing different ideas and of course providing students with tasty perennial food.

Most of the plants chosen are highly productive. While most of the space has been filled, there are still a few empty places and opportunities to try out different plants and ideas (perennial vegetables?). This space will hopefully provide current and future students with a place to learn about caring for perennials, for learning Permaculture techniques and maybe even invent some new ones. I also see this site a genetic bank as well as a food source. Cutting, propagating and planting new bushes and trees should be encouraged. It will not only create good learning experiences but it will spread edible plant material around the region, helping promote clean local food and self sufficiency.



[Species List](#)

Aurora Blueberry (*Vaccinium sp.*)- late season- ripens early fall, multiple pickings (3 or 4), up to 6' tall

Autumn Olive (*Eleagnus umbellata*)- nitrogen fixing, September ripening, hardy, drought resistant, high lycopene content, opportunistic(noxious) plant

Balsgard Lingonberry (*Vaccinium vitis-idaea var marjus*)- developed in Sweden, large berries, compact plant, mid summer and early fall harvests, disease resistant, acidic soil, spreading rhizomes

Beauty Japanese Plum (*Prunus salicina*) [possibly Hollywood plum, nursery mix-up]- self fertile, early August ripening, not good keeper, self-fertile

Benton Strawberry (*Fragaria ananassa*)- disease resistant, late June ripening, good keeper, vigorous and upright, drought and disease resistant

Black Reward Black Currant (*Ribes nigrum*)- midseason ripening, 3-4' tall, susceptible to rust and mildew

Bluecrop Blueberry (*Vaccinium corymbosum*)- early to mid season ripening, fairly long season, 4-6' tall

Chehalis Apple (*Malus domestica*)- dwarf rootstock, ripens in late September (short true ripening period), scab resistant, partially mildew resistant

Chandler Blueberry (*Vaccinium corymbosum*)- long ripening season (mid to late), large berries, 5-6' tall, likes low pH, northern highbush

Comfrey (*Symphytum officinale*)- several medicinal uses, extremely fast growing, deep rooted mineral and other nutrient "miner" for green mulch/manure and liquid "tea" fertilizer, can be harvested up to 5 times per season, care must be taken when digging near as it can spread rapidly if roots cut

Early Golden Japanese Plum (*Prunus salicina*)- mid to late July ripening, freestone, vigorous growth

Enterprise Apple (*Malus domestica*)- dwarf rootstock, ripens in late October, good keeper (3-6 months), resistant to scab, fire blight, rust and mildew

Hardiblu Blueberry (*Vaccinium corymbosum*)- midseason ripening, low pH, up to 6' tall, highbush

Ida Lingonberry (*Vaccinium vitis-idaea*)- vigorous, 8" tall, possibly two to three harvests- spring, summer and fall, acidic soil, spreading rhizomes, disease resistant, drought tolerant

Kinnikinnick (*Arctostaphylos uva-ursi*)- high drought tolerance, good erosion control, edible but not very palatable, about 6 inches high, native evergreen groundcover, allelopathic agent may be of concern, attention necessary to determine if it's appropriate

Native Star Evergreen Huckleberry (*Vaccinium ovatum*)- medium drought tolerance, native evergreen, edible black berries, likes acidic soil, slow growing, popular wildlife foodsource, early fall ripening

Northline Serviceberry (*Amelanchier alnifolia*)- up to 6', hardy, midseason, acidic soil, productive

Salal (*Gaultheria shallon*)- native groundcover, edible berries and leaves, possible appetite suppressant, can grow densely so it may be necessary to control

Shuksan Strawberry (*Fragaria ananassa*)- late June ripening, large vigorous plants (6-8")

Smokey Serviceberry (*Amelanchier alnifolia*)- vigorous, up to 10' tall, moderate growth, reliable bearer

Spartan Blueberry (*Vaccinium corymbosum*)- 4-6' tall, early ripening (June/July), mummyberry resistant

Westwick Black Currant (*Ribes nigrum*)- late ripening, compact bush, around 3', vigorous growth

References

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Jacke, David. *Edible Forest Gardens*. Vermont: Chelsea Green Publishing, 2005.

Mollison, Bill. *Permaculture: A Designers' Manual*. Tyalgun: Tagari Publications, 2009.

Beacon Hill Food Forest website, Jefferson Park, Seattle
www.beaconfoodforest.org/

beaconhill.seattle.wa.us/tag/food-forest/
www.permies.com- great resource for blogs, videos, podcast, etc about Permaculture
www.permacultureportal.com- Bullock's Permaculture Homestead
www.patternliteracy.com- Toby Hemenway's website
www.permacultureprinciples.com/index.php- David Holmgren's website



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