



Craft Beverages in Western North Carolina

Historically, Western North Carolina (WNC) is no stranger to the craft beverage industry. Early European settlers brought well refined fermenting, brewing, and distilling skills. More recently, the region's craft beverage industries continue to blossom due to our unique climate, clean water, strong agricultural base, and access to multi-modal transportation infrastructure. When paired with ancillary industries such as music and outdoor recreation (which are strong sectors in their own right) they become a cultural keystone for tourism and residents alike. With all of these assets, it's no wonder that Asheville and Western North Carolina have the largest number of craft beverage providers per capita in the United States.

On a national level, the Brewers Association provides us with a snapshot of industry projections. While the industry represented less than 11% of the beer market in volume and a 19.3% share in sales as of 2014, market growth is projected to grow at a compound 34.8% annual rate by 2019.¹⁹ Exportation is revealing itself as another rapidly growing sector of the industry. Craft brewers export to over 30 countries and many meet strict European standards. For example, Boston Beer was the first to meet the strict German Reinheitsgebot purity standards. Some U.S. brewers have resolved international shipping issues by opening breweries in European countries. Stone Brewing is opening a brewery in Berlin and will be the first American craft brewer on the continent.

In WNC, industry growth was kick-started in 1994, by Highland Brewing Co. when they opened their doors as the first legal brewery in WNC since the 1920 Prohibition. The following 20 years brought many more breweries and became a key component of the local food and tourism sector. The region's designation as "Beer City" was solidified in 2012 when three of the largest craft breweries in the nation made our region home to their east coast manufacturing and distribution facilities.⁵ The first to arrive was Oskar Blues in 2012 (ranked #24 in production), which was quickly followed by Sierra Nevada (ranked #2) and New Belgium (ranked #3) in 2014.



Sierra Nevada Brewing in Mills River opened its brewery taproom and restaurant in March 2015.

In recent years, the variety of craft beverage production in WNC has become extensive. While craft beer is the largest, additional industries have emerged, including cider, wine, and spirits. Many of these emerging beverages are sourcing

their ingredients within the region thanks to the strong agricultural sector. This has fostered crop diversity and an alternate income source for many farmers that once relied upon tobacco.

Projected industry growth continues - A Motley Fool article on Craft Beer Industry growth stated, "Craft beer has yet to reach its saturation point. U.S. revenue hit an estimated \$4.2 billion in 2014 and it is now the fastest-growing alcohol category by revenue".

Small storefront producers like Jack of the Woods, Wicked Weed and Asheville Brewing continue to expand production levels from single sites to multiple storefronts and regional distribution. While the highest concentration of craft beverage producers is located in Asheville, breweries and wineries can be found as far west as Andrews, as far south as Highlands and there doesn't appear to be a saturation point on the horizon.

From agriculture, to product manufacturing, to distribution, to tourism - Craft Beverage Production creates five jobs for every production job.⁷ These "bloom" jobs benefit our region's industries and are a significant positive impact to the region. These jobs are found at agri-industries such as vineyards, orchards, and hops fields; hotels, restaurants and tourism sectors of the hospitality industry; and specialty

trades such as HVAC, Electrical, Welding, Water and Wastewater Systems.

While this level of exuberant growth has its challenges, the region continues to benefit from the growth of the industry and identify opportunities within this growth. The fissures in the supply chain have begun to be identified and addressed as efficiently as possible. While our region's Community Colleges have enthusiastically developed curriculums to meet the craft beverage industry through manufacturing, hospitality, and raw product supplier needs, it is clear that there are still weak links in the chain. In January of 2015, Land of Sky hosted a Craft Beverage Summit with the emphasis on identifying industry strengths, weaknesses, challenges and opportunities. Over twenty-five industry representatives participated. The Summit results are below and revealed some cross-sector challenges and opportunities. The opportunities and challenges that cross all industries are highlighted. From this list, strategies were developed to address needs and expedite the implementation of industry opportunities.



Troy and Sons Whiskey and Blonda Whiskey is produced at the Asheville Distilling Company in Asheville NC.

BEER



Strengths

- Asheville Brewers Alliance
- Good Brewers and Collaboration
- Large craft brewery numbers

Weaknesses

- Buying power
- Hard to get local grain and hops at scale
- Legislation: contract brew, mobile canning, Sunday drink
- Qualified labor (HVAC and equipment maintenance)
- Pay scale (larger brewers pay more than home grown breweries)
- Employee training (few experienced packaging or bottling employees)
- Wastewater treatment and capacity limitation in smaller jurisdictions.
- Highly skilled brewing specific construction / fabrication
- Trained and stable workforce
- Sanitary welders
- Process support
- Packaging manufacturers (6-pack printers and cartons)
- Tank manufacturers
- Packaging (6-pack carriers)

Opportunities

- Packaging resources
- Political voice
- Credibility
- Buying power
- Collaborate in marketing Asheville beer outside the region
- Beer tourism and outdoor tourism link

Craft Beverage Growth Concerns

- Maintaining Quality Standards
- Overexpansion / stock management
- FDA and Local Regulations
- Distribution difficulties and legislation

36

As of 2014
Craft Brewery
Experts have
increased by
36%

CIDER



Strengths

- 17 cideries
- Organized
- Strong sales

Weaknesses

- Need for strong regional organizations

Opportunities

- Appalachian grown branding for cider and wine; certified locally grown
- Agritourism
- Material source for distilleries
- Collective marketing
- Unique market positioning
- Many new jobs
- Cooperative distribution processes and organizations that deal with small businesses
- Heritage crop to replace tobacco
- Crop insurance for spray draft damage
- Cross sector tourism opportunities
- Cooperative bulk buying and recycling - purchasing power

Rankings

- 2014 North Carolina ranks 12th in the nation in Craft Breweries with 101 producers
- 2014 North Carolina ranks 24th in the nation in the number of Craft Breweries per Capita 1.4
- 2012 North Carolina ranks 14th in the nation in economic impact of Craft Breweries with \$791.1 million
- 2014 North Carolina ranks 15th in the nation in Craft Brewery production with 372,473 barrels produced

DISTILLED



Strengths

- 6 distillers
- Emerging distillers
- Good sales
- Promoting well

Weaknesses

- Legislation HB 842
- ABC system very hard for startup distilleries
- Small farms meeting demand for industry
- Processing for local producers

Opportunities

- Lots of new products; grape based (brandy, grappa, lemon-cello, orange-cello)
- Cultural tourism

WINE



Strengths

- Farming history in WNC
- SAVI: Sustainable Appalachian Viticulture Institute
- Local Trade Association
- Annual Grape Growing Conference
- Good soils, climate for grapes
- Native grape
- 53 Wine Producers

Weaknesses

- Local winemaking equipment supplier
- Legislation and laws barriers related to sourcing of grapes, and distribution
- Refrigerated trucks for transporting grapes
- High capital cost of building wineries
- Need to increase education in all aspects of the grape/wine industry
- Lack of juicing facility
- High land costs for small vineyards and wineries
- No grapeseed processor

Opportunities

- Appalachian grown branding for cider and wine; certified locally grown
- Agritourism
- 150 products from grapes; new businesses, lots of job opportunities
- Material source for distilleries
- Collective marketing
- Distribution processes
- Heritage crop to replace tobacco
- Crop insurance for spray draft damage
- Bulk buying and recycling
- Pooling purchasing power



Urban Orchard Cider Bar is located in West Asheville.

Cross-Sector Challenges and Opportunities:

Glass Recycling⁹

Challenge - The Craft Beverage producers that utilize glass containers continue to look for more efficient options for glass recycling. The common process of crushing and moving glass to a 20 yard roll-off (a bunker style system) which allows glass to accumulate until it reaches sufficient quantity to be hauled, is not a realistic option due to the amount of land required to crush, move and store the glass.

Current Option - A study of the issue was completed by North Carolina Waste Reduction Partners, which recommended the use of a heavy hauler that will transport a 30 yard roll-off directly to Reflective Recycling's site in Pacolet, SC. This option will result in an annual savings of \$800.

Data

- Craft Beverages are now driving the Beer, Cider, and Distilling Industries.
- Since 2010 there has been an 18% growth in the Craft Beverage Industry (by Volume) and it continues to grow.
- It is estimated that there are over 2,000 producers in the planning stage of production.
- Steady growth across all craft beverage industries
- Overall growth shifting to off-premise
- Increases in Seasonal Varieties

ALL



Strengths

- Local consumer support
- Region is recognized as a world-wide tourist destination
- Access to interstate and rail transportation infrastructure
- Collaboration, exciting (people want to work for breweries and craft beverages) good crossover opportunities
- Short term/long term training programs at BRCC and AB Tech
- Coordinated job placement / recruitment for area business/ industry
- Community involvement (public, private and cross-industry)
- Distribution network
- Energy and creativity
- Drinkable invitation (tourism)
- Devotion to quality and raw/ natural resource quality
- Support for local products and business / diverse opportunities
- Great water quality
- Added interest in wastewater qualities and challenges
- Increase in manufacturing jobs
- Innovation

Weaknesses

- Recycle options
- Scale up to industry
- Large water demand
- Challenges the areas solid waste and transportation infrastructure at unknown levels
- Regulatory landscapes
- BODs: high strength wastewater from breweries entering treatment facilities
- Raw material acquisition
- Lingering legacy of 1920 prohibition era laws / social system
- Slow pace of changes to legislation on federal and state levels

Opportunities

- Employment in Manufacturing, Equipment Maintenance, HVAC, Welding, and Electrical, and Water and Wastewater Infrastructure Management
- Transportation - alternate forms, bus/regional, bike, greenways
- Glass and packaging suppliers
- BRCC and AB-Tech training and customized courses
- System automation
- Infrastructure to support the craft brewers conference
- Enhanced and Expansion of waste management and recycling opportunities
- Regional (national) resource
- 6-pack boxes/holders
- Pallet recycling
- Glass recycling / reprocessing
- Coop and shared facility
- Logistic training
- Beverage tourism
- Equipment production i.e. tap handles



Recycling center at Sierra Nevada in Mills River.

State and Federal Legislation

Challenge – Beverage related legislation that was adopted during the 1920s prohibition period continues to limit or restrict beverage production, industry growth and distribution options.

- NC House Bill 278 – This bill proposed to increase the small brewery limit from 25,000 barrels to 100,000 barrels before the brewery must use a wholesale distributor for their project.¹⁰
- NC House Bill 625 – This bill will authorize retail sale of unfortified wine at breweries; clarify that the self-distribution barrel limit does not include malt beverage sold to consumers at the brewery; and clarify the law governing changes in ownership and contract brewing.¹¹
- NC Senate Bill 24 – This bill will allow distillery permit holders to sell spirituous liquor distilled on premises to visitors of the distillery for consumption off the premises and to expand the list of places at which free spirituous liquor tasting may be held.¹²
- Federal Congressional Committee - Review of the “Three-Tier System” for alcohol sales. The “Three-Tier System” describes the “producer to wholesale distributor to retailer” and each state has its own set of laws governing the “three-tier system”. The current law is supported by the wholesale beverage distributors and opposed by the craft beverage industries due to the law inhibiting consumers’ ability to order wine directly from wineries. **Currently this issue is still in committee discussions.**^{13,14}

Current Status

- NC House Bill 278 -- Has been referred to the Committee on Alcoholic Beverage Control
- NC House Bill 625 – Has passed the 1st reading and has been filed
- NC Senate Bill 24 – Has passed the 1st reading and has been referred to the Committee on Rules and Operations of the Senate

Water and Wastewater Challenges^{15, 16, 17}

Across all sectors of the Craft Beverage industries, water quality and quantity and wastewater composition are in the forefront of the producers minds. Not only do the producers use water to make their product, but the sanitation of wastewater effluent is an enormous part of the beverage production business.

Challenge – Water ph (quality) and water quantity

Even the most efficient beverage producers use on average, 4 to 5 gallons of water per bottle of product produced. That is a ratio of 4:1 (gallons of water per bottle of product). These ratios can be as high as 8:1 at less efficient facilities. The cost of water, reliability, and treatment costs can all result in increased costs and interruptions in the supply chain.

Opportunities – Preplanning and Management

Quantity/Quality/Conservation – when designing and locating a facility, producers need to determine whether they will be relying on a public water system, private wells, or a combination of the two. Smaller communities may not

have the capacity to support production needs. The cost of water should be assessed in any site selection process.

- Sole use of public water systems - investigate the system's capacity, water rates and rate trends, region-wide drought trends and local systems reliability.
- Sole use of on-site private wells - investigate region-wide well production, water ph, treatment requirements and region-wide drought trends.
- Combined water systems – combined water systems often result in more stable, cost effective and environmentally efficient systems. Separating water for product production and facility sanitation can reduce costs.
- Map the facilities water distribution system network, marking the routes of all major pipes and drains. It is critical to keep the maps up to date.
 - Identify major points of water use.
 - Identify major wastewater discharge points.
 - Estimate and track water use and discharge at each major point.
 - Track water quality at each major point
 - Check water use throughout the system when production has ceased. Flowing water in lines and drains indicate leaks and systems have been left open.

Challenge – Wastewater Managing BODs (Biochemical Oxygen Demand) and CODs (Chemical Oxygen Demand) is important to treatment. While not toxic, high concentrations

Grapes from Addison Farms Vineyard in Madison County, NC.



Community Capital

Individual Capital

Knowledge of business opportunities. Awareness of capital sources, business training.

Intellectual Capital

Certificate programs and degrees offered for value-chain careers (logistics, craft brewing, fermentation, business).

Social Capital

Collaborative network. Stronger relationships among organizations, businesses, and government entities. Regional collaboration through industry member groups and coordinators.

Natural Capital

New sustainable practices implemented for processing, sourcing, manufacturing. Opportunities for Land kept or returned to agricultural production. Conservation based businesses.

Built Capital

Reclaiming vacant buildings for manufacturing, brewing, processing. Shared rail infrastructure for product delivery.

Political Capital

New understanding of the regulatory and policies that help or hinder growth of craft beverage manufacturing in WNC.

Financial Capital

New business opportunities for ancillary and value-added products. New capital investment and training available for entrepreneurs.

Local Ownership and Control

Shared sourcing of inputs and by-products. Locally owned and operated businesses with broad support from local entities.

Better Livelihoods

New job opportunities and product development. \$791 million in 2012 craft beer sales statewide.

of untreated beverage production wastewater can destroy the microbe balance that breaks down organic waste at a treatment plant.

Opportunity – Pre-planning and Management

Give spent grain to local farmers – Generally, craft beverage spent grain production is too low to warrant selling spent grain. There is potential for value-added products with emerging technology if the grain can be stock-piled, which requires space.

Effluence Pretreatment – while there are initial costs to a pre-treatment system, it is becoming the norm as the craft beverage industry grows. Many new pre-treatment systems are currently available to meet the needs of small to robust craft beverage producers. Some pre-treatment facilities can reduce solids as well as capture and use methane generated in the process to co-generate electricity at the facility.

Pallets ²²

Challenge – Effective October 1, 2009 NC House Bill 1465 banned the disposal of wooden pallets in municipal solid waste landfills.

Opportunity – Pallet Recycling

- North Carolina Pallet Recycling Exchange
- NC DENR - [Pallet Recycling Loop](#)
- NC DENR - [Pallet use and recycling toolkit](#)

Craft Beverage Reference Sources

1. 2014 State of the Industry, by Paul Garza and Bart Watson, Brewers Association
2. 2014 State Craft Beer Sales and Production Statistics, by the Brewers Association
3. Craft Beer Saturation “Too Much of a Good Thing? Concerns About Craft-Beer Saturation” by the business times, July 4, 2014
4. Will Boston Beer Dominate This \$330 Million Market, Too? By Rich Duprey, Motley Fool January 2, 2015
5. 2014 National Beer Sales and Production Date by Brewers Association Wine Industry Facts, by North Carolina Tourism Office

6. “Saturation?...Really?”, by Costar Brewing Company
7. Asheville Buncombe Technical Collage, Craft Beverage Institute of the Southeast, Scott Adams, Director and Brew Master
8. 2015 Craft Beverage Summit – Craft Beverage Industry SWOT Report
9. Glass Recycling Assessment Summary: Sierra Nevada, May 12, 2015
10. 2015 Session NC Legislature – HB 278 “Increase Small Brewery Limits”
11. 2015 Session NC Legislature – HB 625 “Brewer Law Revisions”
12. 2015 Session NC Legislature – SB 24 “To Allow NC Distilleries to Sell Spiritous Liquors to tour visitors.” February 2015
13. An End to Wine Direct Shipping? By Robert Taylor, Wine Spectator April 2010
14. Beer Issues: What’s up with the Three-Tier System? By Mike Reis
15. Water and Wastewater: Treatment/Volume Reduction Manual, by Brewers Association
16. Wastewater in the Brewery – Are You Sending Money Down the Drain? By Dana Johnson, Birko Brewery and Production Specialist, The New Brewer Magazine July/August 2008
17. The Growing Challenges of Brewery Wastewater Systems by Keith Gribbins, Craft Brewing Business Magazine September 6, 2013
18. Idea of the Week: Mapping The Rise of Craft Beer by Daniel Fromson, New Yorker Magazine, June 6, 2013
19. Brewers Association Economic Impact Study, by Brewers Association
20. Craft Brewers Capacity, by Bart Watson, Brewers Association
21. Study of Visitors to North Carolina Wineries 2012, Prepared by Department of Marketing, Entrepreneurship, Hospitality, and Tourism Byson School of Business and Economics, University of North Carolina Greensboro
22. NC Pallet Recycling Network, Pallet Buyers Guide. <http://www.palletbuyersguide.com/cgi-bin/freexchange.cgi?gid=100344>

