

Wine Making and Habitat Rehabilitation in the Willamette Valley

Christine Carmazzi, BA in Sustainability, International Development— Patton Valley Vineyard, Gaston, OR

My internship at Patton Valley Vineyard:

Patton Valley is a 30 acre Pinot Noir Vineyard in the northern Willamette Valley. They have two sustainability certifications and are also a B-Corp. They pride themselves on being organic and as environmentally friendly as possible. During my 13 weeks at Patton Valley, I assisted in the creation of the 2017 vintage wines, and I also implemented my own personal sustainable development project.



Fig. 1. Picking Rosé grapes early Harvest Season.

Mission of the sustainability department and its cohesion with Patton Valley:

Patton Valley's goal is to carry the distinctive qualities of our estate-grown fruit through to the finished wine. We are unwavering in our commitment to operate a sustainable business, from the methods we use to tend the estate-grown grapes, to the processes by which those grapes become wine, to the distribution of that wine to their customers.

Primary Willamette Valley Vineyard Soils

Soil Type	Characteristics	Examples
Volcanic	Silty-clay loam High in clay and iron reddish color Nutrient-rich Good water-retention capability	Jory
Sedimentary	Very dry Requires enrichment with compost and cover crops	Willakenzie
Loess	Windblown silty-loam Shallowest	Laurelwood

Fig. 2. Primary Willamette Valley Soils



Fig 3: Examples of the main 3 types of soils found in the Willamette Valley

The tasks:

During my 13 weeks at PV, I had varying duties. Those duties include:

- Preparing equipment for use during harvest
- Surveying vines and clusters for optimal picking time
- Analyzed variable such as temperature, pH and Brix of juice collected
- Sorted incoming fruit for quality control
- Met with various vineyards around the valley to learn more about their sustainable practices
- Implemented Monarch butterfly habitat using native species in order to increase butterfly populations

I had a total of 8 weeks of strictly harvest work (all of the cleaning, sorting, surveying, analyzing, bottling) and my last 5 weeks were geared towards my sustainable development project; the Monarch butterfly habitat. I chose this project via methods of personal research and conversations with nursery owners.

Plants used: Showy Milkweed and Narrow Leaf Milkweed



Fig. 4(a-c). From left to right: Showy Milkweed bloomed, Narrow Leaf Milkweed bloomed, Narrow Leaf Milkweed dormant).

The USDA recently reported findings that suggested how drastically the monarch butterfly populations have been declining over the years; "according to a 2015 report from the Xerces Society, monarch butterfly populations have decreased by 90 percent worldwide since the mid-1990's, mainly due to a lack of suitable habitat across its range (which covers portions of Mexico, the U.S. and Canada)." Monarchs primarily rely on the milkweed species for subsistence and habitat; "the monarch's primary habitat in the Valley is native prairie with milkweed... Milkweed is unique because it's the only plant that monarchs will lay their eggs on, and it's the only food source for monarch caterpillars." Such a rapid decline has been due to the conversion of primary habitat into developed lands. Milkweed species are native to the Pacific Northwest, and are relatively easy to cultivate on the volcanic and nutrient rich soils of the Willamette Valley.

Due to the vast disappearance of monarch habitat, and the amount of land that Patton Valley has, I decided to replant some milkweed on their property.

Milkweed is very inexpensive (I paid \$2.50 a plant for showy milkweed dormant plants, and \$8 for Narrow Leaf milkweed mature plants). Milkweed really doesn't need a lot of attention, and it spreads rapidly. Patton Valley sits on Jory soil, which has a lot of draining capabilities. (see Figures 2 & 3 for Soil categorization). Since it is native to the Pacific Northwest, it is drought resistant, deer resistant, and freeze resistant.



Fig. 5. Working on the Monarch Habitat; 10 Acre block of the property

Location for the monarch habitat was carefully chosen using factors such as: drainage, sunlight, minimal pesticide/herbicide residuals, protection from pests. I learned a lot about where I should plant the milkweed and about the plants themselves from the small nursery owners that I purchased the milkweed from. Patton Valley's property sits high up on a hill, with some blocks on a downward slope. (see figure 6 for property map). The blocks all receive variable sunlight, and for the most part all share similar soils. After taking all of these factors into consideration, I decided to plant them on the 10 Acre block of the property that has full to partial sunlight, provides some shade for the plants, and has excellent drainage. Narrow Milkweed does not spread out wide like Showy Milkweed does, and for this reason, I was able to plant my Narrow Milkweed in single plots at the end of vine rows.

Fig. 6. Property map of Patton Valley



Conclusions:

Patton Valley is overall very sustainable. Between their LIVE Certification (Low Impact Viticulture and Enology), their Salmon Safe Certification (clean run-off), and their B-Corp status, they are doing a lot to give back to the environment and to make sure that they are being as sustainable as possible. It is very difficult to be sustainable in the wine industry. There can be a lot of waste, and it is extremely resource intensive. Patton Valley is doing a great job at minimizing those weaknesses. They are a gravity fed irrigated property, which means that they do not irrigate their vines, they use all organic sprays, they have three different categories for recycling, they compost, they use cover crops, they use recycled material in their glass and packaging, they use honey bees to promote pollination on their property, and they treat their employees very well. In an industry that makes it difficult to be sustainable, Patton Valley really exceeds. With the exception of a handful of other vineyards, Patton Valley is the most sustainable vineyard for their size that I've heard of. One way that they can improve in the future, is minimizing the use of plastic and packaging in their facilities. Plastic wrap is as valuable as gold at PV, and it often has a shockingly low lifespan. If they reduce the amount of waste and resources even further, they would be a perfect candidate for the most sustainable vineyard on the globe. I am proud to have been a part of making PV an even greater contributor to protecting our environment in the Pacific Northwest.

Literature cited:

- <http://2.bp.blogspot.com/-LEW64wSikfs/UEmEGLRtBkI/AAAAAAAAACSE/dmcTZUikn0A/s1600/willamsoils.jpg>
- http://www.winetouroregon.com/borders/elk_cove.jpg
- https://st.hzedn.com/simgs/15023d7706f255c9_8-2258/home-design.jpg
- <http://monarchbutterflygarden.net/wp-content/uploads/2014/01/matt-lavin-asclepias-speciosa.jpg>
- <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/or/home/?cid=NRCSEPRD384820>

Acknowledgments:

Huge thanks to Derek Einberger (The head winemaker and owner), Lee Beck (The cellar master), Justina Harris (The Manager), Sherie Pitt (Head of HR and accounting), Monte Pitt (Owner and my land lord), and Caroline Saville (Internship Services at ASU).

For further information

Please contact cecarmazzi@gmail.com. More information on this and related projects can be obtained at christinecarmazzi.weebly.com

