

Population Growth and Open Space Protection in Western North Carolina

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Abstract

Buncombe, Henderson, and Haywood counties in Western North Carolina are set to experience a tremendous amount of population growth in the coming years, ultimately increasing development pressure and potentially altering the scenic quality of the area. This is especially troubling because of the importance of and the value open space has in each county's economy. The main question this research aimed to answer is what policy changes will be necessary to address the projected future growth and its consequences for open space? In answering this question, a variety of data was compiled and Geographic Information Systems (GIS) was used, resulting in a series of maps of past and expected patterns of land use and population growth trends. The roles of location preferences and different population profiles, as well as protection of open space through public policy changes were examined. The expected growth creates the opportunity to assess each county's guiding documents for land use and sustainable growth management strategies and consider Smart Growth as an option for open space preservation efforts. Results demonstrate the significance of location preferences, population growth, and policy on land use, suggesting the necessity of a strong sustainable growth management plan to protect open space in Western North Carolina.

Keywords: Western North Carolina, Population Growth, Open Space Protection

1. Introduction

Buncombe, Henderson, and Haywood Counties are located in Western North Carolina (WNC), shown in Figure 1. The enlarged view of the study counties in Figure 1, which shows a broad view of the highway system, demonstrates their differences in urbanization. It's clear from plain observation that these counties are experiencing a general upward trend of growth. The projected population growth in the coming decades, similarities in each county's economy, and the considerable threat of development for open space provide an interesting foundation for a case study of these counties.¹ Open space is valued in the study area for its natural, recreational, cultural, and scenic qualities and has the potential to contribute to increased tourism and in-migration.² In light of growth in WNC, it is becoming increasingly important to consider the potential consequences of inefficient land use, the location preferences of different population types, and sustainable growth. The main question that this study aims to answer is what policy changes will be necessary to address the projected future growth and its consequences for open space? To assess the potential for sustainable growth and open space protection, each county's current guiding documents were taken into consideration, as well as open space preservation efforts and a variety of additional data. Sustainable growth combines social, economic, and environmental factors for long-lasting, place-based community development.³ Results demonstrate the necessity for a variety of public policy tools, which may include Smart Growth, to protect open space and the scenic amenities it provides.

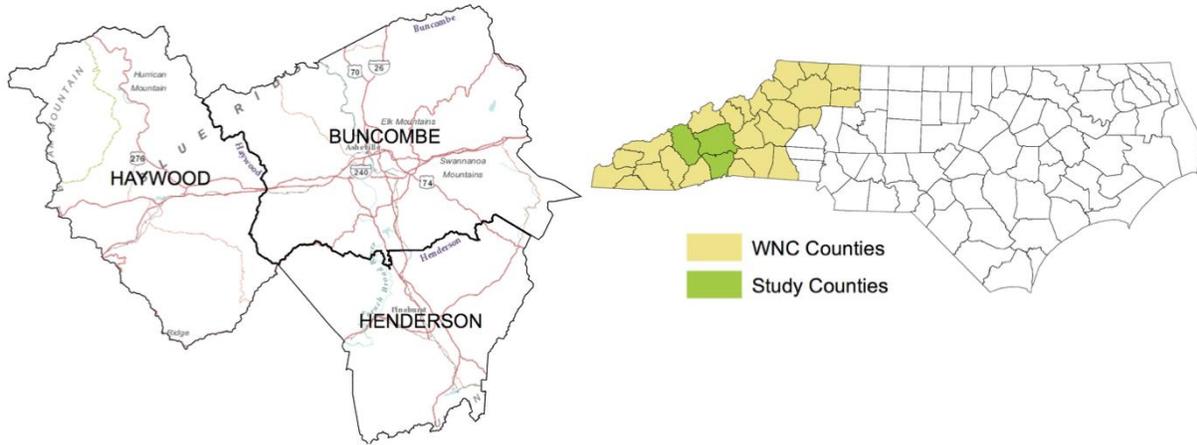


Figure 1. map of the location of the study counties in the WNC region.⁴

2. Population and Land Use Changes in the Study Area

Buncombe County is the most populous within the study area, followed by Henderson and Haywood Counties, shown in Table 1. By 2019 Buncombe County’s population is projected to increase by almost 20% from 2014, compared to Henderson County at 5% and Haywood County at 5.2%.⁵ Population density has also increased between 2000 and 2010, shown in Figure 2.

Table 1. study area population statistics.

	Buncombe		Henderson		Haywood	
2000 Population	206,330	21%	89,173	25%	50,033	19%
2014 Population	250,539	increase	111,149	increase	59,471	increase
2019 Projected Population	299,779	19.7% increase from 2014	116,791	5% increase from 2014	62,569	5.2% increase from 2014
% Population Age 65+ (2013)	17.5		24		23	
Population per Square Mile (2000)	315	15%	238	20%	97.6	9% increase
Population per Square Mile (2010)	362.9	increase	286.1	increase	106.6	

Sources: U.S. Census Bureau; North Carolina Department of Commerce.

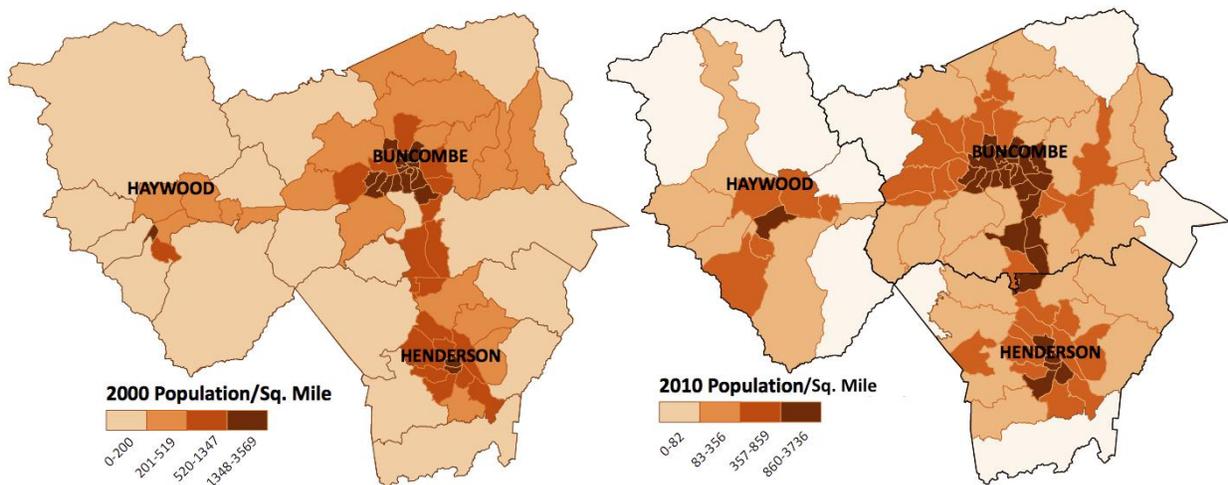


Figure 2. population density changes census years 2000 and 2010.⁶

Factors such as population size, demographics, technology, location preferences, political climate, economic conditions, and topographical constraints, such as the mountains, all influence land use change.⁷ Rural counties in WNC are particularly susceptible to faster growth because of the tourism industry and the in-migration of retired populations.⁸ Growth of these populations increases the demand for additional services, resulting in the expansion of existing businesses and attractive conditions for new businesses. Table 2 summarizes the projected increase in developed land between 2015 and 2030. As population growth continues, these factors, particularly the topography of the mountains, will contribute to urban sprawl by forcing the pattern of development in the valleys and on farmland where building is cheaper and easier, which can be seen in Figure 3.⁹ As a result of lower mountain elevation, which allows for cheaper development, and other factors, Henderson County will see the biggest increase in developed land over 15 years.

Table 2. development projections 2015 and 2030.

	Buncombe		Henderson		Haywood	
	2015	2030	2015	2030	2015	2030
% Developed Land	11.8	15.6	15.6	21.3	5.6	6.5
Acres Developed Land	48,862	64,620	36,409	49,919	19,451	22,805
Rate of Development (acres/day)	3.48	2.31	2.67	2.10	0.88	0.45

Source: Vogler, Shoemaker, Dorning, and Meentemyer, "Mapping development urban growth in WNC".

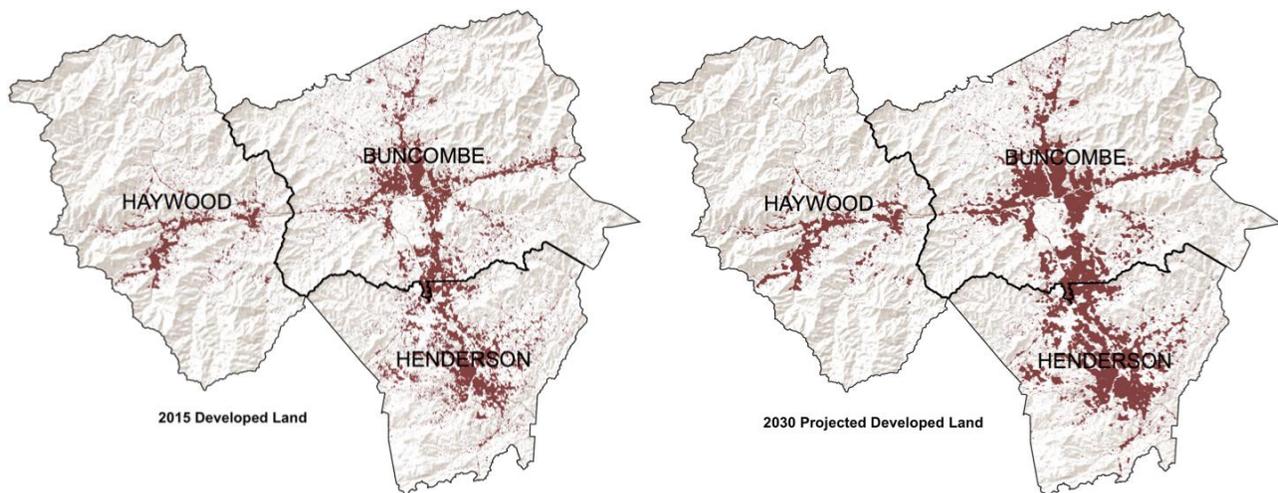


Figure 3. development projections to 2030 in the study area.¹⁰

3. Residential Location Choices

People migrate to the study area to retire, recreate, or to enjoy amenities significant in explaining in-migration to rural-adjacent areas such as public lands and viewsheds.¹¹ Different age groups dominate each study county, suggesting that the amenities provided by each are valued differently. Figure 4 shows the highest increase in the Millennial generation in Buncombe County and a considerable increase in the Baby Boomer generation in Henderson County.¹² Haywood County experienced no change in the Gen X generation during this time and a decrease in the Millennial generation. Demographic differences are important to consider because of the differences in amenities they demand and their varying impacts and influences on public policy. Henderson County is specifically highlighted in one case study as a “community that has been transformed as a result of an influx of elderly-amenity migrants over several decades”.¹³ This suggests that the study counties may need to plan differently for future growth based on the mix of population type and unique landscape.

Tiebout Sorting may also need to be considered, which is a theory that suggests characteristics such as income, race, and amenities are subconsciously used to spatially self-sort, which can result in collective outcomes.¹⁴ Self-sorting can push and pull people out of cities due to inner city problems and attractive features of suburbs, respectively.

Consideration of this theory in public policy might include opportunities for housing and transportation policy changes, which will be covered in more detail in section six. Categorical inequity created by Tiebout Sorting can push the poor into city centers and middle-income individuals into the suburbs, further creating issues for open space loss and economic mobility.¹⁵

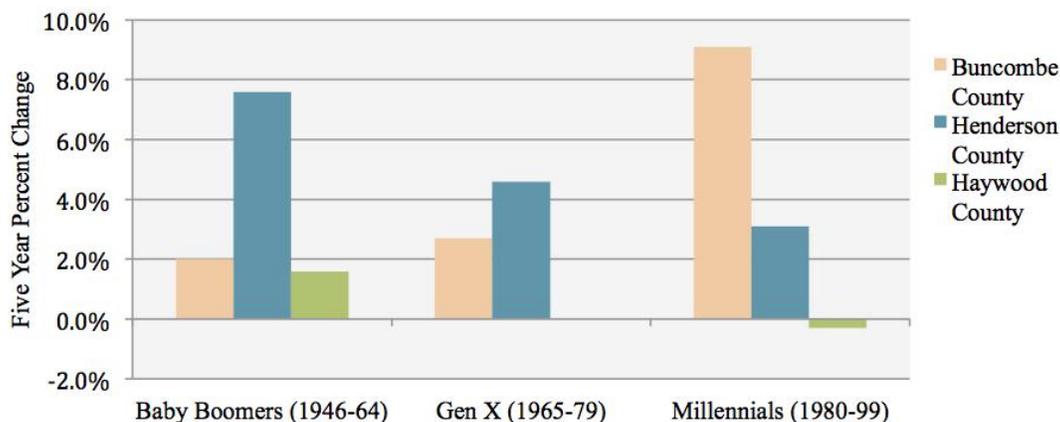


Figure 4. demographic changes in the study counties 1999-2014.¹⁶

4. Consequences for Open Space and Communities

Consequences for open space must be considered as a result of changes in population and the location preferences that drive these changes. Pressure on agricultural lands has increased due to “changes focused on housing, ski resorts, golf courses, and the infrastructure needed to support both new residents and second homes”.¹⁷ Second homes are often found in sites with difficult or remote access such as ridge-lines, while urban development often occurs in creek and river valleys where flat land is more accessible.¹⁸ Seasonal residents contribute to dispersed developments at higher elevations and more remote areas.¹⁹ Geographic location and demand for space makes Haywood County particularly vulnerable to land conversion. Adjacency to an urban area such as Buncombe County may lead to economic expansion in a rural area, which could result in urban sprawl and bedroom communities.²⁰ The loss of farmland in the study area, particularly the drastic changes in farmland acres in Haywood County, is significant because of the provision of food, cultural heritage, and the cumulative impacts for each county’s local economy.²¹

Urban sprawl is one of the most obvious indicators of inefficient land use and America’s leading land use problem.²² It’s often characterized by dispersed rather than concentrated development, which contributes to many issues for communities.²³ Many costs associated with sprawling areas include premature and excessive conversion of farmland and open space.²⁴ In recent years, Haywood and Henderson counties have become more pronounced bedroom communities. Bedroom communities are adjacent to another metropolitan area where people commute to for work and can be problematic because they share many of the same costs as sprawl, listed above.²⁵ In 2014 almost 27% and 30% of Haywood and Henderson County residents, respectively, worked outside of the county, compared to 9% in Buncombe County.²⁶ There is a trade-off between places of residence and work in bedroom communities. A longer work commute leaves little incentive and less available free time to be involved with the residential community and places additional stress on families.²⁷

Scenic quality has an important role in both tourist and residential values for natural, cultural, and recreational amenities, as well as the ecological and social impacts of sprawl and population growth.²⁸ The types of open space that contribute to this scenic quality can be found in Table 3. Open space loss around southeastern U.S. cities is especially troubling because they do not have a history of increased density as population grows, continuing to place significant pressure on open space in the coming decades.²⁹ The loss of open space in the study area could have starting implications. For example, the economic value of the North Carolina section of the Blue Ridge Parkway, which passes through the study area, was found to be over \$6 billion annually and over half of those surveyed said they would stop visiting the Parkway under varying degrees of scenic quality decline.³⁰ Furthermore, almost half of visitors surveyed in 2013 said they came to the mountain region for hiking, biking, rock climbing, or some other recreational activity.³¹ This further emphasizes the important role that open space has in each county’s economy.

Table 3. land use statistics for the study counties.

	Buncombe		Henderson		Haywood	
% Land in Conservation Easements (2015)	7		2		3.2	
Acres of Land in Farms (2007)	72,087	0.84%	37,497	5.8%	56,212	13%
Acres of Land in Farms (2012)	71,480	decrease	35,752	decrease	48,975	decrease
% Federal Land (2015)	10		8		45	

Sources: National Conservation Easement Database; U.S. Department of Agriculture, *Census of Agriculture* (various years); North Carolina Natural Heritage Program, *Federal Lands in North Carolina*.

5. Open Space Protection Efforts

Preserving open space enhances and maintains both aesthetic and surrounding residential property values.³² Counties in WNC rely heavily on land use ordinances, which are important because “the most obvious formal power that localities and regional authorities have to affect economic development is in the regulation of land use”.³³ The study counties are already taking a variety of important protection measures, which range from regulations to voluntary methods that allow landowners to participate in open space protection.

The Mountain Ridge Protection Act prohibits tall structures on ridges above 3,000 feet that are 500 feet above an adjacent valley floor. Buncombe and ten other counties adopted the 1983 state law while 12 other counties, including Henderson and Haywood, passed local ordinances. Since the North Carolina Department of Environmental Quality, or any other single entity, does not enforce the law, concerns might be raised over its effectiveness.³⁴

A voluntary approach to conservation in Western North Carolina includes farmland preservation programs (FPPs) and conservation easements, which are shown in figure 5. FPPs may take different forms in the study counties but essentially carry the same goal: to protect farmland from non-farm development by offering benefits to participants. They can act as “a stabilizer or inhibitor...to slow or prevent land-cover change”, making it a useful tool.³⁵ Conservation easements are legal agreements between landowner and a public or private entity that allow for some or no development and are highly effective since they last into perpetuity.³⁶ There is a strong public preference for permanent conservation easements to conservation zoning.³⁷ This has much to do with the finality of the easement as compared to zoning.

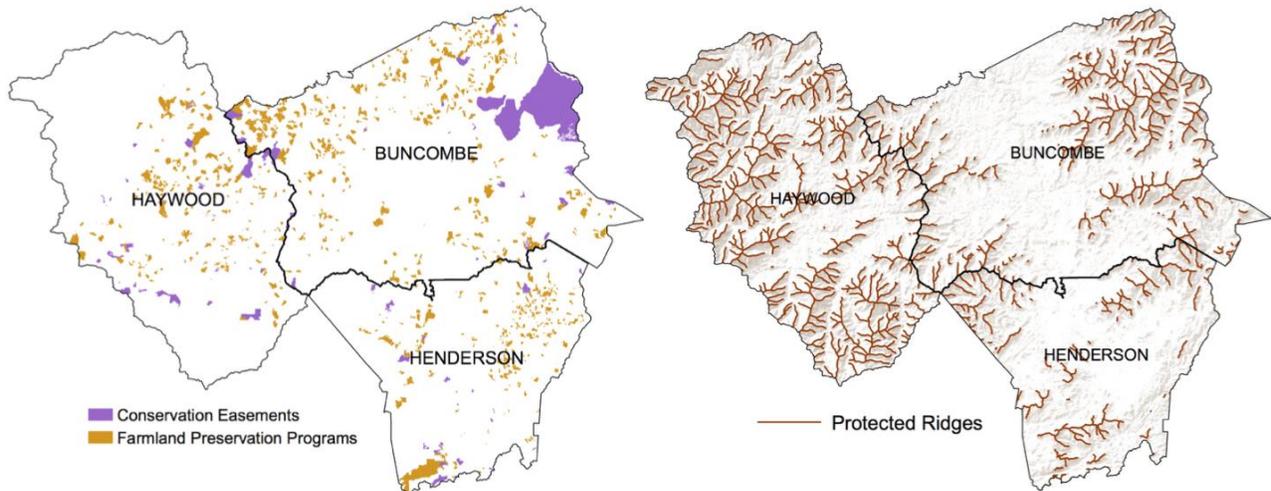


Figure 5. conservation efforts in the study area.³⁸

6. Policy Context and Additional Protection Tools

Each study county has a different set of growth management tools and plans that match their unique circumstances and create a multi-faceted approach to sustainable growth using goals for the community, economy, and environment,

as well as focusing on the people, the opportunities an area provides them, and how it relates to the evolution of a place.³⁹ These plans are summarized in Table 4. The projected population growth requires additional tools such as Smart Growth, which is a popular sustainable public policy concept best defined as “a proponent of mixed-use zoning codes, compact building, and increased opportunities for mass transit”.⁴⁰ It suggests ways for natural resources to be used more efficiently and people to become more fulfilled, healthy, and productive.⁴¹ Three Smart Growth principles were used to assess each county’s guiding documents and make recommendations for additional policy implementation. These include (1) Create a Range of Housing Opportunities and Choices, (2) Preserve Open Space and Critical Environmental Areas, and (3) Strengthen and Direct Development Towards Existing Communities.⁴² These focus on dense, strategically planned development and incentives, as well as target factors that are important in location preferences, such as safety, recreational amenities, and scenic quality.⁴³ The plans listed in Table 4 already fulfill at least a few of the Smart Growth criteria.

Table 4. existing policy context of the study area.

Buncombe	Henderson	Haywood
<ul style="list-style-type: none"> • Traditional zoning • Land use regulations • Comprehensive Land Use Plan • Sustainability Plan with annual reports 	<ul style="list-style-type: none"> • Traditional zoning • Land use regulations • Comprehensive Plan • Land Development Code • Strategic Plan 	<ul style="list-style-type: none"> • Zoning • Land use regulations
<p><i>Sources:</i> Buncombe County Commissioners, Henderson County Planning Department, Haywood County Planning Department</p>		

Haywood County relies on traditional zoning and land use ordinances to govern land use.⁴⁴ Since the county is relatively rural and nearly half of the area is federal or state owned land, it may be difficult for the county to create a comprehensive sustainable growth plan.⁴⁵ It is clear that because of its adjacency to Buncombe County and the region’s anticipated growth that consideration of implementing Smart Growth principles within guiding documents will be useful.

Henderson County already fulfills some of the three suggested Smart Growth principles. For example, density bonuses, which are special zoning tools that allow for more dense development than otherwise would be permitted in exchange for some public benefit such as affordable units, are used. The Land Development Code is meant to help lessen the burden for future population growth and includes more specific lot design and road construction standards. Ultimately, it works to fulfill the principles in the county with the Strategic Plan, which consists of several goals and a vision for the future of the county, as well as an action plan and timeline for implementation.⁴⁶

Among the many goals Buncombe County has established in its Sustainability Plan are those that direct development toward existing communities, such as expanding housing rehabilitation, repair programs, and situating developments in areas with existing infrastructure.⁴⁷ The county worked in a public-private partnership to improve homes and communities and has also increased multimodal transportation options, which can encourage development within existing neighborhoods and alternative transportation infrastructure. Since half of the working population in the United States commutes five miles or less to work, the county may consider additional funding to support the growth of multimodal infrastructure.⁴⁸

Below in Table 5 are some additional Smart Growth strategies that the counties could individually or collectively consider to fulfill all of the principles. Some suggestions may seem to overlap between principles, again emphasizing their interconnected nature in the objective to protect open space.

Table 5. suggestions for implementing the three target Smart Growth principles.

Create a Range of Housing Opportunities and Choices	Preserve Open Space and Critical Environmental Areas	Strengthen and Direct Development Toward Existing Communities
<ul style="list-style-type: none"> • Create a program similar to Baltimore’s Vacants-to-Value • Encourage development of compact communities • Incentivize ground-floor retail and upper-level residential uses 	<ul style="list-style-type: none"> • Use innovative financing tools to facilitate open space acquisition, preservation • Employ regional development strategies such as Priority Development Areas 	<ul style="list-style-type: none"> • Change the focus to Transit-Oriented Development • Make zoning codes and other land development regulations simple and easy to read
<p><i>Sources:</i> U.S. EPA, “Getting to Smart Growth”; U.S. EPA, “Getting to Smart Growth II”.</p>		

The projected growth creates an opportunity for the study counties to combine resources and collaborate on ideas to address the scope, scale, categorical inequity, and complexity of the projected future growth.⁴⁹ This includes the suggestions in Table 5, as well as many unlisted ideas. These concepts will each in their own way help to address the future expected growth and projected loss of open space in the coming years. These core concepts focus on how and where development happens and how it will affect the surrounding community, allowing for maximum open space protection.

The possibility of the growth of bedroom communities may require Transit-Oriented Development (TOD). This can be implemented through a public-private-nonprofit partnership where land is bought and held near transit stations for affordable housing and other community assets.⁵⁰ TODs encourage both mixed-use and areas of concentrated development, allowing open space to be kept undeveloped. This approach emphasizes creating strong communities by focusing on connecting people to jobs and amenities while lessening the burden of transportation costs.⁵¹ A TOD initiative can spur investment interest in development along corridors and transportation infrastructure, as well as decrease transportation costs for working families. Priority Development Areas (PDAs) can spark infill development, ultimately directing development to existing infrastructure.⁵² A spatial implementation plan throughout the study area can create corridors of economic activity and a strong sense of community. In addition to selecting areas suitable for PDAs the counties could also select Priority Conservation Areas (PCAs), which might work to connect areas of open space between the counties. Vacant properties are also an important factor to consider in directing development toward areas of existing infrastructure and can be included in PDAs. The counties could look to already existing and successful programs such as Baltimore Housing’s Vacants-to-Value program that encourages infill development and rehabilitation of existing buildings by offering incentives for both developers and homebuyers.⁵³

7. Conclusion

Population and land use are projected to change considerably in Western North Carolina (WNC). Changing location preferences and population type will undoubtedly continue to influence the landscape, placing more pressure on open space in Buncombe, Henderson, and Haywood Counties. It will become increasingly important to design and implement policies that are efficient and preserve open space, while accounting for differences in population and setting. The result of this work is a picture of the changes in response to population growth in an area with mountains as geographic barriers, as well as suitable planning mechanisms for each county. Future research could include the socioeconomic consequences of policies that protect open space as well as the economic benefits to the study counties for protecting open space. Tools such as Geographic Information Systems (GIS) should be considered for future planning and analysis.

8. Acknowledgements

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10. Endnotes

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2 Mathews, "Consumer preference agriculture," 51.

3 Zavattaro, "Re-imagining sustainability narrative in U.S. cities," 189.

4 Map created by author using data from: NCDOT, Esri Basemaps.

5 North Carolina Department of Commerce, *AccessNC*; U.S. Census Bureau, *American Factfinder*.

6 Map created by author using data from: NCDOT; U.S. Census Bureau.

7 Ewing, "Is Los Angeles Style Sprawl Desirable," 111; Auch, Napton, Kambly, Moreland, and Saylor, "Driving forces land and change northern piedmont," 55; Napton, Auch, Headley, and Taylor, "Land changes Southeastern US," 37.

8 Henderson and McDaniel, "Scenic Amenities Foster Growth Rural Areas," 12; Deller and Lledo, "Amenities and Rural Appalachia," 124.

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- 10 Map created by author using data from: Vogler et al.; NCDOT; Esri Basemaps.
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 - 18 Ibid., 41
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