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Green Migration into Rural America: The New Frontier of Environmentalism?

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This article proposes that shifts in rural population and economic growth patterns may help explain rising levels of support for environmental values in many rural areas. In particular, it assesses a model of "green migration" that assumes that domestic in-migration, with its impacts on the character and composition of rural communities, is one of the reasons environmental values may be gaining support in rural America. Results based on survey data obtained from two groups of rural residents of southern Appalachia lend support to the model. A majority of the in-migrants to the region came because of its environment, and protecting environmental values remained a high priority. In-migrants are a bit more knowledgeable about environmental issues, more concerned about the environment, place higher priority on environmental protection, and are more engaged in activities that

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promote environmental values than nonmigrants. Knowledge of the socio-demographic characteristics of both groups of rural residents is key to understanding how they differ on several indicators of environmentalism.

Keywords environmentalism, greening of rural America, in-migration, rural population growth, scenic rural areas

As the postmodernist dream of a virtual global village becomes more of a reality, an age-old dream remains deeply embedded in the American psyche. It is manifested in the yearning for a quiet place in the country where the water and air are pure, the land is bountiful, and people live together in relative peace and harmony. Generations of Americans have seen this promised land in days spent at "Mayberry," "Walton Mountain," and "Lake Woebegon." These images of a wonderful life have helped to create a rural mystique that has seduced millions of Americans to trade in the promises of "Oz" for a few "green acres" in the country. After World War II many of these pilgrims abandoned the big cities, hoping to find a more pleasant life in the suburban hinterlands. But by 1970 more Americans lived in the suburbs than the cities (Mitchell 2001), and many of these prefabricated "Pleasantvilles" were rapidly being consumed by urban sprawl.

Over the last few decades, these and other factors drove a new wave of "urban refugees" onto the scenic routes of America in search of their own piece of heaven that was closer to nature and to the rural frontier (Jobes 2000; Johnson and Beale 1998). These "green migrants" to scenic rural areas bring new ways of doing things that seem to challenge traditional rural values and lifestyles. Many have unrealistic expectations about what their new environment and life should be like, and their unfulfilled dreams can quickly turn into nightmares that can impact their own quality of life and the lives of other rural residents (Jobes 2000).

Our article explores some of these issues and proposes that a specific type of rural in-migration, which we call *green migration*, may help explain rising rural support for environmental values over the last few decades and other growth-related changes impacting scenic rural communities in the United States. First, it briefly reviews trends in population and economic growth that seem to be changing the character and composition of many rural communities in the United States and Southern Appalachia. Next, it presents an overview of the literature on the greening of rural America. It then presents a model of "green migration" and assesses several hypotheses associated with it by using telephone survey data obtained from rural residents living in southern Appalachia.

Trends in Population and Economic Growth in Rural America and Southern Appalachia

A number of recent studies note that the unexpected widespread population growth in rural areas that began in the 1970s (Wardwell and Brown 1980) and ebbed during the 1980s was strongly revived in the 1990s (Johnson and Beale 1998; 1999; Fuguitt and Beale 1996; Fulton et al. 1997). In fact, population growth occurred in three out of four rural counties during the 1990s, and a significant proportion of it has been attributed to domestic migration (Johnson and Beale 1999). This "rural rebound" appears to confirm that a fundamental "structural" shift in historic patterns of the migration of people and resources from rural to urban areas is occurring in the United States (Johnson and Beale 1998; 1999; Fuguitt and Beale 1996; Fulton et al. 1997).

Rural in-migration patterns also appear to be less driven by economic factors and more by quality-of-life considerations than they were in the past (Fly 1986; Sofranko and Williams 1980). Upwardly mobile Americans are moving to higher quality environments offering lower population densities, clean air and water, scenic beauty, and recreation opportunities. Aging "baby boomers" are seeking refuge from urban problems and suburban sprawl in the small towns, and in rural communities surrounding public lands, parks, lakes, mountains, and forests. The better educated, the more affluent, and the elderly continue to flock to these areas, and increasingly, younger adults are working and living in these communities. These "natural amenity" communities also have a distinct economic advantage over more remote rural communities and others that are more dependent on natural resource extraction because they can attract and retain more businesses (Goetz et al. 1996; Johnson and Rasker 1995). Consequently, their economies are diversifying, and they are beginning to resemble the structural characteristics of the national economy. Finally, many of these recreation and retirement communities are located on the rural–urban fringe and have been strong magnets for in-migration for the last three decades (for reviews, see Daniels 1999; Cromartie 1997; Frey 1997; Fuguitt and Beale 1996; Fulton et al. 1997; Galston and Baehler 1995; Johnson and Beale 1999).

Perhaps no other rural region of the United States has been as dramatically transformed over the last few decades as southern Appalachia. More than 2 million people left the region between 1950 and 1970, mainly because of hard times caused by the loss of jobs from the mechanization of the coal mining industry, sharp declines in agriculture and manufacturing, and a shift from rail to highway transportation. While the region still has few metropolitan areas and remains mostly rural, many conditions have significantly improved (Jones et al. 1999). Job growth in southern Appalachia is increasing faster than in several other regions and the nation as a whole. Poverty rates in southern Appalachia have been cut in half since 1970, and rural unemployment rates are lower than in every region of the country except the Midwest and the Plains. Since 1970, all of the states in the region (Virginia, North Carolina, South Carolina, Tennessee, Georgia) except Alabama and West Virginia have population growth rates that exceed the nation as a whole. Three of the states (Georgia, Tennessee, and North Carolina) rank in the top 10 states for net domestic migration (Johanson 1996). Moreover, much of the population growth in southern Appalachia has been due to the arrival of in-migrants who were attracted by the region's high quality of life, rural mystique, and expanding and diverse economy (Cordell et al. 1996). Many of them have moved to rural areas around the region's two national parks (Great Smoky Mountains, Shenandoah), the Appalachian Trail, the Blue Ridge National Parkway, the Little River Canyon National Preserve, eight national forests, and along the banks of the region's many lakes and rivers (Cordell et al. 1996).

The Greening of Rural America

Although research on the social bases of environmentalism in the United States has historically found that urban residents are more concerned and supportive of environmental values than rural residents (Van Liere and Dunlap 1980), a growing number of recent studies have found few or no rural–urban differences (for a review see Jones et al. 1999). Several analysts have suggested recent shifts in rural

population and economic growth patterns, and a general greening of American lifestyles, are related to this rising support for environmental values in many rural communities (Cordell et al. 1996; Fortmann and Kusel 1990; Jones et al. 1999).

Perhaps the most influential rationale used in the past to explain differences in rural–urban environmental values has been the "extractive-commodity" hypothesis. It assumes that utilitarian values are held more strongly by rural residents because their economic livelihoods depend more on the extraction and use of natural resources. From this perspective, rural residents, especially those employed or affiliated with natural resource–extractive industries, agriculture, and ranching, should be significantly less concerned about environmental protection than urban residents (Van Liere and Dunlap 1980; Mohai and Twight 1986). More recently, the extractive-commodity thesis has been challenged (Jones et al. 1999) because economic dependency on the extractive-based sector has significantly declined in the nation and in rural America since 1970 (Beale 1980; Hays 1991; Fortmann and Kusel 1990; Bennett and McBeth 1998; Rudzitis 1996). Several recent studies even suggest that a proenvironmental shift is occurring among people employed in resource-extractive industries and related occupations, such as the U.S. Forest Service (Apple 1996; Xu and Bengston 1997). These trends suggest that it will be increasingly inaccurate to portray rural residents as being less concerned about environmental quality than urban residents due to their stronger ties to resource-extractive industries (Jones et al. 1999).

These trends are supported by a growing number of urban residents migrating to rural areas that offer a range of natural amenities. Population growth in these scenic rural communities is significant, but less rapid than the earlier energy-induced boomtown growth in the western United States and Canada (see Finsterbush and Freudenburg 2002; Freudenburg and Jones 1991) because it tends to occur over a longer period. Increased in-migration to these rural places may also be helping to accelerate the general greening process in these communities, and helping to narrow the rural–urban gap in environmental values (Bennett and McBeth 1998; Daniels 1999; Galston and Baehler 1995; Jones et al. 1999; Rudzitis 1996).

Research on scenic rural areas has mostly focused on factors underlying potential community conflicts. Drawing largely from the classical sociological theory on population growth and community change, researchers have proposed that community conflict in rural areas experiencing reverse migration is due to difference of values toward the environment, population growth, and development between newcomers and long-standing residents. Sociodemographic characteristics of the newcomers such as higher levels of education and income are also assumed to increase the likelihood of these differences (Price and Clay 1980). Various theoretical rationales associated with this "culture clash" thesis have been subsequently used to explain possible conflicts between these two groups of rural residents (for reviews see Blahna 1990; Smith and Krannich 2000). Though significant group differences in values and other social characteristics have been reported, the differences have not been as pronounced as had been expected (Smith and Krannich 2000). These less-than-expected differences may be because many earlier studies that examined the culture clash thesis did not distinguish amenity growth from energy-related growth or other forms of reverse migration growth (Smith and Krannich 2000; Jobes 2000).

Other theoretical and empirical challenges have also cast doubt on the overall validity of the cultural clash paradigm. Perhaps the earliest challenge came from Blahna's (1985; 1990) work that examined relationships between environmental

conflicts and population growth in nine rural counties in Northern Lower Michigan during the 1970s. He found that environmental conflicts increased in these counties but found little support for the culture clash thesis, primarily because he found few differences between newcomers who had migrated to the region after 1965 and long-term rural residents on several measures of environmental attitudes. However, he did find that newcomers (mostly urbanites from southern Lower Michigan) were more politically active in various behavioral facets of environmentalism (e.g., membership in an environmental group, signing petitions, joining or donating money, and attending public hearings). Consequently, Blahna argued group differences in attitudes may not be the only factors that fuel environmental conflict in areas of reverse migration. Instead, he proposed that environmental conflicts may also stem from the "cultural infusion" of leadership and organizational skills into the receiving rural community. Moreover, he believed that the infusion of these skills into these communities may lead to either cooperation or conflict between newcomers and long-term residents, depending on the level of social integration, the particular nature of the issues, and the social, economic, and environmental characteristics of the receiving community. Overall, Blahna's work demonstrates that (1) environmental conflicts in areas of reverse migration may not just be due to attitudes, (2) environmental conflicts may not always occur between newcomers and long-term rural residents, and (3) the cultural clash model oversimplifies the relationship between environmental conflict and population growth in areas experiencing reverse migration.

Other researchers have generally agreed with these conclusions. Fortmann and Kusel's (1990) "new voices" thesis postulates that in-migrants have not imported new environmental values into rural areas but have "given voice to already existing ones" by providing new organizational skills and political strategies to the quest for healthy ecosystems and rural communities. Together, these so-called "new voices" are thought to challenge the "old voices" that represent procommodity interests by having increased influence over the decisions made by local natural resource agencies. Fortmann and Kusel's study subsequently found that newcomers who lived in the rural areas for less than 10 years scored higher then long-standing residents on environmental attitudes in four northern California samples, but that these differences were significant only in one sample (i.e., Tahoe National Forest contacts). Consequently their study provided little support for the culture clash thesis since it revealed only minimal group differences on environmental values.

Smith and Krannich's (2000) study assessed the "culture clash" and the "gangplank" hypotheses. The "gangplank" hypothesis is related to the "culture clash" hypothesis in that it assumes conflicts will occur between long-standing residents and newcomers in rural communities that are experiencing amenity-related growth and development. It further specifies that newcomers are more opposed to future population growth and development than long-standing residents because they are more likely to see their area as a place of refuge from the negative impacts of growth and development experienced in their previous place of residence. Consequently, newcomers are thought to be more willing to pull up the gangplank (or drawbridge) on any new growth and development that is trying to "invade" their rural refuge (see Smith and Krannich 2000).

Two of the three rural communities that Smith and Krannich (2000) examined in the Rocky Mountain West (Teton Valley, ID; Moab, UT) were experiencing amenity-related growth, while the third one (Vernal, UT), had experienced energy-related growth during the 1970s. They found no significant differences in

environmental attitudes among newcomers (i.e., less than 5 years of residence) and longstanding residents (i.e., 5 or more years of residence) in Vernal and Teton Valley, although newcomers had a higher level of environmental concern in Moab. They also found greater concern for population growth and economic development among long-standing residents of Teton Valley, and that long-standing residents of Moab were less likely to support more tourism. According to the authors, this last set of findings runs counter to the "gangplank" hypothesis that assumes that newcomers are more against growth and development. Instead, the authors speculate that perhaps growth and development may pose greater threats to long-standing residents' sense of personal and community identity. They conclude that although differences may exist between newcomers and long-standing residents in areas of reverse migration, they tend to be exaggerated by the media and others, and that the two groups of rural residents may actually share more common ground.

Green Migration Into Rural America

Our conceptualization of "green migration" into Rural America draws upon the literature just cited on changing trends in rural population and economic growth and rural support for the environment, and it is built upon the general tenets of Blahna's (1990) "cultural infusion" and Fortmann and Kusel's (1990) "new voices" formulations. Its basic premise is that a general greening of America has led to greater support for environmental values and increased environmental activism in many rural areas. These changes, however, should be more apparent in rural scenic areas that have grown rapidly since 1970 due to the influx of people who are seeking a better environment and an overall higher quality of life. This type of migration, which we call *green migration*, is thus assumed to be part of a general greening process that is gradually changing many rural communities in the United States (for a review see Buttel 1993).

Green migration can result in significant impacts for rural communities and the environment. For example, newcomers require more sewer, septic, and water systems, roads, schools, hospitals, and fire and safety services, which result in more land being developed for each new rural resident and higher taxes for businesses and homeowners. This type of low-density development and population growth also contributes to farmland conversion, soil erosion, riparian damage, habitat loss, water pollution, and other environmental problems (for reviews see Daniels 1999; Olson and Olson 1999).

Green migration can also gradually change the composition and demographic structures of the receiving communities since in-migrants usually do not share similar sociodemographic characteristics of long-standing rural residents (Jobes 2000). Instead they tend to be better educated and more politically active in environmental issues than long-standing residents (Fortmann and Kusel 1990; Jobes 2000). Green migration can also gradually change the value structures of the receiving communities. For example, natural-amenity migrants can energize rural communities with new ideas and new ways of doing things that can challenge preexisting rural power structures (Blahna 1990; Fortmann and Kusel 1990). They can do this by helping to build stronger organizational and political skills and increasing the economic and technical expertise within the community (Blahna 1990; Fortmann and Kusel 1990). These more formal community-building capabilities can help nurture new coalitions between migrants and long-standing residents (Jobes 2000). Many of these groups will focus on "quality of life issues" that will help to increase the salience

and support for environmental values in these rural communities. As these new coalitions mature, they may become more effective at challenging procommodity interests and other political and economic interests that have tended to dominate rural discourse in the past. Thus, our model assumes that conflicts that may arise in these communities are more likely to happen because of different *value priorities* between proenvironmental supporters and traditionally more powerful land management groups than due to *value conflicts* that are just between newcomers and long-standing rural residents (Jobes 2000).

Our model of green migration thus diverges from other researchers who have assessed the "cultural clash" thesis by identifying sociodemographic and value differences between newcomers and long-time rural residents. Moreover, these studies have conceptualized "long-time residents" in a variety of ways. For example, long-term rural residents have been conceptualized as being those that lived in rural areas for 5 years or more (Smith and Krannich 2000), 10 years or more (Fortmann and Kusel 1990), or before the first wave of rural in-migration began in 1970 (Blahna 1990). As such, studies have lumped lifelong residents with different groups of rural migrants. This may be a problem since traditional rural lifestyles and values should be more deeply rooted in lifelong residents than in earlier or later migrants. Although these group differences may narrow over time, we still would expect that more lifelong residents are employed or affiliated with natural resource industry, farming, and ranching, are less educated and affluent, and are less active in promoting environmental values than in-migrants in general. Based on research on the social bases of environmentalism (Jones and Dunlap 1992; Greenbaum 1995), we would also expect that these differences would translate into higher levels of environmental awareness and concern and greater personal and public support for environmental values among in-migrants. Overall, we would expect that lifelong rural residents and in-migrants generally place a high priority on protecting and preserving the environment in their overall value structures, but in-migrants place these values relatively higher.

We assessed several basic assumptions associated with our model of green migration with data obtained from a telephone survey of nonmetropolitan rural residents living in Southern Appalachia. These include the following six hypotheses:

H1. In-migrants are more likely to have moved to the region primarily for quality-of-life reasons rather than for economic reasons.
H2. In-migrants are better educated than lifelong residents (i.e., "nonmigrants").
H3. In-migrants have higher household incomes than nonmigrants.
H4. Nonmigrants are more likely to be affiliated or employed in the natural resource industry, farming, and ranching than in-migrants.
H5. In-migrants are more aware of and concerned about environmental problems facing the region.
H6. In-migrants are more personally and politically active in promoting environmental values than nonmigrants.

Methods

Survey Procedures and Sampling

Telephone interviews were conducted by the Human Dimensions Research Lab at the University of Tennessee. Households were selected through random-digit

dialing using telephone numbers purchased from Survey Sampling, Inc., of Fairfield, CT. Interviews were requested with the household member 18 years of age or older who had the most recent birthday. Based on a stratified sample design, 135 counties were selected from 7 states (Virginia, West Virginia, North Carolina, South Carolina, Tennessee, Georgia, and Alabama). These 135 counties conform to the boundaries of the Southern Appalachian International Biosphere Reserve. The counties were divided into four geographic subregions (Northern Ridge and Valley, Blue Ridge, Southern Ridge and Valley, Southern Mountain–Piedmont) that run primarily north and south along the Appalachian Mountains (Cordell et al. 1996). Each subregion was then divided using rural–urban codes for metropolitan and nonmetropolitan counties developed by Butler and Beale (1994), resulting in eight strata (four rural and four urban). A sample quota of 150 participants per stratum (a total of 1200) was used to ensure an equal sample size for rural and urban residents and to represent the geographic distribution of residents across the region. A total of 2829 telephone numbers was called with a raw response rate of 46% (including 1239 completed and 50 partially completed surveys).[1] The final sample of 1239 respondents had a margin of error of ±3%.

Questionnaire Content and Measures

The questionnaire was part of a comprehensive assessment of the Southern Appalachian Ecoregion. It included questions designed to tap into several dimensions of environmentalism and to identify the sociodemographic characteristics of households and survey respondents.

Rural Residence

Rural residence has been conceptualized and measured in a variety of ways (see Butler and Beale 1994; Flora et al. 1992). Consequently, there is no standard way to conceptualize and test rural support for environmental values. The rural residence measure used in this study was conceptualized based on two conditions. A respondent was considered a "rural resident" if he or she lived in a nonmetro county within any of the four rural subregions of Southern Appalachia and described place of residence in the survey as being either a "farm" or a "rural" area. These procedures resulted in a pool of 357 rural residents living in nonmetro counties of the region. Analysis of two additional survey questions determined that 63% of these rural residents ($n = 226$) lived in the region all of their lives and that 30% of them ($n = 109$) were in-migrants who had moved to the region since 1970. The rest ($n = 22$) had migrated into the region before 1970, when in-migration rates began to significantly increase from "quality-of-life" considerations, and consequently their responses were excluded from further analysis. These procedures left two sets of "rural residents." Their responses were used to test hypotheses 2–6. "Nonmigrants" were assigned a 0 and represent rural residents living in nonmetro counties who are native to the region ($n = 226$ or 67%). "In-migrants" were assigned a 1 and represent rural residents living in nonmetro counties of the region who have moved to the region since 1970 ($n = 109$ or 33%).[2]

Eight other demographic variables were used to test hypotheses 2, 3, and 4, to identify any other compositional differences between in-migrants and nonmigrants, and to serve as control variables in the multivariate analysis on measures of environmentalism. Most were standard demographic variables (e.g., age, education, gender) found to be related to environmentalism (Jones and Dunlap 1992).

In addition, a survey question asked in-migrants the most important factor affecting their decision to move to the region. It was used to test the first hypothesis that assumes that significantly more in-migrants moved to the region for quality-of-life considerations than for economic factors.

Cognitive, Affective, and Behavioral Indicators of Environmentalism

A review of the literature suggests a multiplicity of ways in which environmentalism has been conceptualized and measured. However, there appear to be three broad expressions, one cognitive in nature, another affective, and a third behavioral, that seem to fairly represent the major facets of environmentalism (for a review, see Dunlap and Jones 2002). We used the following measures to tap into environmentalism, and each served as a dependent variable.

Cognitive Indicator

Environmental knowledge. An environmental knowledge index was composed of 13 true–false items and included general questions about wildlife, endangered species, forests, and water pollution, and more specific questions on these issues framed within a regional context. Questions ranged from difficult to easy. Persons answering incorrectly or who "did not know" the answer were assigned a value of 0. Those responding correctly to an item were assigned a value of one. The internal consistency of the environmental knowledge index was satisfactory, with an alpha reliability of .61.

Affective Indicators

Environmental concern. A seven-item environmental concern index was composed of Likert-type items that included statements gauging public concerns about the Endangered Species Act, the Clean Water Act, the Clean Air Act, wilderness, habitat preservation, and industrial pollution. Each item was coded 1–5 to reflect the degree to which respondents were concerned about these issues. The internal consistency of the index was satisfactory, with an alpha reliability of .73.

Relative environmental concern. This question asked respondents to rank their degree of concern about protection of the natural environment from "most" concerned to the "least" concerned compared to three other issues ("reducing the national debt," "reforming health care," and "reducing crime"). The four issues were randomly ordered in the survey. Higher scores on this measure reflect greater concern for the environment *relative* to the three other social issues.

Behavioral Indicators

Environmental behavior. This index was composed of five items and indicates the frequency with which respondents performed personal behaviors over a two-year period that promoted environmental values and environmentalism. These behaviors included recycling, purchasing products based on the amount of packaging, switching to products for environmental reasons, watching TV programs about the environment, and reading books or magazines about the environment. The internal consistency of the index was satisfactory (alpha = .71).

Environmental activism. This index was composed of six "yes/no" items and reflects the degree to which people have engaged in social and political activities over the past 2 years that promoted environmental values and environmentalism (writing

to public officials, voting for proenvironmental candidates, attending meetings, contributing money to environmental groups, participating in cleanups, and/or subscribing to environmental publications). A "no" answer for any item was scored 0, while a "yes" answer was scored 1. The internal consistency of the index was satisfactory (alpha = .66).

Design of Analysis

Student's *t*-tests were used to test for statistical differences between the two groups of nonmetro rural residents on the social-demographic variables and on the five measures of environmentalism. Bivariate and partial correlation analyses were used to identify significant relationships between rural residence and the five indicators of environmentalism. Partial correlation analyses were used to identify significant relations between two variables after controlling for the linear effect of all other variables included in each analysis of the dependent variable.

Results

First, we identify the major reasons in-migrants moved to the region. Then we identify compositional differences between in-migrants and nonmigrants. Finally, differences between in-migrants and nonmigrants on cognitive, affective, and behavioral indicators of environmentalism are presented.

Reasons for Migrating to Southern Appalachia

A significant proportion (one-third) of rural residents had migrated to southern Appalachia. The most important reason for a majority (57.5%) of them to move to the region was its quality of life. Jobs were the most important reason for migrating to the region for only about one-fourth (23.6%) of the in-migrants. An analysis of open-ended responses was used to identify the specific attributes that attracted those who moved for quality-of-life reasons. It revealed that almost two-thirds of these residents mentioned qualities associated with the region's biophysical environment, such as its mountains, rivers, landscapes, and wildlife, and its lower population density. The remaining in-migrants mentioned qualities associated with the region's social environment, such as the character of its people, its communities, and its lower crime rates. These findings lend strong support to our first hypothesis, which assumes that significantly more in-migrants moved to the region for quality-of-life considerations rather than for economic concerns. They also support research that suggested natural amenities are strong magnets for rural population growth in southern Appalachia (Cordell et al. 1996) and for other rural areas of the nation (Johnson and Beale 1999).

Compositional Differences: In-Migrants and Nonmigrants

Table 1 presents frequencies for the two groups of rural residents for the eight sociodemographic variables examined. In the table some of the original categories for household income and education were combined, and age was transformed into categories to simplify data presentation. Tests on the group means lend support to the notion that in-migrants to scenic rural areas do not always share the same sociodemographic characteristic of nonmigrants. Although both groups are composed

TABLE 1 Sociodemographic Profile of Nonmetro Rural Residents of Southern Appalachia

	In-migrants	Nonmigrants
Percent of rural residents	33.0%	67.0%
Age (years)		
18–34	19.8%	26.2%
35–44	24.5%	27.6%
45–64	40.6%	33.8%
65 or more	15.1%	12.4%
Educational level[b]		
Less than a high school diploma	9.2%	15.2%
High school diploma	22.9%	41.5%
More than high school diploma	67.9%	43.3%
Household income level[a]		
Less than $25,000	34.0%	37.7%
$25,000 to $54,999	48.0%	48.1%
$55,000 or more	18.0%	14.2%
Gender		
Female	58.7%	60.4%
Male	41.3%	39.6%
Race/ethnicity		
Non-Hispanic white	96.3%	93.8%
Other	3.7%	6.2%
Political ideology		
Conservative	75.0%	78.5%
Liberal	25.0%	21.5%
Rural landownership[b]		
Yes (20 acres or more)	22.0%	38.3%
No	78.0%	61.7%
Affiliated with natural resource industry, farming, or ranching[b]		
Yes	9.1%	26.2%
No	90.9%	73.8%

[a]Significant, $p < .05$.
[b]Significant, $p < .001$.

largely of political conservatives and non-Hispanic whites, and have more females than males, their overall profiles suggest important sociodemographic differences. As expected, in-migrants are better educated, more affluent, and less likely to be employed/affiliated with the natural resource industry, farming, and ranching.

All these findings are relevant to this study because they have been linked to proenvironmental behavior, environmental activism, and other expressions of environmentalism (Jones and Dunlap 1992). Nonmigrants also own more rural land than in-migrants. Though overall differences in age between the two groups were not significant ($p = .16$), in-migrants tended to have slightly more "baby boomers" and elderly people in their group than nonmigrants.

Environmental Cognition, Affect, and Behavior

A summary description of the five variables used to tap the cognitive, affective, and behavioral expressions of environmentalism and a statistical summary of the results are presented in Tables 2 and 3.

Cognitive Indicator

Environmental knowledge. The mean scores indicate that in-migrants and nonmigrants in the region share a relatively low level of knowledge on regional environmental issues. Neither group of rural residents could answer more than 40% of the questions correctly. Group mean scores for the environmental knowledge index reveal that in-migrants are more knowledgeable about environmental issues but that these differences do not reach statistical significance ($p = .11$). This does not support the idea that in-migrants are more aware of environmental problems than nonmigrants.

The findings based on the correlation analyses are presented in Table 3. The bivariate correlation analysis for the environment knowledge index confirms that some group differences exist but not at the designated levels of significance. Partial correlation analysis reveals that these apparent group differences are largely due to

TABLE 2 Cognitive, Affective, and Behavioral Indicators of Environmentalism by Nonmetro Rural Residence

Indicator	Items	Range[a]	Mean[b]	SD	N[c]
Environmental knowledge	13	0–13			
In-migrants			5.5	2.4	109
Nonmigrants			5.1	2.4	226
Environmental concern	7	7–35			
In-migrants			26.8[e]	4.5	92
Nonmigrants			25.5	4.3	181
Relative environmental concern	1	1–4			
In-migrants			2.6[d]	1.0	106
Nonmigrants			2.4	1.0	209
Environmental behavior	5	0–15			
In-migrants			11.2[f]	3.4	104
Nonmigrants			9.5	3.3	219
Environmental activism	6	0–6			
In-migrants			2.5[e]	1.9	106
Nonmigrants			1.9	1.7	222

[a]Figures represent the maximum and minimum scores that were possible on each indicator of environmentalism.

[b]Figures represent the group mean scores on each indicator of environmentalism with higher scores reflecting higher levels of environmentalism.

[c]Figures represent the total number of cases included in the analysis of group means for each indicator of environmentalism. The number of cases included the analysis of the environmental concern indicator is slightly lower than the rest due to a higher number of missing values.

[d]Significant, $p < .10$.

[e]Significant, $p < .010$.

[f]Significant, $p < .001$.

TABLE 3 Correlation Coefficients for Nonmetro Rural Residence With Selected Indicators of Environmentalism

	Cognitive	Affective		Behavioral	
	Environmental knowledge	Environmental concern	Relative concern	Personal behavior	Environmental activism
Bivariate	.066	.141	.090	.226	.150
N	335	273	315	323	328
Probability	.114	.010[b]	.056[a]	.000[c]	.003[c]
Partial	.011	.090	.110	.201	.117
N	208	208	208	208	208
Probability	.439	.098[a]	.057[a]	.002[c]	.045[b]

Note. Significant positive bivariate correlation coefficients signify that nonmetro rural residents who have migrated to the region score significantly higher on the indicator than do nonmetro rural residents who are native to the region. Significant positive partial correlation coefficients represent this relationship after controlling for the effects of age, education, household income, occupation, and rural land ownership. *N*, Figures represent the total number of cases included in each bivariate correlation analysis based on pairwise deletion of missing values.

[a]Significant (one-tailed probability), $p < .10$.

[b]Significant (one-tailed probability), $p < .05$.

[c]Significant (one-tailed probability), $p < .001$.

the effects of the other sociodemographic variables (i.e., age, education, household income, occupation, rural land ownership). Additional partial correlation analysis revealed that education accounted for most of the observed differences between the two groups on the environmental knowledge index as general environmental concern literature would predict. As reported earlier, in-migrants have a higher level of education than nonmigrants in the region. Consequently, knowledge of the educational backgrounds of both groups of rural residents may be key to understanding how they vary on their knowledge about environmental issues facing the region.

Affective Indicators

Environmental concern. The figures presented in Table 2 reveal significant group mean differences on the environmental concern index. Although both groups of rural residents share a proenvironmental stance, in-migrants appear to be slightly more concerned about environmental issues affecting the region than nonmigrants. These group differences are statistically significant ($p < .01$). Bivariate correlation analysis confirms a significant difference between in-migrants and nonmigrants on the environmental concern index. These differences are not as distinct, however, after the effects of the five sociodemographic variables are controlled in a partial correlation analysis.[3]

Relative environmental concern. Mean scores on this single-item measure indicate that concern for environmental protection enjoys a moderate-to-high level of importance among both groups of rural residents. In-migrants appear to place higher priority on protecting the environment compared to nonmigrants.[4] Both the bivariate and partial correlation analyses confirm that in-migrants appear to place higher priority on protecting the environment relative to other public concerns than nonmigrants.

Behavioral Indicators

Environmental behavior. Mean scores on this index suggest that both groups of rural residents generally share a moderate to high level of participation in proenvironmental activities such as recycling, buying green products, and other personal behaviors. Participation in these behaviors is, however, higher among in-migrants than it is among nonmigrants. These mean differences are also statistically significant at the highest level.[5] Both bivariate and partial correlation analyses confirm that significant differences exist between in-migrants and nonmigrants on the environmental behavior index. Overall, in-migrants appear to have higher levels of participation in proenvironmental behaviors than nonmigrants.

Environmental activism. Mean environmental activism scores indicate that both groups of rural residents are not very active in the political and social aspects of environmentalism. However, in-migrants appear to be relatively more active than nonmigrants and these differences are statistically significant ($p = .003$). Bivariate and partial correlation analyses confirm significant group differences. These group differences were somewhat diminished in the partial correlation analyses when the effects of the five sociodemographic variables were controlled.[6] Thus, the combined findings on environmental behavior and activism lend support for the idea that in-migrants generally tend to be more behaviorally and politically active in promoting environmental values than migrants (Blahna 1990; Fortmann and Kusel 1990).

Summary and Discussion

The overall results of the study lend support to our basic model of "green migration," which assumes that environmental values may be gaining strength in rural areas due to the influx and influence of in-migrants. It found that a significant proportion (33%) of the rural residents had migrated to southern Appalachia. Both in-migrants and nonmigrants are largely composed of non-Hispanic whites and political conservatives but are significantly different on other important sociodemographic characteristics. Compared to nonmigrants, in-migrants are better educated, more affluent, are less likely to be associated with extractive-based industries, and own less rural land. As a group, in-migrants also appear to be slightly older than nonmigrants. These findings provide some evidence to support the idea that the composition of some rural communities may be gradually changing due to in-migration.

Value priorities in rural areas of southern Appalachia may also be changing. The majority of in-migrants moved to rural areas of the region primarily for quality-of-life reasons and particularly for qualities associated with its biophysical environment rather than economic considerations. This suggests that many in-migrants were willing and able to trade off income for better environmental conditions (see Polachek and Siebert 1993). Furthermore, in-migrants are slightly more concerned about the environment, place higher priority on environmental issues, are more engaged in activities that promote environmental values than nonmigrants, and appear to be a bit more knowledgeable about environmental problems facing southern Appalachia. Knowledge of the sociodemographic background of both groups of rural residents was also a key for understanding how they differed on many of these indicators of environmentalism. Overall, a majority of in-migrants

came to the region because of its environment, and protecting these values remains a high priority for them.

The most striking differences between the two groups were found on the behavioral indicators. As expected, in-migrants have higher levels of participation in personal behaviors and are more engaged in social and political activities that promote environmental values. These group differences were diminished after the effects of other socio-demographic variables were controlled, but remained significant. As a group, in-migrants devote more time and resources to individual and group activities that promote environmental values than nonmigrants.

Our study clearly demonstrates that rural nonmigrants are concerned and committed to environmental values, but that they may place relatively less priority on them than do in-migrants. Even these differences are small and they appear to share much more common ground with in-migrants than proponents of the cultural clash paradigm have assumed. Whether or not these small differences will lead to conflicts in these rural communities can only be answered by future research. For now, we can only speculate that some lifelong residents may feel threatened by certain types of developments associated with rural population growth. For example, because older lifelong residents tend to have more of their wealth tied to real estate, and especially in farmland and forests, they may have more economic pressures to sell this land since its sale may mean financial well-being and a secure retirement. These pressures may be manifested into stronger political opposition against tighter land-use controls and zoning regulations by this group of nonmigrants. Other nonmigrants may oppose the loss of agricultural and forest land to development because they want to preserve the cultural legacies and the environmental quality of their rural communities (Smith and Krannich 2000). Some in-migrants may side with this latter group of nonmigrants, but on other types of development, especially those that increase the capacity and convenience of community services, they may not (Jobes 2000). Future research will need to specify which types of rural developments and under what conditions lead to cooperation or conflict between different groups of rural residents.

If nonmetropolitan growth trends persist, then we would expect that rural areas that are retirement havens, those that provide a variety of outdoor recreational opportunities and natural amenities, rural communities located next to metro areas, and ones with diversifying economies should become even "greener" in the future.[7] Generalizing our findings to all rural areas, however, should be done with caution. Other rural areas may not strongly correspond to the sociodemographic, economic, cultural, and environmental conditions operating within southern Appalachia (see White 1998; Smith and Krannich, 2000). Inferences to remote rural counties and to rural areas strongly dependent on agriculture and extractive-based industries would be most suspect (see Caroll 1995). Although the social and biophysical processes operating in rural areas are quite diverse, we do know that this apparent "greening" through in-migration is not limited to rural areas in southern Appalachia, nor is it confined just to the United States (Harper 1993; Folkesdotter 1993).

Overall, our study and others like it (e.g., Blahna 1990; Fortmann and Kusel 1990; Smith and Krannich 2000), illustrate that it is hardly a foregone conclusion that any conflicts that may arise in these rural communities will only be due to value conflicts between long-term residents and newcomers. Indeed, the research suggests that there is also a potential in these communities for cooperation and deeper relationships to develop between rural people and the land. For this to happen, lifelong residents, in-migrants, and other stakeholders would have to be willing, and

able, to work together to design a new "rural ecology," one that would integrate their many interests while remaining firmly rooted to the land, its cultural heritage, and to all of its inhabitants. In this way, rural America of the 21st century might just be the "new frontier" from which a greener and a deeper form of environmentalism may emerge.

Notes

1. The region is a major target for telemarketers, and a raw response rate of 46% is about average for a telephone survey conducted among the general public in the region (Jones et al. 2000). Most refusals were immediate hang-ups, and when the targeted individual within the household (i.e., the one who had the last birthday) was contacted the response rate jumped to 70.1%. Thus, the raw response rate represents a more conservative figure.

2. It is estimated that more than one-half of the in-migrants to nonmetropolitan areas come from suburban areas in metropolitan counties while the remaining in-migrants come mostly from central cities in metropolitan counties (U.S. Census Bureau 2000).

3. Additional partial correlation analyses revealed that the magnitude of this relationship was diminished primarily due to the effects of education on environmental concern. Higher levels of education among in-migrants apparently increase concern for the environment and amplify existing group differences on this facet of environmentalism.

4. Additional analyses revealed that in-migrants ranked concerns about environmental protection second, while nonmigrants ranked them third, among the four public concerns examined.

5. Additional analyses performed on individual items in the environmental behavior index revealed that in-migrants are more likely than nonmigrants to recycle, purchase fewer packaged goods, switch to ecofriendly products, and read environmental magazines. On average, members of both groups watch TV programs about the environment at the same rate of frequency.

6. Additional partial correlation analyses revealed that the weakening of this relationship was primarily due to the effects of education and would partly account for relatively higher levels of environmental activism observed among in-migrants found at the bivariate level.

7. We do know that 41% of Americans surveyed in a 1995 Roper poll "said that they would like to live in a small town or rural area within 10 years" (Johnson and Beale 1998, 23).

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