



Notes from British Columbia: The Wine Islands and Okanagan Valley

I recently had the chance to visit two very different wine growing regions within the same Canadian province of British Columbia. The Wine Island area is located mostly on the southeast side of Vancouver Island, a very lovely and green region just north of the provincial capital of Victoria. At the 49th parallel it is very far north and the summer days are very long but the available heat is scarce, with an average of 1800F growing degree days (yikes!) in an average season. Fortunately, in the temperate climate vines are not subject to winter injury. There is a small, emerging wine industry there that is trying to gain an identity and determine its future.

On the east side of the Cascade Mountains, an eight hour drive from the Wine Islands is the Okanagan region, a well-established area that has been growing wine for 40 years. The long slender glacial lakes are reminiscent of the Finger Lakes except they are on a north-south axis rather than side by side and dominated by Okanagan Lake, the northern most. The soils are mostly sandy, in some areas mixed with varying amounts of rock. The climate is high desert so it's very dry with 15" of rain annually and scarce rainfall in the summer. Winter injury and frost are threats here and wind machines abound over a landscape of fruit trees and vines. While the wine islands are lush and green, the Okanagan is brown and stark. You can guess which has an easier time growing wine.

I was with my extension colleague from Ontario, Dr. Kevin Ker, who toured the northern tier with me in 2010. Kevin is an exceptional viticulturist and well versed in all practical aspects of wine growing and plant physiology. We were invited to speak at the Wine Island Growers Association Cool Climate Conference. Kevin arranged visits in the Okanagan with viticulturists from Mission Hill, Vincor (Jackson-Triggs, Inniskillin, etc.) and Gray Monk. Mission Hill farms 700 acres and Vincor about 1200 acres, out of the 10,000 acres in the region. There was a lot to learn in both places and the contrasts provided plenty of fodder for careful consideration.

Both regions are very late this year, by some estimates nearly three weeks late on May 15 with bud break on the island and 1-3" growth in the Okanagan. There was a palpable fear for the quality of the vintage. The area is in the grip of a strong La Nina, which brings cooler water from South America and causes cool and wet conditions along the west coast. Lamont Brooks gave an outstanding presentation on climate change, both its history and possible effects on local viticulture. Recent data is punctuated by large swings in growing degree days and temperatures, as much as 21% between 2009 and 2010. It makes it very hard to plan and execute a viticultural plan under such changing conditions. The consensus is that climate change is manifesting itself in almost imperceptible warming and very evident swings in yearly climate and severe weather events. The islands will benefit from warming. They are 100-200 GDD from being a very fine cool climate wine region such as Germany, Austria, etc. Of course, you don't plan the

development of a wine industry based on climate change. The islands are free of winter injury but the Okanagan have quite frequent events and both areas are frost prone in spring and fall. The season ends with rain in mid-October for the islands and frost closes the door on the Okanagan a little later.

The islands are quite a remarkable example of growing wine on the edge of viticultural existence. With barely enough heat to get even the earliest *vinifera* varieties fully mature, it has not surprisingly turned to hybrids for more consistency. Our host, Paul Troop, owns Omega Nursery (<http://www.omegavines.com/content/grapevines-canada>) and is introducing varieties like Epicure and Cabernet Libre to the industry. These were developed by Valentin Blattner in Switzerland and offer good ripeness in a shorter season. We were told of Pinot Gris harvested at 12 brix and Pinot Noir at 15 brix, unacceptable numbers for satisfactory still wines. Not surprisingly, they are very skilled at “Plan B” for immature grapes such as sparkling wines and roses, but this is not a pleasant nor sustainable strategy for a winery. We were introduced to a technique that I had not seen before – using opaque polyethylene plastic to form a tent over the vines creating a greenhouse effect. We saw tents on Pinot Noir, Merlot and Viognier and the results are very dramatic – shoots that were only an inch or less on untented vines were 5-6 inches on the covered ones. The tents drape over the second catch wire and are carefully pinned to the ground with a base-width of about three feet. This wide base allows for a warming of the soil which pushes bud break ahead. Tents are removed when shoots reach the top of the tent. They claim that there are no disease problems in the tent, that internal temperatures often reach 35-40C, interfering with the spread of powdery mildew, which along with botrytis, are the only fungal diseases in the northwest (along with sour rot). There are very few bugs in BC, we heard only about cutworm and two types of grape leafhoppers. The tents do appear to have an impact on wine quality. We tasted a 2009 Reserve Pinot Noir at Averill Creek Vineyards that was smooth as silk, fully ripe, balanced, good concentration, beautiful dark cherry fruit. 2009 was a fine vintage in the region but the tents helped to push PN to optimal maturity. Another version of the tent they have tried is a fruit zone only wrap, similar to the application of bird netting, but with less dramatic effect. We were not able to get information about the costs of this practice but it is only used on high value *vinifera* varieties.

Wine issues are the same as any cool area: achieving balance with unripe grapes and grapes with very high acidity, as much as 18 g/l on one wine we tasted. Needless to say, there are distinctly “wine maker years” in the islands.

The soils in the area are unique with very low pH down to 4.5 and very high organic matter up to 20% as a result of its forested past. We were scratching our heads about what to suggest to balance the soils. Some sites had significant amounts of gravel and rock, yet even with the benefits they bring to drainage, the vines get big.

Like the Willamette Valley in Oregon, rain falls mostly during the winter months and it can be quite dry from July to sometime in late September to mid-October. This presents the conundrum of having to dry out the soil for wet years and having irrigation available for the dry ones, all of which adds expense to vineyard development if drain tile and-or drip irrigation are installed. The rain shadow effect is demonstrated in this temperate climate with rain forest conditions (over

100"/yr) on the west side of the island. The mountains block the rain and the wine area receives only about 40" annually.

Promoting ripeness is the key ingredient to success for all varieties here I addressed these in a recent article titled *Short Season Viticulture* (read it on the PA Wine Grape Network website). In brief, site features such as drainage, slope, elevation (local and absolute), and aspect are vital, along with vineyard design features such as rootstock choice, drain tile, irrigation, vine density/spacing, trellis/training system, etc. and finally vineyard management practices such as hedging, leaf removal, shoot positioning, crop management, vineyard floor management (cover crops, etc), vine nutrition. Suffice to say, all of this is done in the effort to create a balanced vine and to push ripening forward.

I found out what it's like growing wine in a region with no research or extension education support. The federal agricultural research station for BC is in Summerland and serves the needs of the Okanagan. There is no one to provide answers to concerns in the wine islands. The wine growers have to be creative in bringing in people to help them, in particular from Washington State University, although the conditions in Prosser are much more like the Okanagan. There is a struggle to fill the knowledge gap.

There was a lot of conversation about regional identity and what varieties are best for the future of the industry, which is common in northern latitude growing areas.

The Okanagan area covers about 10,000 acres much of which goes into "Cellared in Canada" products but they can make great wines too in this high desert region. There are three lakes aligned north-south with cooler aromatic whites grown north to Kelowna and warmer reds in the Osoyoos region near the Washington State border. The climate is dry with about 15" of rain during the growing season so proper irrigation use is essential for wine quality at all production levels. Frost and winter injury present major challenges and overhead irrigation and wind machines, along with site selection and contouring are used to reduce risk. We saw little total vine loss but it is common to lose buds and cordons so there is a lot of renewal work going on. Unlike Washington, the Okanagan is a rootstock region and they are being very careful in their selection of rootstocks. Despite the threat of winter injury, growers do not hill up (too expensive).

Soils are very sandy with some loam to a great depth, and very low in organic matter (1.5-3%), CEC (<10), and soil nutrients with pH in the neutral 7 range. Tales of dramatic dust storms abound in the area. Cover crop grasses common to the East cannot survive the dry conditions in the valley so native grasses are being tried. Compost is widely used in the area to build up soils with the larger farms turning their own.

Pests are few and similar to the wine islands with the exception of the ubiquitous rattlesnakes and black widow spiders that occupy the irrigation valve boxes. Our hosts did not appear to be too worried about them, even though snakes will climb into vine canopies to cool off. GPS is being used to map disease and insect hot spots to reduce pesticide use and improve IPM practices. It is also being used to map soils and topography, especially to avoid frost and freeze

zones. As one would guess, crown gall and an assortment of trunk diseases and viruses are a big problem here.

Kevin arranged visits for us with Mike Watson, the viticulturist for Vincor Estates, a group of five wineries in the Okanagan that includes big names like Jackson-Triggs and Inniskillin and currently farms about 1200 acres. Donald Triggs was one of the pioneers in the area who purchased vineyard land from “the band” which is the local Native-Americans. Graham O’Rourke is the viticulturist who oversees the 1000 acres for Mission Hill Family Estate winery, a magnificent facility located near Kelowna but with the bulk of its vineyards in the south. Both of these wineries are big and produce a lot of “Cellared in Canada” products but like the best big wineries (e.g. Beringer, Chateau Ste Michelle) they can scale down their production practices to make superb luxury wines. Gray Monk Estate Winery and Vineyard is one of the northernmost and right on the lake. It is among the oldest in the region and with its Austro-germanic heritage, specializes in aromatic white wines.

One curiosity we saw is vineyards on extremely high density, as close as 50-60 cm in the vine row. Graham or Mike are not particularly supportive of high density which was brought to the valley by a consultant. Suffice to say that wine makers believe this must help wine quality. We saw high density trellised apples on 30 cm spacing and the wine growers be imitating their tree fruit cousins. Most vineyards are spaced 7-8’ between rows and 3.5-4’ between vines. Everything is on VSP but with more effort devoted to getting a taller canopy than in Eastern Washington vineyards.

With the “Cellared in Canada” products and the current economic realities large vineyards are pushing their yields to meeting marketing quota. We encountered a very interesting marketing-vineyard relationship here where it often appeared that the sales department was guiding the vineyard management. In order to increase yields 1-2 additional canes are added to a second fruit wire on the opposite side of the post, or spurs are pruned to 4-5 buds instead of 2-3. This creates canopy management issues but with drip irrigation there is greater possibility for fine control.

Viticulture research at the Summerland station focuses primarily on issues of irrigation and frost/winter injury management and solutions, and vine nutrition and physiology. Dr. Pat Bowen and research tech (and spouse) Carl Bogdanoff are leading the work. They work very closely with grower cooperators like Mike and Graham.

We tasted about 20 Okanagan wines in our two days in the region. They ranged from good to outstanding in quality. I enjoyed the sunny fruit in the wines that was complemented by good structure and acid, all in fine balance on the reds. The pinnacle was the Oculus and Compendium red blends at Mission Hill and the Meritage blend at Jackson-Triggs, each having tremendous ripe fruit and balance with ample structural acidity to keep the fresh and alive. It’s a tribute to these two large wineries that they make luxury and production wines at the highest level of quality. It’s not easy to do this either in the vineyard or cellar. I think of Beringer and Chateau Ste Michelle among US examples. A Riesling at Gray Monk was racy with ample minerality and great balance and was a perfect match for German cuisine at lunch.

It never ceases to amaze me how similar wine regions are no matter where I go. Even two areas that are 8 driving hours apart and could not possibly be more different have a common viticultural heritage that allows ideas and practices to easily find a home in both. In Pennsylvania, we are closer to the wine islands in conditions and mentality. The Okanagan wines demonstrate the value of being able to control soil moisture and having knowledgeable and passionate owners and professional wine makers and vineyard managers making the wines.

References:

1. Wine Island Growers Association: <http://www.wiga.ca/index.htm>
2. Wine Island Vintner's Association: <http://www.wineislands.ca/>
3. Okanagan Wines: <http://www.okanaganwines.ca/>
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