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By: **Kristan Cockerill** & **Peter Groothuis**

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Last Settler's Syndrome and Resource Use in Southern Appalachia

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Abstract

To better understand perspectives on resource use and economic development in a rural area, results from three independent studies have been integrated. The first project assessed whether there were differences across demographic groups as to their willingness to pay to protect the aesthetic value of the landscape or their willingness to accept some decreased level of aesthetic value. The second project involved working with a rural community that faces development pressure from outside the community to generate ideas for economic development that preserves local cultural and environmental conditions. The third project addressed public perspectives on water conservation and economic development. All three projects reveal evidence of 'last settler's syndrome'—a tendency among individuals to place a high value on what initially attracted them to a specific place and to attempt to maintain status quo. The three projects also reveal situations of potential conflict when ideas about resource use clash as well as situations ripe for cooperation as various groups share values about resource use and economic development.

Keywords: land use, rural, resource management, public attitudes, willingness-to-pay

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> The charming landscape which I saw this morning is indubitably made up of some twenty or thirty farms. Miller owns this field, Locke that, and Manning the woodland beyond. But none of them owns the landscape. There is a property in the horizon which no man has but he whose eye can integrate all the parts, that is, the poet. This is the best part of these men's farms, yet to this their warranty-deeds give no title.
>
> *—Ralph Waldo Emerson, Nature; Addresses, and Lecture*

1.0 Introduction

In many rural areas land use patterns are shifting from agriculture or woodland to residential development as land-based commodity prices have fallen. This is especially true in areas possessing significant natural amenities like the sweeping vistas, white-water rivers, and blue-ridged mountains of Southern Appalachia. As in-migration increases, decisions about development and resource use can become heated as the 'newcomers' square off with long-time residents. Understanding how

various groups value both the land and water (as productive resources) and the landscape (as scenic amenity) can help address potential conflict when land use or resource availability changes. Between 2005 and 2013 the authors conducted three independent studies concerning resource use and economic development in a rural region. These projects include (a) a quantitative survey of residents about billboards and wind turbines as land use activities conducted in 2005; (b) a qualitative assessment of a community driven effort to preserve environmental and cultural resources completed in 2009; and (c) a quantitative survey of residents about water management conducted in 2013. As designed, none of these were focused explicitly on assessing how long-term residents compared to new residents in their attitudes. In discussing these projects, however, the authors realized that there were strong signals in each case suggesting that having ancestors in the region, and hence strong ties to the region, is a key variable in shaping attitudes and practices relevant to resource use and economic development. This article, therefore, revisits data from these projects to better understand if and how having a long history in a place influences attitudes toward various types of development and resource use. More specifically, this paper assesses to what extent the "last settler's syndrome" is in play in this region and what the potential implications of this may be. Better understanding how newcomers and long-time residents perceive development should be useful in addressing future development planning. Following an introduction to the 'last settler's syndrome", the authors briefly describe the study area. Then the article reports data from the three studies that are relevant to considering last settler's syndrome as a key factor in determining attitudes toward land use, water management, and economic development.

2.0 Last Settler's Syndrome

Riebsame et al. (1996) assessed perceptions on the changing landscape in the Colorado Mountains and identified what they called the last settler's syndrome, where each new settler wants the area to remain as it was upon their arrival. For areas facing large influxes of in-migration, the last settler's syndrome poses interesting questions about why a particular group seeks to settle in a specific place and the potential ramifications for resource use and management. For example, Graves and Waldman (1991) contend that the migration decision of the retired depends more on local amenities and housing costs than productivity of labor in an area. McLeod et al. (1999) further support this view by finding that in-migration to rural areas in Wyoming is driven by open space and environmental amenities. Riebsame et al. (1996) further note that the arrival of more affluent immigrants to an area heightens class distinctions. In-migration tends to increase property values, road congestion, the demand for community services as well as the need for additional infrastructure. Any of these impacts potentially can generate conflict within communities as they not only change the landscape, they potentially require changes in management and regulatory structures.

One major difference between long-term residents and newcomers in rural, historically agricultural, areas is that long-time residents often focus on natural resources as agriculturally or in some other way productive while newcomers view land mostly as a recreational-scenic amenity. In fact, Ryan (1998) found that farmers and long-time residents responded more positively to scenes of domesticated farms and developed areas, whereas newcomers and non-farmers were more attracted to "natural" landscapes of rivers and woods. To tourists and newcomers, the "viewshed"—an area of land that is visible to the human eye from a fixed vantage

point—is often what attracts them to the area and hence what they want to maintain or improve.

This difference in perspective of the value of place (as either productive or aesthetic) is complex, however, as long-term residents also share an appreciation for the aesthetic value. For instance, one study found that farmers and ranchers would often rather donate their land to conservation easements than sell their land for development by newcomers (Hoag et al., 2005). Cho et al. (2008) found that residents in areas of high population growth are willing to buy conservation easements to protect environmental amenities. Erickson and De Young (1993) found that Michigan farmers equally preferred pastoral farm field scenes and wooded, natural scenes. Armstrong and Stedman (2012) show that in an area transitioning from agriculture to residential, agricultural landowners are more willing than residential landowners to implement riparian buffers for conservation. Generally, the body of work related to the last settler's syndrome demonstrates that farmers and/or long-term rural residents are influenced by the economic necessity of maintaining ordered, agricultural land, but also have an intrinsic appreciation for nature and allow "unproductive" tracts of woodland on their property.

Additional studies show that there are differences among various populations regarding land use control policies (Inman et al., 2002, Inman & McLeod, 2002). More specifically, well established residents and those with economic interests in the area tend to support private management strategies, while college graduates, wage earners, and those who value the county's rural lifestyle, tend to support public management strategies (Inman & McLeod, 2002). This has significant implications for thinking about resource management in rural communities where there is strong support for both private property rights and a rural lifestyle, as is the case in Southern Appalachia.

3.0 Southern Appalachia Historical Context

Stereotypes of Appalachia are prevalent and persistent as the region continues to be popularly viewed as backward, violent, and hopeless (Eller, 1999). One result of these stereotypes is that, "the people of the southern mountains have always been ripe for development projects conceptualized and controlled from outside the region" (Keefe, 2009, p.1). These stereotypes have also affected how those whose families have lived in the region for generations see themselves and relate to those outside the region. Appalachian identity has been shaped by the region's physical characteristics as well as its long and interesting settlement patterns (Williams, 2002). Williams (2002) well documents the European settler forays into the southern mountains beginning in the 1500s. He notes that by the 1930s, much of the land in the region, which was marginal to begin with, had been severely degraded, precluding farming as a primary source of income. Those who had non-farming jobs as well as agricultural land, were heavily impacted by the loss of non-agricultural work during the Great Depression. A subsequent exodus left 150 Appalachian counties with fewer people in 1970 than they had in 1920. This opened space in the region for "back to the landers" in the 1960s and 70s who sought escape from their contemporary society. These new arrivals moved toward the borders of Virginia, North Carolina, and Tennessee and eventually became "neo-natives" (Williams, 2002). Both "natives" and "neo-natives" disliked the next wave of newcomers, the residential tourists who "built new homes in the mountains, often perching them in unaccustomed place on ridgetops, driving up land prices, and polluting the night sky

with high-wattage floodlights either because their contractors sold them on the idea or they found the quiet, dark mountain nights unsettling" (Williams, 2002).

Although the demographic characteristics of the region are complex, the region maintains a strong rural identity and many of its inhabitants remain poor. Following the 2000 census, the Appalachian Regional Commission funded a series of reports to document demographic and socioeconomic change in the region. One of these reports found that although economic conditions improved greatly between 1970 and 2000, Appalachia remains significantly poorer than the United States as a whole (Black & Sanders, 2004). Additionally, while the region did experience a high growth rate since 1970, almost half of the counties in Appalachia still had fewer than 30,000 people in the 2000 census (Pollard, 2005).

4.0 Specific Study Area

The three studies integrated in this article are focused in Watauga County, North Carolina, which has a total population of just over 51,000, and includes four incorporated towns and 11 unincorporated communities. There are about 163 persons per square mile in the county and almost 29% of the population is listed as living below the poverty line (U.S. Census Bureau, 2010). One of the featured studies includes residents in Ashe County, which has a total population of about 27,000 including three incorporated towns and 17 unincorporated communities. There are about 64 people per square mile in Ashe County and about 19% of the population lives below the poverty line (U.S. Census Bureau, 2010).

Throughout this area the terrain is rugged and lush. There are mountain peaks over 5,000 feet, and it is a temperate rain forest receiving an average of fifty inches of rain per year. This area has long been a tourist destination. Beginning in the earliest twentieth century the wealthy built resorts here, including Flat Top Manor, the summer home of cotton magnate Moses Cone, that is now part of the National Park Service's Blue Ridge Parkway (Blue Ridge National Heritage Area). Currently there are many residents who claim that their families have lived and farmed in this region since before the Revolutionary War. A walk through any of the family burial plots, that are a common site in these counties, confirms this long history. The area has seen tremendous growth since the 1970s, with concomitant changes in the demographic and economic character. Specifically, in Watauga County the percentage of land defined as "subdivision" increased from 2.6 percent in 1980 to 10 percent in 2001 (Highland Mapping, 2003). Additionally, the county has seen a shift in the economy from largely agricultural based to increased tourism, recreation, second homes, and service sector employment. Bartlett and Boyer (2009) provide a summary of this shift, including that the farming population decreased from 4,142 to 1,269 between 1970 and 1990, and by 1997 people outside the county owned 50 percent of all land parcels in the county. All of these sectors are now important and are interrelated in the regional economy. For example, agriculture and tourism are closely linked as 'choose and cut' Christmas tree farms represent an annual economic impact of (US) $14 million in Watauga County (Watauga County Economic Development) and Ashe County is the largest Christmas tree producer on the east coast (Ashe County Economic Development).

The shift toward a more complex economy has of course had impacts. Migration to a rural area influences aesthetics, resource use and class structure, often creating tensions among citizens (Nelson, 2001). There is a visual cue in this region highlighting these distinctions. The long-time residents tend to live in the lowlands,

while the newcomers build large homes on the mountaintops and peer down over the landscape. Cho et al. (2003) found that compared to full time residents, second homeowners (newcomers), prefer their houses far from major roads, at higher elevation and near a stream or lake. They also found that the presence of second homes significantly and positively affects home prices for the entire area. As Williams (2002) noted, these kinds of differences are sites of tension among the natives, neo-natives, and newly arriving residential tourists.

4.1 Billboards and Wind Turbines

As the population grows and diversifies, planners and elected officials grapple with questions related to zoning and diverse aesthetic interests, including billboard removal and electricity generating windmills. In Watauga County, billboards became an issue because some roads in the county are designated scenic byways. Some citizens oppose this designation while other citizens have sought to remove all billboards from Watauga County roads (Groothuis et al., 2007). Concurrent with discussions about billboards, there was debate in the county about wind turbines. Wind energy has become an issue as many promote the idea of "green energy" while others feel that electricity generating windmills harm mountain views (Groothuis et al., 2008).

In Boone, the largest town in Watauga County, zoning laws were enacted in 2006 to protect scenic amenities and to avoid landslide hazards by limiting development on steep slopes. Prior to passing this ordinance, the debates over land use ordinances and zoning were extremely contentious and this prompted a study to assess preferences for land use among residents. To focus on differing land use preferences that may affect land use planning the research team developed two contingent valuation scenarios: one using a "willingness to pay" framework and the other a "willingness to accept" framework. The scenarios addressed removing billboards and building electricity generating windmills. Both scenarios focused on changes to the mountain-view (landscape) amenity. Contingent valuation method (CVM) attempts to monetarily measure the benefits or costs to changes in natural amenities. The willingness to pay (WTP) framework is used to monetarily measure the benefits of improving environmental quality (in this case improved mountain views through removing billboards). The willingness to accept framework assesses the compensation necessary to allow for a reduction in environmental quality (in this case the diminished views from building electrical generation windmills). To help minimize the potential bias from the hypothetical nature of questions in the CVM, Mitchell and Carson (1989) state that a hypothetical scenario:

> …must be informative; clearly understood; realistic by relying upon established patterns of behavior and legal institutions; have uniform application to all respondents; and, hopefully, leave the respondent with a feeling that the situation and his responses are not only credible but important.

In the United States, since the 1965 Highway Beautification Act, municipalities have passed laws to remove billboards for aesthetic reasons. Some have argued that billboard bans infringe upon freedom of speech but, in *Metromedia, Inc. v. San Diego*, the Supreme Court ruled that a city may regulate aesthetics under its police power and generally ban outdoor signs for aesthetic reasons alone (Bond, 1990). In North Carolina, a state ordinance requires that landowners must be compensated for

the lost revenue if a municipality bans billboards. This explicitly assigns the property rights to the landowner making the willingness to pay method appropriate for assessing the perceived value of the amenity. The researchers used the willingness to pay framework and a public referendum question to be consistent with established legal institutions to make the CV questions as realistic as possible (Mitchell & Carson, 1989).

Electricity generating windmills present another local externality that can be perceived as harming mountain views. Demonstrating that some people do see this technology as a negative, Ladenburg and Dubgaard (2007) found that individuals are willing to pay higher electric bills to site coastal wind farms further from the coast. This negative externality could lead to the NIMBY (not in my backyard) syndrome. Economists theorize that the NIMBY syndrome leads to inefficient allocation of resources because the external costs of a locally undesirable land use, or LULU, are borne locally by the neighborhood surrounding the facility, while the benefits are distributed globally throughout the economy (O'Hare, 1977; Kunreuther et al., 1987) This is relevant to Appalachia and to the last settler's syndrome, as a wealthy backyard is less likely to be targeted for a LULU than a poor backyard and the wealthy backyards are typically owned by newcomers.

Inhaber (1992) suggests that a politician's concern for remaining in office favors the default property right due to a reluctance to infringe upon perceived property rights when choosing a location for a LULU. To address the problem of inefficiency and to encourage the placement of a LULU, those who receive the benefits could compensate the neighborhood around the site for bearing the external costs (O'Hare, 1977; Kunreuther et al., 1987). When individuals perceive that the status quo defines the property rights then the willingness to accept method becomes an appropriate measure of compensation (Carson et al. 2001). Although the willingness to accept framework is not typical for CVM, the institutional and cultural framework of the NIMBY problem makes the willingness to accept the appropriate measure.

Although both scenarios applied in Watauga County focused on changes in mountain views, the billboard question focused on a perceived improvement from the status quo, requiring people to pay for this improvement while the electricity generating windmill question focused on a potential detrimental change from the status quo, with people receiving compensation for the change. These two scenarios provided a vehicle to test if preferences for maintaining the status quo of mountain views differ from preferences for change in those mountain views (i.e., removing billboards or adding windmills) In addition, the survey provided insight on how different groups perceive and value change in mountain views *vis à vis* maintaining the status quo although the changes in views by removing billboards and by building wind turbines are different therefore the results are more suggestive than definitive.

A survey to assess the value of mountain views was mailed in the spring of 2005 to a random sample of 1200 Watauga County residents. It consisted of a primary mailing, a post card reminder and a second mailing to all non-respondents of the first wave. In the end, 901 useable addresses and 389 responses were obtained for a response rate of 43 percent. The average age of respondents was 55 years, while the average age for the county of all residents over 20 was 45. The average income of survey respondents was $61,000 while the average income in Watauga County from the 2000 census was $50,300 in 2005 dollars. The average level of education for the respondents was 15 years and for the county it was 14 years. Overall respondents tended to be older, slightly more educated, and have higher income than the

population (Groothuis et al., 2007; Groothuis et al., 2008). Relevant to the last settler's idea, 11 percent of the respondents retired to Watauga County and 31 percent report having ancestors who lived in Watauga County (suggesting they are long-time residents). When it comes to mountain views, 81 percent of all respondents say that they have scenic views that could be altered by billboards, windmills, or cell towers (another potential negative externality affecting the viewshed) on daily drives while 59 percent report that scenic views from their home could be altered by billboards, windmills, or cell towers.

Almost all respondents agree or strongly agree that mountain views are an important part of the quality of life in Watauga County. The only difference is that respondents with ancestors in the county are a little less likely to strongly agree with this statement. These results are consistent with the literature reflecting that long-time residents do value the aesthetics of the place, but retirees, are more strongly motivated by the aesthetics.

Residents with ancestors from the county are much more likely to consider land usage a private choice not to be regulated. This possibly reflects a preference for the productive value of the land, which is correlated with a resident's cultural and economic status. When it comes to zoning, respondents with ancestors in the county are split down the middle as 47 percent agree that there should be zoning while 43 percent disagree. When the statement is that land-owners should be able to use their land any way they want, 64 percent of those with ancestors in the region agree with this statement. This suggests that residents with ancestors from the area believe land use is an individual choice, not a community choice.

Individuals who retire to the mountains, however, are much more likely to favor zoning. For individuals who retire to the mountains 82 percent favor zoning, while only 23 percent agree that landowners should use their land any way they want. This group clearly regards land use as more of a community choice and potentially reflects a preference for the aesthetic value of the land, and a perception that no individual can unilaterally harm the landscape amenity if land use decisions are community decisions.

To further analyze land use preferences from various groups, the study assessed how likely a respondent was to say "yes" to removing billboards or to allowing electricity generating windmills in a viewshed. The willingness to pay question for billboard removal followed a dichotomous choice framework. The variable 'Yes' is a qualitative variable equal to one if the respondents answered "for" to the question:

> The State of North Carolina through the Highway Beautification Act has suggested removing billboards along roads. The federal government has mandated that when billboards are removed land owners need to be compensated for lost income from billboards. Suppose Watauga County wants to remove billboards to improve mountain views. Suppose that to implement the removal of billboards county residents must pay $A to compensate land holders for the removal of billboards. Are you in favor of this proposal?

Respondents were given three possible responses: for, against and don't know. The $*A* is a randomly assigned cost variable with the value of $10, $25, $100, $250 or $500. We follow the status-quo conservative approach and code all "don't know"

responses as "against" responses (Groothuis & Whitehead., 2002; Caudill & Groothuis, 2005). The contingent valuation question for the windmill proposal was:

> Suppose, to generate green electricity, windmill generators are to be built on four ridge tops throughout Watauga County. To compensate individuals in the county for accepting windmills, electric utility bills would be reduced by $B each month per household. Suppose that this proposal, approving the electrical payment reduction and allowing electrical windmills to be built, is on the next election ballot. How would you vote on this proposal?

Where $*B* is a randomly assigned cost variable with the value of $1, $2.50, $5, $10 or $50. Respondents were again given three possible responses: for, against and don't know. Table 1 shows the bivariate probit results on the likelihood of voting yes on both referendums.

Using the results in Table 1 and applying the Cameron and James (1987) technique we find that individuals are willing to pay to improve mountain views through removing billboards by paying a one-time assessment of $55 on average and they require, on average, compensation of $1.64 per month on electric bills when the mountain views are harmed from building electricity generating windmills. Further, people with higher income require greater compensation for the windmill. Respondents who report homes with views are less likely to accept windmills and those who report drives with views are more likely to pay more to remove billboards. These results suggest that compensation and payments are more important to respondents whose views are most affected by billboards or windmills.

More detailed data from the survey show that newcomers are willing to pay more than other groups to remove billboards and require more compensation to allow windmills in their viewshed. The results also show that individuals who have ancestors from the county are more concerned with maintaining the status quo of mountain views. This group is less willing to pay to remove existing billboards but also requires compensation to allow electricity generating windmills in the county. In particular, the household willingness to pay rises to $840 for individuals who retire to the county and falls to $9 for respondents who have ancestors in the county. These results show a divergence of preferences. In addition, the willingness to accept windmills rises to $8.22 for individuals who retire to the county and rises to $4.22 for individuals who have ancestors in the county showing a convergence of preferences.

Focusing on the various groups shows that individuals who retire to the mountains are more likely to pay to remove billboards and less likely to accept windmills in the county. Mountain views are therefore an important amenity for those who choose to retire to Watauga County. Individuals who have ancestors in the county are less willing to pay to remove billboards and also less willing to accept electricity generating windmills in the county suggesting that the status quo in the mountains is important to this group. These results may also suggest a preference for the productive use of land, as landowners do use billboards as an income source. Overall the results suggest that conflict may arise between long-time residents and newcomers on some topics, such as removing billboards and agreement may arise related to other topics, like discussing electricity generating windmills.

Table 1. *Bivariate Probit Model Results Showing the Likelihood of Voting 'yes' to Remove Billboards and the Likelihood of Voting 'yes' to Allow Windmills*

	Billboards Yesb	**Windmills Yesw**
Constant	-.728	.337
	(1.48)	(0.65)
Log payment	-.289**	
Billboards	(4.88)	
Log offer		.196**
Windmills		(3.28)
Ancestor in	-.648**	-.346**
County	(3.60)	(2.08)
Retire to	.618**	-.436*
Mountains	(1.96)	(1.69)
Part Year	.133	-.117
Resident	(0.62)	(0.74)
Rent Home	.573**	.101
	(2.14)	(0.42)
Home with view	.254	-.302*
	(1.40)	(1.85)
Drive with view	.657**	.104
	(2.91)	(0.49)
Income	.001	-.004*
	(0.39)	(1.72)
Education	.052**	.001
	(2.19)	(0.75)
Age	.007	-.0003
	(1.12)	(0.05)
Rho	.176*	
	(1.71)	
Log likelihood	-393.18**	

*p=.10 **p=.05 (t-value in parenthesis) N=334

4.2 EKCHO—Elk Knob Community Heritage Organization

The second study featured in this article is a qualitative assessment of an effort to preserve environmental and cultural amenities in the Elk Knob area of Watauga County as a response to development pressure. In 2000 Elk Knob was the proposed site of a ski resort and/or a gated residential community. Local residents reported to the first author that they were resistant to such significant change in their communities and sought assistance from staff at Appalachian State University and the Nature Conservancy to prevent large-scale development. Through easements and state purchases, residents transferred a large tract of land to the state creating Elk Knob State Natural Area in 2003. In 2005 the property became a state park and the residents began hosting an Elk Knob Headwaters Community Day to celebrate the park and the local success in preserving the landscape that they valued (High Country Press, 2009; North Carolina State Parks, n.d.).

The group that planned and organized the Headwaters Community Day event began thinking about how to formalize its efforts and to make long-term plans to ensure local control over land use. Although the large projects proposed in 2000 were not accepted, developers continue to pursue other opportunities, and residents report that real estate agents routinely knock on their doors with offers to buy land. In 2006 the

Headwaters Community Day planning group approached staff at Appalachian State University and requested assistance with long term planning for the community. The first author was the principal investigator on a grant from Z. Smith Reynolds Foundation to hire a part time coordinator to work with the community to formalize their efforts into a tax-exempt non-profit organization with a mission of promoting land preservation as a means of community development. Between 2007 and 2009 the community group gelled into EKCHO—Elk Knob Community Heritage Organization—and received its non-profit tax status. The planning phase for EKCHO was based on ideas from participatory development which, "values parity between participants and research/ professionals. The outside professional facilitator is recognized as being a necessary catalyst, but there is a shift in the locus of power during the development process" (Keefe, 2009). In the initial project phases, the first author, other ASU staff and the part time organizer directed most activities. They coordinated establishing a Board of Directors populated entirely with individuals from within Elk Knob communities, who represent both "natives" and "neo-natives", using Williams' terminology (Williams, 2002). As the Board of Directors coalesced, those individuals took on more and more responsibility for the group's operations and when grant funding ended in 2009 EKCHO was functioning independently.

In 2009, EKCHO surveyed community residents to assess their attitudes, concerns, and perceived needs for the community. Community members, who are all long time residents, were invited to a hot dog social and asked to complete the survey. There were 124 surveys submitted. When asked the open-ended question, "What do you value about your community?" the top three items that respondents mentioned were: (1) small town/rural, (2) friendly people, and (3) beauty. When asked about positive changes that they see in their community, the most common response was establishing Elk Knob State Park. The dominant negative change noted in the community was development/ growth with some specific notes about destroying natural resources or destroying agriculture. This reflects the spirit of the last settler's syndrome as these long-time residents are quite critical of efforts to change the status quo through new development.

There is also resistance to changing the status quo of how land use is managed or regulated. As with the billboard and wind turbine study, there is a divide in the Elk Knob community concerning zoning experience. In 2008, the EKCHO Board of Directors planned several workshops focused on land use planning to include information about land trusts and agricultural easements. Attendance at the first workshop was poor and comments from those attending reflected concern that the intent behind the workshop was to increase outside interference in private property management. In general, community residents continue to resist any efforts perceived as infringing on private property rights. Yet, land-owners were willing to work with the State Parks and with the Nature Conservancy in 2000 to protect land from development. Since then, Elk Knob State Park has increased its acreage through work with land trusts and outright land purchases, reflecting that landowners continue to be willing to place land in trust and/ or to sell it to the State to prevent development in this area. This seems to enforce the last settler's idea in that long-term residents prefer the status quo reflected in (a) both a lack of zoning or any infringement on private property rights and (b) maintaining a traditional rural community character.

The EKCHO Board of Directors, however, recognizes that change is inevitable and that the community may be better served by being strategic in planning for change rather than waiting for change to be thrust upon them. Embedded in the impetus for creating EKCHO is the reality that if a single large landholder sells property to a developer, the character of the community will be altered. Therefore, working within the community to talk about alternatives, like easements or selling land to the State, seemed the most appropriate tack for EKCHO to take. Acquiring full community support however, continues to offer challenges.

The Elk Knob experience mirrors an earlier effort in the Laurel Valley community of Watauga County. There, community members organized against the announced closing of their post office. The results of a survey conducted in that community in 1997 found strong support for maintaining the status quo, that is, the rural character and farmland protection. In the Laurel Valley efforts to plan for community centered development, the community council favored strict land use planning, but feared "backlash among the residents in the area, many of whom resist government interference with property rights" (Bartlett & Boyer, 2009, p128).

4.3 Water Management and Conservation

The third study integrated here, focused on attitudes about water management and conservation in both Watauga and Ashe Counties. Increasing population coupled with recent droughts has put pressure on regional water supplies in the western North Carolina. Droughts in 2002-2003, 2007-2008, and 2010, temporarily reduced the available supply throughout the region. To effectively deal with these stresses on water supply, new policies and practices have been initiated, prompted by both state mandates and local pressure.

To assess public attitudes toward water management and conservation, a 51 question survey, including a willingness to pay question, was mailed in May 2013 to a random sample of 3000 Watauga and Ashe County residents. The survey consisted of a primary mailing, a post card reminder and a second mailing to all non-respondents of the first mailing. In the end, 2413 useable addresses and 714 responses were obtained for a response rate of 30 percent. The average age of respondents was 61 years and average income was $62,000. In the two counties in the sample, 24 percent of respondents have a high school degree or less, while almost half have one or more college degrees. Comparing this sample to US Census data from the counties, finds the respondents to be older, slightly more educated, and with higher income than the general population. Half of the respondents report having ancestors who lived in this region, 97 percent report their race as white, and 92 percent own their homes. Regarding water source, 64 percent report having their own spring or well, 19 percent share a well and 17 percent are on a municipal water supply. In Watauga and Ashe Counties, 36 percent and 19 percent, respectively, of the population is actually served by a public supply with the rest having access to a private source of some kind (Kenney et al., 2009; HCCOG, 2010).

Across all respondents, half reported that it is 'very important' for North Carolina households to use less water, 66% say that conservation is a topic they have frequently thought about in the past year, and about half are concerned that drought will limit the amount of water available. In assessing attitudes with an eye toward the last settler's syndrome across a range of questions, there are some key differences and similarities among respondents who report having ancestors in this region and those who do not (see Table 2). First, both groups say that community

growth should be limited to manage water scarcity, reflecting among all respondents a sense that those who are here are willing to keep newcomers out. Key differences among these two groups are that those respondents with ancestors in the region are much more likely to say that conservation measures should be voluntary rather than mandatory and they are less likely to pay a one time fee during droughts. These responses reflect attention to maintaining the status quo through the high value historically placed on treating resources as individual rather than community property and the resistance to regulation. Additionally, those with ancestors in the region are more likely to say that the economy should outweigh environmental concerns in water planning, perhaps reflecting a distinction between the productive value of resources and the aesthetic value.

Table 2. *Percentage of Respondents who Agree or Strongly Agree with the Attitudinal Statements about Water Management, Comparing Respondents with Ancestors in the Region and those Without Ancestors (Newcomers)*

	No Ancestor	**Ancestor**
Water conservation is an issue that I have thought about frequently in the past year.	.64	.68
I am concerned that drought will limit the amount of water available to me or my community.	.49	.49
Community growth should be limited to manage water scarcity.	.67	.68
Any development decision should include assessing the impact on the water supply.	.91	.89
Household water restrictions should be voluntary rather than mandated by the government.	.66***	.83***
Public money should be used to develop or acquire new water sources.	.71**	.63**
In water planning the health of the economy is more important than protecting the environment.	.19**	.27**
It is important to meter water use so that we know how much water we are using.	.72***	.56***
Local public officials (city/county) should have the final authority to make decisions about how our water supply is managed.	.49***	.32***
State public officials should have the final authority to make decisions about how our water supply is managed.	.17	.15
During serious droughts, like the one in 2007/2008 in North Carolina, I would support a one- time fee assessment on my water use.	.33***	.19***
There is enough water in the mountains of western North Carolina to meet future needs for all the people and business for the next 25 years.	.33**	.41**

** p=.05 level , *** p=.01 level.

When asked about the potential for various forms of economic development to affect the amount of water available, neither group expressed strong concern for economic development to affect their water supply. There were no differences between the two groups when reflecting on concern about general population growth, housing for full time residents or commercial development (see Table 3). Those with ancestors in the region were less concerned about second home development and tourism than those with no ancestors in the region. These results may reflect that because respondents with ancestors are more likely than those without to have an individualized water source (a private well or spring) that they perceive that tourism based development is less likely to impact their supply. This may also reflect that newcomers are more keenly aware of the potential implications of more in-migrants to the area and are therefore more concerned about protecting their status quo.

Table 3. *Responses Among those Respondents with Ancestors in the County and those Without to the Question: How Concerned are you About the Potential for each of the Following Demands on Water to Affect the Amount of Water Available (Water Supply) to your Community? Scale 1 = not at all concerned; 2= somewhat concerned; 3 = very concerned*

	No ancestors		**Ancestors**	
	Mean (n)	**Std. Dev**	**Mean (n)**	**Std. Dev**
General population growth	1.94 (343)	.63	1.94 (339)	.67
Housing development for full time residents	1.88 (340)	.68	1.87 (337)	.69
Second home development ***	1.93 (335)	.64	1.79 (336)	.70
Tourism/recreation**	1.86 (340)	.67	1.75 (334)	.74
Commercial development	1.77 (342)	.71	1.69 (338)	.75

** p=.01 level ** p= .05 level

To further assess attitude toward water conservation, the survey included a questions about the willingness to pay, that followed a dichotomous choice framework.

> Suppose that to implement water conservation measures county residents would pay a one-time payment of $A per household in higher county taxes. The money would be used to provide rebates to residents for the purchase of low flow toilets or rain barrels to help save water at home. The money would also be used to re-vegetate creek banks and install permeable pavement where feasible. These measures reduce runoff from storms and help with recharging the groundwater supply. The goal of the program is to provide more water security in the county and to ensure a more stable water supply that can ease stress during droughts. Suppose that this proposal to approve the tax and provide conservation measures will be on the next election ballot. Remember, if the proposal passes you would make a one-time payment of $A in higher taxes and you would have $A less to spend on other things. Also remember that if the referendum passes the conservation measures would be implemented and more water would be available in your county during times of drought.

Respondents then selected one of three options, for, against, or don't know. $A took on the values of $5, $20, $40, $80 or $150. Following the conservative approach, all "don't know" responses were coded as "no" responses (Groothuis and Whitehead, 2002; Caudill and Groothuis, 2005). The variable *Yes1* is a qualitative variable equal to one if the respondents answered 'for' to the question.. Table 4 shows the probit results.

Table 4. *Bivariate Probit Model Results Showing Likelihood of Voting 'Yes' on Public Water Conservation Tax*

Variable	**Yes1 Coefficient**
Constant	1.215 (1.53)
Log WTP Bid	-.439** (5.54)
Age	-.014** (2.13)
White	.459 (.80)
Female	.437** (2.41)
Education - Some College	.459** (2.18)
Education - Associates	.827** (2.40)
Education - Bachelors	.870** (2.96)
Education - Graduate	.869** (2.78)
Income	.006** (2.09)
Missing Income Dum	-.699* (1.82)
Own	-.411 (1.21)
Ashe	-.040 (.21)
Ancestor	-.716** (3.78)
City Water	.504** (2.00)
Shared Well	.539** (2.31)
Spring	-.152 (.50)
Chi squared	143.84**

*p=.10 **p=.05 (t-value in parenthesis) N=664

Note that the variable 'ancestor' is negative and significant, suggesting that respondents who had ancestors in the region are less likely to vote yes on the referendum. To get an understanding of the magnitudes of the effects of both the willingness to pay for public water conservation we use the Cameron (1987) technique to calculate point estimates of the median value of the WTP. The WTP for respondents who have ancestors in the mountains of North Carolina is $8 while for individuals who do not have ancestors are willing to pay $43. These results are consistent with the belief that newcomers are more comfortable with government services while long-term residents see even water conservation as a private matter. These results also reflect the last settler syndrome emphasis on maintaining the status quo, as water has not historically been regulated in this region.

5.0 Conclusion

In assessing a variety of issues across a 10-year span, the authors find that there are distinctions among residents whose families have lived in western North Carolina for generations compared to newcomers. Although the relationships among an individual's history in a place and attitudes toward land use, water conservation and economic development are complex, there is evidence to support the idea of the 'last settler's syndrome' in this region. There is, however, also evidence to suggest that

there are sites where all residents have common attitudes regarding resource management and growth.

The data reported here show that mountain views are important to all residents but acutely important to newcomers, especially individuals who retire to the region. These data help explain why residents in the Elk Knob region have standing offers for their land and continue to have real estate agents knock on their doors. The amenity "value" of their land is higher in terms of dollars than the traditional or status quo "value." The Elk Knob experience also seems to suggest a growing recognition that it only takes one large landholder in the community to agree to sell their property and the character of the entire region can change. Therefore, organizing for a longer-term, more strategic approach to land use decision-making is being explored within the community. While there is still resistance to any perceived loss of property rights, the results from the billboard and wind turbine project along with the Elk Knob experience offer some evidence that there may be increasing awareness that protecting the status quo of land use may require change in the status quo of land use *regulation*. In contrast, the water conservation survey reveals that there is still a strong sense among long-time residents that water use should not be regulated at all. This may be because unlike land use, water resources have not yet been under serious pressure for extended periods of time. If water resources become scarcer, there may be increased acceptance of more focused management.

The evidence presented here is relevant to efforts in this region to manage resources of all kinds. Better understanding where there may be conflict surrounding management options and where there may be common ground is valuable to a decision-maker. The studies highlighted in this article suggest that newcomers will not always be at odds with long-time residents. All residents' value mountain views and there is a moderate level of concern among residents with and without ancestors about future development The three studies suggest that the last settler syndrome may be present as all groups seem to have some level of concern about future in-migration. When there is agreement between groups, community planners would be wise to promote the harmonious relations so that when more contentious issues need to be confronted, all area residents may be more willing to work together. In cases when differing preferences create conflicts, attempts to identify common ground among various groups can potentially lessen the conflict. Building on a shared appreciation for the aesthetic value in their community may be a good place to begin building positive relationships. More research and projects with such a focus could potentially alleviate negative environmental and social impacts from residential development in rural resort regions, benefiting both newcomers and long-term residents.

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