The Relationship Between Home and Nature: What Living Locations Can Tell Us About Environmentalism

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A survey of 165 residents in Saratoga County examines the link between distinct residential areas and environmental perceptions and behaviors. Residents were divided into four groups by living location: urban, suburban, rural and streams (homeowners with streams running through their property). While actions and opinions varied depending on location, the general trend is that most people in the county spend a fair amount of time recreating outdoors and are environmentally conscious.

Introduction

As humanity changes through time, we have moved from being very connected to nature, being a part of it and understanding it, to mostly being separated from it. Unfortunately throughout history humans have left an impression in the environment wherever they have gone. As we developed sophisticated technologies this impact grew while we slowly lost our connection to nature. Many people of today spend most of their time indoors, occasionally taking walks and hikes but often times using cars to get from one indoor place to another. With our advanced lifestyle, however, comes a price. After driving countless species extinct and polluting the air and seas, the biosphere will not return to how it once was. Some people ignore this fact, not wanting to give up the luxuries that this life can provide, but others fight strongly trying to save what is left. Most remain somewhere in between: constrained by responsibilities and what they deem realistic but still making decisions with the environment in mind. Why does one person act more environmentally then another? Perhaps they played in the woods as a child or enjoy canoeing and so value nature in that regard, or maybe they saw *An Inconvenient Truth* and it struck a chord in them as an important issue. These are but a few of the myriad of influences which can influence an individual's perception of nature and therefore how green they live.

Many efforts have also been made to create a general scale of how people feel about the environment. In 1978 Dunlap and Van Liere came out with the New Environmental Paradigm (NEP). This paradigm was an emergent way of thinking about the environment in a comprehensive and sustainable manner. Dunlap and Van Liere also created a scale with which to measure people's acceptance of these ideas. The NEP scale is one of, if not the most ubiquitous scales of environmentalism and has generally been proven valid, yet in 2000 Dunlap et al. created a new scale which they coined the New Ecological Paradigm. The authors explained the changes as being due to the shift in prominent environmental issues. Nisbet et al. (2009) attempted to create another such scale which would measure connectedness to nature. They took into account time spent outdoors, affinity towards nature, environmental behavior and many other factors in an effort to create a comprehensive scale. The scale was broken into three aspects: self, or how connected one personally feels to nature, perspective concerning the overall issue of humans and the environment, and experiences outdoors. Testing against other previously established measures showed that their scale did have validity. No two scales match completely, however, and the variety of aspects included shows how multifaceted and complex of an issue this can be.

Outdoor recreation has long thought to be associated with stronger environmental views (Cordell et al. 2002). Peterson et al. (2008) examined this issue on a household and individual level, while dividing the activities between appreciative and non-appreciative forms of recreation. Appreciative forms were memberships in recreation clubs and organizations, walking, hiking and surfing, and these outdoor activities lead to appreciation of nature and environmental concern. Non-appreciative forms were fishing, hunting and ATV use. The study found a positive relationship between appreciative recreations and environmental concern, while non-appreciative recreation correlated to weaker viewpoints, though not in individuals living alone (Peterson et al. 2008). The appreciative relationship is clear and supports the idea that families and individuals who spend more time outdoors are more likely to have environmental views as long as certain activities are avoided. It is an interesting distinction drawn by non-appreciative recreation as such activities actually seem detrimental in terms of environmentalism, though only in households.

One possible correlate of environmentalism is living location. While arguments have been made as to why rural residents may have less concern for the environment than urban residents, actual data remains mixed (Freudenburg 1991). Differing areas have their own environmental issues which would cause perspectives to be distinct. The results therefore depend upon what sort of scale is used. Berenguer, Corraliza and Martín (2005) examine differences in environmentalism between rural and urban residents in Spain. Using the New Ecological Paradigm Scale (NEPS) they found that urbanites scored higher but other measures show that rural residents are not only more environmentally conscious but behave more responsibly as well. They conclude that the NEPS represents "a specific type of environmental concern" and does not always correlate with environmental behavior (Berenguer et al. 2005). A greater distinction between living locations can be found in the tangible aspects. Andrews (2008) studied the correlation between greenhouse gas emissions and land use. There are many factors to take into consideration such as transportation, deforestation and the urban heat island effect. Urban areas discharge the most overall emissions; however, population density in addition to public transportation is high enough to lower per capita emissions. The highest emission for each individual comes from suburban areas as a result of medium building density, high car usage and sprawl (Andrews 2008). Sprawl is universally condemned by environmentalists and the effects have been studied intensively. Unfortunately most research on environmental attitudes concerns either the rural-urban disparity or general populations.

Certain areas of the country are near areas of wilderness or areas protected on a state or federal level. Rudzitis and Johnson (2000) examine such areas since they tend to experience relatively high levels of growth compared with similar areas not near wilderness. It was found that most people moving into these near-wilderness areas did not do so for economic reasons but rather in search of a better lifestyle. It has been shown that being in nature reduces stress and generally increases well-being (Kaplan 1995). Perhaps then it should be expected that people would move towards natural areas. In fact Van den Berg, Hartig and Staats (2007) show that people living in settings which deprive them of nature have a much higher preference towards natural areas. They make this point in terms of compact cities, arguing that this is why people move to suburbs and that a truly green city must therefore incorporate natural areas.

The fastest growing county in New York State is Saratoga County. Located just south of Adirondack Park, one of the largest protected areas in the country, it is at least partially due to the abundance of natural areas that the county has experienced so much growth. Groups such as the Wilton Wildlife Preserve have sprung up to conserve land for fear that the remaining natural spaces will be developed. Within this county is our research area: the Saratoga Lake Watershed. This watershed is 244 square miles and includes eleven townships, including the City of Saratoga Springs and the Village of Ballston Spa. The water included in the watershed must pass through one-third of Saratoga County and is therefore home to thousands of people in upstate New York due to its vast size (Saratoga Lake Watershed Plan, 2002). The lake, streams and parks in the area offer various outdoor recreational activities, however the watershed does face environmental issues in addition to expansion pressures. The surrounding areas are very agricultural and run-off of pesticides and fertilizers pose a problem to the ecosystem. Saratoga Springs may face a water shortage if a drought occurs and is thus considering tapping Saratoga Lake despite disagreement from other towns as well as local residents and businesses invested in Saratoga Lake. The area also consists of disparate living environments as the transition from downtown Saratoga Springs to rural countryside happens surprisingly quickly. Taking all this into consideration we decided to focus our study onto these disparate areas and investigate the environmental perceptions, actions and behaviors of people in this unique region.

The three main development types are urban, suburban and rural. We also wanted to study a forth type of living environment which had some element of nature inherent in it. Streams snake through much of the county and bring with them an inescapable piece of the natural world. In a large rain storm a stream will flood and the warmth of spring will bring frogs and insects, making it difficult for someone to ignore the stream running through their backyard. As our final group we therefore chose houses near streams. For the remainder of this paper we will refer to these four groups as the urbanites, suburbanites, ruralites, and streamers. Our study examines the differences in environmental perspectives, recreation and behaviors between residents of these areas through a survey distributed to local residents.

Methods

We conducted a survey of residents living within the Saratoga Lake watershed in order to receive quantifiable data regarding environmental interactions based on living locations in urban, suburban and rural areas, or near a stream. This survey was able to be performed in Saratoga County because Saratoga Lake's watershed contains a range of locales from rural farms to more urban.

We chose to mail surveys to give people the option to respond without time constraints. A previous environmental studies capstone by Clinard, Hubert and Nesbitt in 2009 showed the success possible with a mail survey. Phone interviews were decided against because they are often intrusive with limited results and it is also more difficult to obtain phone numbers for certain houses than addresses.

Participants were chosen by parcel data using ArcGIS. Our urban group was solely in Saratoga Springs. We chose homes in a one-half mile radius of the downtown strip of Broadway from the intersections of Washington Street and Broadway to the intersections of Van Dam Street and Broadway. Our suburban group was chosen by finding moderately developed areas featuring prominent suburban characteristics such as cul-de-sacs and subdivisions. Our rural group was chosen by selecting homeowners living on ten acres or greater in the county. Our stream group was chosen by selecting properties that intersected streams based on parcel data using GIS.

Once the addresses were obtained, we put the addresses of each group separately into Microsoft Excel and removed the homes that were being rented or had homeowners whose primary addresses were elsewhere or had postal boxes instead of addresses. We then totaled the

remaining addresses and divided by 125 because we originally planned on mailing out 125 surveys for each group. If, for example, the total number divided by 125 was 8, we then counted every 8 addresses and picked that address and inserted it into a new Excel file. These 125 addresses for each group (totaling 500) were then used for our survey, though some were deleted at random because we did not have enough prepaid return envelopes. Due to time constraints, we could not obtain 14 more prepaid return envelopes and thus had to reduce our surveys from 500 to 486.

The surveys were color coded according to the chosen areas; urbanites received light yellow surveys, suburbanites received dark yellow surveys, ruralites received pink surveys and streamers received purple surveys. The four different colors for the four groups was done so that once the surveys were returned to us we would know what living location the surveys came from. Our data was recorded and analyzed in Microsoft Excel.

The first question (see Appendix A) asked about activities in unconstructed and experiential environments as well as utilizing activities. Hunting, fishing and boating were the three activities identified as utilizing because when people are doing these activities they are enjoying the activity for what it is rather than having their main focus be appreciating the natural environment in which they are recreating. The experiential activities were camping, canoeing/kayaking, hiking/snowshoeing/cross country skiing, and nature watching. These four activities were identified as experiential because a main focus of these activities is to enjoy the outdoors and observe the surroundings around the person partaking in the activities. The constructed activities were golfing and downhill skiing/snowboarding. These two activities were identified as constructed because they are done in constructed environments on a resort, where one pays to enjoy these activities that happen to be outside; being outside is not the main reason

for doing these two activities. For all of the outdoor activities questions, we asked respondents if they participated a few times a week, a few times a month, a few times a year, one time or less a year, or never.

The second part of our survey asked respondents to agree or disagree with certain statements, and asked if they strongly agree, agree, are neutral, disagree, or strongly disagree. These questions asked if they feel it is important for children to play outside, to live within walking or biking distance of schools, parks, playgrounds, shops and downtown areas, and natural areas. Other questions asked if respondents feel guilty about harming the environment and if they would like more information on how to be more energy efficient and environmentally friendly (see Question 2 of the survey in Appendix A).

The third part of our survey asked respondents if they always, frequently, sometimes, or never engage in certain behaviors and actions. These regarded recycling, buying locally produced foods, donating time and money to environmental causes, drinking bottled water, using compact fluorescent light bulbs, and using re-usable shopping bags (see Question 3 of the survey in Appendix).

Other questions ask about composting (Questions 4 and 5 in Appendix A), commuting to work (Question 6 in Appendix A), home temperatures in the winter (Question 7 in Appendix A), and renewable home electricity (Question 8 in Appendix A). We included a fill-in question asking about critical environmental local issues (Question 9 in Appendix A). It is the only question which allows respondents to speak freely as all the other questions have given answers where the respondent must choose the best answer suited to them. We also asked demographic questions to see what sorts of people responded. These questions asked about how long respondents have lived in the area (Question 10), education level (Question 11), if they have

children (Question 12) and if they are under the age of 18 (Question 13), gender (Question 14), age (Question 15) and registered political party (Question 16). All political parties that appear on the New York State ballot were included.

All of the questions asked were originally written by us with the aid of advisor Professor Josh Ness, though reading through the 2009 Survey of Kentuckians' Environmental Knowledge, Attitudes and Behaviors, The Ninth Annual National Report Card on Environmental Attitudes, Knowledge, and Behaviors conducted by Roper Starch Worldwide and the Saratoga Lake Landowner Survey by Clinard et al. inspired us as well.

Results

We sent out 486 surveys to residents in the Saratoga Lake watershed and 22 of those were sent back because of wrong addresses. Of the 464 surveys sent to homes, we received 165 back, yielding a return rate of 35.5%. From the urbanite group we received 50 surveys (30.3% of return), from the suburbanite group we received 32 surveys (19.4% of return), from the ruralite group we received 41 surveys (24.8% of return) and from the streamers group we received 42 surveys (25.5% of return).

Our results are divided into several categories: outdoor activities, agreeing or disagreeing with given statements regarding environmental beliefs, environmental actions and opinions, as well as demographics to get a sense of who is answering our surveys and who is most represented in Saratoga County. Our respondents were mostly female (62%), and in their forties or older (25% of responders were in their fifties). Republicans make up 44% of respondents who declared their registered political party. The remaining 56% is a mix of Democrats, Independence voters (not Independent-leaning voters, seeing as Independence is its own political

party), members of the Conservative Party, Working Families Party, or unregistered respondents. Most respondents in all groups (63%) hold a bachelors degree or higher. Our age range of respondents is 28 to 92. The average urbanite respondent is 58; the average suburbanite respondent is 55; the average ruralite respondent is 61; the average streamer respondent is 54. In all groups most respondents had lived in the area for over 20 years and had children, though not always under the age of 18.

In terms of outdoor recreation, all respondents generally recreate in experiential environments most frequently, though that can be a result of more experiential environment choices (four in total) while a constructed environment only contains two choices. Our constructed choices, golfing and downhill skiing, are seasonal whereas many of the experiential activities can be enjoyed year-round. Hunting, boating and fishing are utilization activities and are more popular than constructed environment activities. Only one urban responder and one suburban responder hunt, and these two people hunt a few times a week. Hunting is a more popular activity among those in rural and streams settings; ten streamers hunt a few times a year or more (24% of streamer respondents) and eight ruralites hunt a few times a year or more (20% of ruralite respondents). Nature watching is a popular activity in all four groups, and many take part a few times a week (38% streams, 26% urban, 34% rural, 19% suburban) and a few times a month (14% streams, 24% urban, 24% rural, 6% suburban). Spending time in experiential outdoor environments is the most common way respondents participate in outdoor activities (Figure 1) with constructed recreation being the second most popular form of recreation (Figure 2) and utilization activities being the least popular (Figure 3). Streamers, however, scored the lowest on experiential and the highest on utilization.

Our second question asks respondents to agree or disagree with statements regarding environmental beliefs on a five-point scale. Urbanites want to live within walking and biking distance of all given options: community playground/park/school, shops/downtown areas, and natural areas. Only 10% of urbanites are neutral or disagree that it is important to live within walking distance of a playground, park or school; 8% are neutral or disagree that it is important to live within walking or biking distance of shops and downtown areas, and 24% do not think that living within walking or biking distance of a natural area is important. Suburbanites are more likely to care about living near a playground and park and are rather neutral about living near shops and natural areas. Streamers are overall neutral in all three walking and biking options, though care more about living near a natural area than schools or shops. More than half of ruralites (54%) care very little for living near schools or shops and more strongly agree with the importance of living near a natural area (Figure 4).

Another grouping of statements in our second survey question is whether or not residents would like more information on how to be more environmentally friendly and energy efficient (Figure 5). Of the urbanites, 46% would like more information on how to be environmentally friendly while 56% want more information on how to be more energy efficient. Suburbanites follow the same pattern; 56% want more information regarding environmental care and 66% regarding energy efficiency. For streamers as well wanting energy efficiency information is more common (74%) than wanting information on being environmentally friendly (67%). Ruralites are equal with 51% of responders wanting more information for both.

Our third question asks survey takers to respond to questions regarding engagement in environmental behaviors. Nearly all respondents (95%) recycle household waste always or frequently. Suburbanites do not purchase locally produced foods (56%) as much as urbanites (84%), ruralites (66%), and streamers (71%). Ruralites are most likely to donate time and money to environmental causes (29% said "always" or "frequently") and suburbanites are least likely (16% said "always" or "frequently"). All respondents sometimes drink bottled water as opposed to always or frequently drinking bottled water. Urbanites come in first place regarding the always usage of reusable shopping bags with ruralites coming in second place.

Questions four and five regard composting, and all respondents compost yard waste more than food waste (Figure 6). In the urban category, more than half (56%) do not compost at all, and 24% compost both food and yard waste while one person composts food waste only. the suburban category, 69% do not compost at all; 9% compost both food and yard waste and 22% compost yard waste only. Streamers mostly compost yard waste (55%), but 40% of respondents do not compost at all, and 21% of respondents compost both food and yard waste. Composting is most popular in the rural category; 76% of ruralites compost yard waste and 56% compost food waste with 54% composting both. Some even compost paper, ashes, and animal waste. A mere 19.5% do not compost at all. Suburbanites and urbanites seem more interested in using a community composter than streamers and ruralites (Figure 7).

The one open-ended question gave respondents a platform for environmental issue discussion: we ask what survey takers feel is the most critical environmental issue in their area. While many responders left it blank, the responses are quite varied, though water quality, open spaces, and development are common themes. Streamers and ruralites are most concerned with land use and open spaces, and ruralites are most concerned about littering and pollution; many ruralites cited littering on the side of the road as their most critical environmental concern. Streamers were more concerned about recycling and energy than any of the other groups. Urbanites and suburbanites cited various water issues, such as using Saratoga Lake for Saratoga Springs' future drinking water source and dredging in the Hudson River as common issues. One suburbanite merely stated "humans" as a critical environmental issue while a fellow suburbanite said "when environmental issues cause a tax increase". Though there were plenty of critical issues, half of the respondents stating "energy" and "recycling" as the most critical issue are streamers.

Respondents were also asked to name the park or parks most frequently visited. Only eleven parks were mentioned more than once, and the parks most visited are Saratoga Spa State Park (75 respondents), the Adirondacks (17 respondents), Congress Park (14 respondents) and Moreau Lake State Park (14 respondents).

Discussion/Conclusion

We originally thought Saratoga County would be interesting for its mix of high and low density development as well as its location south of Adirondack Park, one of the largest protected areas in the United States. Overall our survey indicates that people in Saratoga County are fairly environmentally conscious. The strong majority always recycle household waste and over half compost in some capacity. Additionally most people checked that they would like information on both how to be more environmentally friendly and more energy efficient. Most people in the area, therefore, wish to lessen their ecological footprint. We also received numerous informed responses to the most critical local environmental issue. Of the 165 total respondents, 121 respondents answered with the main trends concerning over-development, water quality and quantity. One respondent even wrote about the apathy people feel for the environment. On the other hand, one respondent, rather than simply leaving the question blank wrote in "none". Most of the results are more or less consistent across the four groups, though there are exceptions. The discrepancies are generally consistent with what we expected from the four living locations.

Our first question concerns outdoor activities. Though some activities display little differences between the groups, there are a few activities which display a disparity. These largely fit with our predictions based on location. Hunting is, for the most part, restricted to the ruralites and streamers, while those same groups are much less likely to golf. One interesting result was that suburbanites were the least likely to nature watch, possibly signifying the relative separation between the suburbs and nature. One result we did not expect was the much larger percentage of the streamers who partake in utilizing recreation. This recreational category corresponds with the "non-appreciative" category that Peterson et al. (2008) uses except that we asked about boating instead of ATV use. Assuming that this substitution is not significant, their study would indicate that our streamers have weaker environmental views.

Respondents wrote in a myriad of parks in response to our question asking for which they visit most. Some parks were only mentioned once while Saratoga Spa State Park was written in 75 times. The next highest were the Adirondack, Congress, and Moreau Lake State Park being cited 17, 14 and 14 times respectively. One possible confound here is that there is a golf course in Saratoga Spa State Park as well as Saratoga Performing Arts Center. The golf course seems like a more likely culprit, but it is very possible that frequency of it in responses is partly from people who visit for reasons aside from getting into nature.

The three questions concerning what elements one thinks it is important to live near were answered mostly as we expected, with the exception of the urban group. The ruralites find it more important to live near natural areas than anything else, yet the percentage that value this is the smallest of the four groups. Possibly the respondents interpreted the question slightly

differently, and some may feel it is less important to live near designated natural areas since they live in the country already. An alternative explanation is that ruralites simply value attributes we did not include in our survey such as plot size.

Owing to their proximity to downtown Saratoga Springs we predicted that the urbanites would rate it important to live near shops and downtown areas and probably also schools. Our results found this to be true. In fact the urbanites valued living near all three areas, including natural areas. We did not expect urban residents to place importance on living near nature. This could be influenced by what we chose as our "urban" area. While Saratoga Springs is officially categorized as a city it hardly holds up as an urban area when compared with nearby Albany. In fact, what might make Saratoga Springs appealing to many is that the downtown area quickly transitions into suburbs and then into open space. Our data suggests that people living in downtown Saratoga Springs enjoy living near not only shops but also natural areas. In the critical issue fill in question one urbanite wrote "access to outdoor activities is one reason I choose to live in this area--the MAIN reason. I don't walk (too far) but I walk to shop and to any activity in Saratoga--walk or BIKE. [T]his is why I live here." Our information is consistent with Van den Berg et al (2007) and reveals a possible explanation for the urbanites answers. Due to the lack of nature in their immediate environment, they may put greater value on the nearby natural areas.

While we found many differences between the groups there were some questions which yielded mostly consistent results between the four groups. All but 2 respondents (who marked neutral) agreed on the importance of children playing outdoors. Very few people, only about 10, agreed that environmental actions are only merited by economic benefit. Most admit to feeling guilty about harming the environment, and also recycle household waste. These are encouraging results as they indicate a general trend of, at least weak, environmentalism. Our results signify that people recognize the importance of nature to children, and the intrinsic importance of environmental behaviors.

Urbanites donate the most time and money to environmental causes, and also use reusable bags most frequently. The bags could reflect their proximity to shopping areas and therefore an increased opportunity to use them. As far as donations go Saratoga Springs is somewhat wealthier than surrounding towns and while residents of the city were included in other groups the urbanites are the only group entirely within Saratoga Springs. Other behavioral questions do not show great differences between the groups. To some extent this is a positive thing. Recycling, for example, shows very little variation and is consistently high. The suburban group, however, seems less environmental than the other groups. The suburbanites buy the least local foods, donate the least time and money, and compost the least. Overall, though, the general trend seems to be towards environmentalism as relatively high rates of each behavior were reported.

The two composting questions yielded a somewhat logical set of results. Ruralites and streamers are more likely to compost, but the urbanites and suburbanites are more likely to use a community composter. It makes sense for those who live in more developed areas to be more likely to use a community composter, both because they seem to compost less on their own and since it makes more sense to place such a system where there are more people. Conversely there are a number of people, especially in the rural group, who compost but wouldn't use a community composter, likely because they already have a system set up and so bringing their compost somewhere else would not be worthwhile. Overall a large number of people do display

interest in a community composter indicating that (especially in denser areas) there would be support for and use of one should it be established.

We asked two questions about whether or not the respondent would like more information on how to be more environmentally friendly or energy efficient. A majority in each group agree that they would like information on efficiency. The urbanites are the only group in which less than half want information on being environmental and the ruralites were the only group to rated each equally; each other group rated efficiency higher. This shows that people are generally more receptive to information which not only shows a clear benefit for the environment, but for themselves as well. The streamers actually show a large difference here, with the largest percent agreeing on both questions. We are not sure if this is indicative of the streamers being more environmentally conscious, or simply less informed.

The streamers give an interesting set of results and do not simply correlate to any other group. They stand out for recreation with the highest percent of utilization which might indicate a less environmental ethic. On the other hand they are the most interested in receiving information on how to be green. They also have the second highest rate of composting and the rural group may have been larger due to their bigger properties. Though it seems that the streamers interact with the environment in unconventional ways they do seem to be on the more environmental side of the spectrum.

There are a number of possible confounds, biases and sources of error in our survey. There is a distinct age bias as the mean reported age is 57. The 2008 estimate of Saratoga County by the US census bureau puts the percentage of people 65 and over at 12.3%. Of respondents who gave their age 28.5% are 65 or older. This bias could have occurred because older people are more likely to be homeowners or perhaps older people simply have more time

on their hands and therefore are more likely to fill out and return a survey. Another likely bias is for environmentalism. People who are more environmentally conscious may have been more willing to complete this survey. There is a great deal of variation and certainly some respondents did seem to have very little regard for green policy so it is hard to say for certain but the survey did not hide the fact that it relates to environmental perceptions and so a bias is possible.

Certain questions may have also been misread by some of the respondents which would alter the data. The question "It's only worth doing environmentally friendly things if they save me money" was agreed with by only ten people. Analysis of those ten reveal no major differences between them and the rest of the respondents. Six compost to some degree and nine of the ten recycle. These are behaviors which potentially can save money, but on the other hand all but one (who marked neutral) agree that they felt guilty for doing things that harm the environment. Seven even reported that they sometimes donate time or money to environmental causes which seems to be in direct conflict with saving money. These particular respondents either have idiosyncratic value systems or misinterpreted the question. Another question which posed a problem for some was the one asking if they bought renewable energy. While we think most people understood what the question was asking, some wrote in question marks or "how do you know?" Our assumption is that if people do not know what sort of electricity they are purchasing then they are most likely going with the default; the top two sources of power in New York State are nuclear and natural gas.

One rather amusing result came from our question of whether people felt guilty for doing things which harmed the environment. One respondent, rather than circling an answer, wrote in "I <u>do not</u> do things to harm the environment." Another respondent wrote in a similar message ("n/a"). From a cursory glance these two people did seem to be on the more environmental side

behaviorally. Nevertheless, there is simply no possible way to avoid causing any harm to the environment.

Taken as a whole our respondents were on the environmental side but still showed differences. Due to the fact that the groups varied in different ways on different questions it is hard to single out a group as the most environmental. We tentatively posit the suburban the least environmental. We did not find any question on which they answered more environmentally than the other three groups, and yet were the least engaged in a few green behaviors. We speculate that the suburbanites may be the most separated from nature, even more so than the urbanites since the distinction tends to be clearer in a city while the suburbs often poorly mimic nature.

Our findings could be used to implement environmental programs to greater effect. Community composting efforts, particularly in urban and suburban areas would seemingly have a fair amount of support. The fact that respondents generally would like more information on how to be energy efficient rather than environmentally friendly could also be used; instead of environmental agencies and organizations advertising the importance of driving less or other ways to be environmentally friendly, efforts on what people can do to save money in terms of energy would be more helpful. Future studies could examine how programs with the purpose of increasing environmental behaviors within the watershed could best be implemented.

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Appendix A: Blank Survey SARATOGA COUNTY: OUTDOOR INTERACTIONS SURVEY

Thank you for taking the time to complete our survey. When you are done please remember to mail it back via the self-addressed envelope.

1. How often do you participate in the following activities? (Please mark an X in the appropriate box, and for seasonal activities indicate how often during the season.)

	A few times a week	A few times a month	A few times a year	One time or less a year	Never
Boating					
Camping					
Canoeing/kayaking					
Downhill skiing/snowboarding					
Fishing					
Golfing					
Hiking/snowshoeing/cross country skiing					
Hunting					
Nature watching					
Walking/jogging/running outdoors					
How often do you visit parks?					

If you visit parks, which do you most commonly visit?_____

2. Do you agree or disagree with the following statements? (Please mark an X in the appropriate box.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I go outside when I am stressed to clear my mind.					
I prefer to exercise outside if the weather allows.					
It is important that children play outside.					
It is important to live within walking or biking distance to a community playground, park, or school.					
It is important to live within walking or biking distance of shops and other downtown areas.					
It is important to live within walking or biking distance of a natural area, such as a pond or woods.					
My favorite leisurely activities involve being outdoors.					
I feel guilty about doing things that harm the environment.					
<i>I would like more information on what I could do to be more environmentally friendly.</i>					
I would like more information on what I could do to be more energy efficient.					
It's only worth doing environmentally friendly things if they save me money.					
<i>Energy efficiency is a priority when buying new products.</i>					
Durability is a priority when buying new products.					

Recycling household waste. Buying locally produced foods. Donating time and money to environmental causes. Drinking bottled water. Replacing light bulbs with compact fluorescent or other energy saving lights. Using re-useable shopping bags. 4. Do you compost? (Circle all that apply.)				
Donating time and money to environmental causes. Drinking bottled water. Replacing light bulbs with compact fluorescent or other energy saving lights. Using re-useable shopping bags. 4. Do you compost? (Circle all that apply.)				
Drinking bottled water. Replacing light bulbs with compact fluorescent or other energy saving lights. Using re-useable shopping bags. 4. Do you compost? (Circle all that apply.)				
Replacing light bulbs with compact fluorescent or other energy saving lights. Using re-useable shopping bags. 4. Do you compost? (Circle all that apply.)				
<i>Eaving lights.</i> Using re-useable shopping bags. 4. Do you compost? (Circle all that apply.)				
4. Do you compost? (Circle all that apply.)				
Food wasteYard wasteNoneOther5. Would you use a community composter if one was available? (Circle6. If you travel to work, how do you get there? (Circle the most commDriveCarpoolWalkBikePublic transportationDriveCarpoolWalkBikePublic transportation7. In the winter when you are home during the day you set your heat to Below 65°F $65^{\circ}-68^{\circ}$ $69^{\circ}-72^{\circ}$ $73^{\circ}-75^{\circ}$ $76^{\circ}+$ 8. When you purchase home electricity do you choose renewable source0. What do you feel is the most critical environmental issue in your are	e one.) Yes ion way.) ion Other o: (Circle the cl ces? (Circle on			
 0. How long have you lived in the area? (Circle the closest approxima <i>Less than a year 1-5 years 6-10 years 11-20 years</i> 1. What is the highest level of education you have achieved? (Circle on <i>Did not finish High School High School/GED Technical School associates Degree Bachelors Degree Graduate Degree</i> 2. Do you have any children and/or dependents? (Circle one.) <i>Yes</i> 3. Do you have any children and/or dependents under the age of 18? (4. What is your gender? (Circle one.) Male Female 6. What political party are you registered under? (Circle one) 	Over 20 one.) chool No (Circle one.)	<i>years</i> <i>Yes No</i> What is your ago	e?	

YOU CAN USE THIS SPACE FOR COMMENTS IF ANY:

When completed please put this survey in the pre-addressed envelope.

Appendix B: Urban Results SARATOGA COUNTY: OUTDOOR INTERACTIONS SURVEY

Thank you for taking the time to complete our survey. When you are done please remember to mail it back via the self-addressed envelope.

1. How often do you participate in the following activities? (Please mark an X in the appropriate box, and for seasonal activities indicate how often during the season.)

	A few times a week	A few times a month	A few times a year	One time or less a year	Never	N/A
Boating	3	5	14	14	12	2
Camping	1	2	9	13	22	$\begin{bmatrix} 3\\ 2 \end{bmatrix}$
Canoeing/kayaking	1	9	8	12	18	5
Downhill skiing/snowboarding	1	5	8	5	26	4
Fishing	0	2	12	9	23	3
Golfing	4	3	6	2	31	4
Hiking/snowshoeing/cross country skiing	1	11	22	4	9	$\frac{2}{3}$
Hunting	1	0	0	0	45	1
Nature watching	13	12	13	3	7	1
Walking/jogging/running outdoors	28	13	5	0	1	1
How often do you visit parks?	6	19	16	4	4	

If you visit parks, which do you most commonly visit?_____

2. Do you agree or disagree with the following statements? (Please mark an X in the appropriate box.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I go outside when I am stressed to clear my mind.	17	17	13	3	0
I prefer to exercise outside if the weather allows.	29	16	4	0	1
It is important that children play outside.	43	6	1	0	0
It is important to live within walking or biking distance to a community playground, park, or school.	25	20	4	1	0
It is important to live within walking or biking distance of shops and other downtown areas.	25	21	2	1	0
It is important to live within walking or biking distance of a natural area, such as a pond or woods.	16	22	12	0	0
My favorite leisurely activities involve being outdoors.	23	23	2	5	0
I feel guilty about doing things that harm the environment.	18	24	7	0	1
I would like more information on what I could do to be more environmentally friendly.	6	17	23	3	1
I would like more information on what I could do to be more energy efficient.	8	20	18	3	1
It's only worth doing environmentally friendly things if they save me money.	0	2	11	25	12
Energy efficiency is a priority when buying new products.	22	23	4	0	1
Durability is a priority when buying new products.	28	20	1	0	0

N/A

	Always	Frequently	Sometimes	Never
Recycling household waste.	39	10	0	1
Buying locally produced foods.	11	31	7	1
Donating time and money to environmental causes.	4	7	31	8
Drinking bottled water.	4	8	25	13
<i>Replacing light bulbs with compact fluorescent or other energy saving lights.</i>	20	12	12	5
Using re-useable shopping bags.	21	14	10	5
6. If you travel to work, how do you get there? (Circle the most comm	10n way.)			
 6. If you travel to work, how do you get there? (Circle the most comm <i>Drive Carpool Walk Bike Public transportat</i> 7. In the winter when you are home during the day you set your heat to <i>Below</i> 65°F (14) 65°-68° (26) 69°-72° (8) 73°-75° 8. When you purchase home electricity do you choose renewable sour 9. What do you feel is the most critical environmental issue in your are 	tion Other (Circle the c) $(2) 76^{\circ}+$ ces? (Circle on			

12. Do you have any children and/or dependents? (Circle one.) Yes No

13. Do you have any children and/or dependents under the age of 18? (Circle one.) Yes No

14. What is your gender? (Circle one.) Male Female 15. What is your age? (average: 58.2)

16. What political party are you registered under? (Circle one) *Democratic* (20) *Republican* (14) *Independence* (7) *Conservative* (1) *Working Families Unregistered* (6) *Other* (Independent and Green)

> THANK YOU FOR PARTICIPATING IN THIS SURVEY! YOUR TIME IS APPRECIATED! YOU CAN USE THIS SPACE FOR COMMENTS IF ANY:

When completed please put this survey in the pre-addressed envelope.

Appendix B: Suburban Results SARATOGA COUNTY: OUTDOOR INTERACTIONS SURVEY

Thank you for taking the time to complete our survey. When you are done please remember to mail it back via the self-addressed envelope.

1. How often do you participate in the following activities? (Please mark an X in the appropriate box, and for seasonal activities indicate how often during the season.)

	A few times a week	A few times a month	A few times a year	One time or less a year	Never
Boating	2	2	4	8	15
Camping	0	0	4	11	16
Canoeing/kayaking	2	0	6	9	14
Downhill skiing/snowboarding	0	0	3	4	24
Fishing	1	2	4	5	18
Golfing	2	4	6	4	14
Hiking/snowshoeing/cross country skiing	1	2	10	8	9
Hunting	1	0	0	0	30
Nature watching	6	2	8	5	11
Walking/jogging/running outdoors	17	6	6	2	1
How often do you visit parks?	6	9	15	2	0

If you visit parks, which do you most commonly visit?_____

2. Do you agree or disagree with the following statements? (Please mark an X in the appropriate box.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/2
I go outside when I am stressed to clear my mind.	12	11	8	0	0	1
I prefer to exercise outside if the weather allows.	14	13	2	2	0	1
It is important that children play outside.	26	5	1	0	0	0
It is important to live within walking or biking distance to a community playground, park, or school.	9	11	10	2	0	02
It is important to live within walking or biking distance of shops and other downtown areas.	4	5	21	2	0	- 0 0 1
It is important to live within walking or biking distance of a natural area, such as a pond or woods.	5	11	12	2	0	000000000000000000000000000000000000000
My favorite leisurely activities involve being outdoors.	15	9	8	0	0	0
I feel guilty about doing things that harm the environment.	12	16	3	1	0	
I would like more information on what I could do to be more environmentally friendly.	7	11	10	2	1	
I would like more information on what I could do to be more energy efficient.	9	12	8	2	1	
It's only worth doing environmentally friendly things if they save me money.	1	1	7	16	7	
Energy efficiency is a priority when buying new products.	11	17	4	0	0	
Durability is a priority when buying new products.	22	7	1	1	0	

3. When presented with the opportunity, how often do you engage	e in the followii	ng behaviors?	(Mark an X in	the box):
	Always	Frequently	Sometimes	Never
Recycling household waste.	22	7	2	1
Buying locally produced foods.	4	14	13	1
Donating time and money to environmental causes.	1	4	17	10
Drinking bottled water.	2	5	17	8
<i>Replacing light bulbs with compact fluorescent or other energy saving lights.</i>	8	8	10	6
Using re-useable shopping bags.	9	6	12	5
 4. Do you compost? (Circle all that apply.) <i>Food waste</i> (3) <i>Yard waste</i> (10) <i>None</i> (22) <i>Other</i> 5. Would you use a community composter if one was available? (Circ 6. If you travel to work, how do you get there? (Circle the most comm <i>Drive Carpool Walk Bike Public transportat</i> 7. In the winter when you are home during the day you set your heat to <i>Below</i> 65°F (4) 65°-68° (20) 69°-72° (7) 73°-75° (8. When you purchase home electricity do you choose renewable sour 9. What do you feel is the most critical environmental issue in your ar 	non way.) <i>tion Other</i> o: (Circle the cl (1) 76°+ rces? (Circle one	osest approxim)
 10. How long have you lived in the area? (Circle the closest approxim <i>Less than a year 1-5 years 6-10 years 11-20 years</i> 11. What is the highest level of education you have achieved? (Circle <i>Did not finish High School High School/GED</i> (4) <i>Technica</i> <i>Associates Degree</i> (6) <i>Bachelors Degree</i> (8) <i>Graduate Degree</i> 	one.) al School (3)	years		

THANK YOU FOR PARTICIPATING IN THIS SURVEY! YOUR TIME IS APPRECIATED! YOU CAN USE THIS SPACE FOR COMMENTS IF ANY:

When completed please put this survey in the pre-addressed envelope.

Appendix B: Rural Results SARATOGA COUNTY: OUTDOOR INTERACTIONS SURVEY

Thank you for taking the time to complete our survey. When you are done please remember to mail it back via the self-addressed envelope.

1. How often do you participate in the following activities? (Please mark an X in the appropriate box, and for seasonal activities indicate how often during the season.)

	A few times a week	A few times a month	A few times a year	One time or less a year	Never	N/A
Boating	3	2	10	6	17	3
Camping	0	3	7	9	18	$\frac{4}{2}$
Canoeing/kayaking	1	3	8	3	24	2
Downhill skiing/snowboarding	2	2	7	2	26	$\begin{bmatrix} 2\\ 4 \end{bmatrix}$
Fishing	0	5	13	5	16	1
Golfing	0	1	2	2	32	3
Hiking/snowshoeing/cross country skiing	2	8	12	1	17	0
Hunting	2	2	4	2	28	2
Nature watching	14	7	10	1	8	
Walking/jogging/running outdoors	19	10	5	1	6	1
How often do you visit parks?		7	20	10	2	1

If you visit parks, which do you most commonly visit?_____

2. Do you agree or disagree with the following statements? (Please mark an X in the appropriate box.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I go outside when I am stressed to clear my mind.	17	16	6	0	0
I prefer to exercise outside if the weather allows.	19	15	6	1	0
It is important that children play outside.	34	7	0	0	0
It is important to live within walking or biking distance to a community playground, park, or school.	4	6	24	4	1
It is important to live within walking or biking distance of shops and other downtown areas.	0	3	25	7	4
It is important to live within walking or biking distance of a natural area, such as a pond or woods.	15	7	16	2	0
My favorite leisurely activities involve being outdoors.	17	15	7	0	0
I feel guilty about doing things that harm the environment.	18	15	5	1	0
I would like more information on what I could do to be more environmentally friendly.	6	15	13	3	0
I would like more information on what I could do to be more energy efficient.	6	15	13	3	0
It's only worth doing environmentally friendly things if they save me money.	0	3	6	13	17
Energy efficiency is a priority when buying new products.	20	15	5	0	1
Durability is a priority when buying new products.	25	15	1	0	0

3. When presented with the opportunity, how often do you engage in the following behaviors? (Mark an X in the box):

	Always	Frequently	Sometimes	Never	N/A
Recycling household waste.	34	4	3	0	0
Buying locally produced foods.	4	23	14	0	0
Donating time and money to environmental causes.	2	10	21	7	2
Drinking bottled water.	2	4	22	11	
<i>Replacing light bulbs with compact fluorescent or other energy saving lights.</i>	15	12	12	2	
Using re-useable shopping bags.	12	16	8	5	

4. Do you compost? (Circle all that apply.)

Food waste (23) Yard waste (31) None (8) Other (1) no answer (1)

5. Would you use a community composter if one was available? (Circle one.) Yes (15) No (22) don't know (1) no answer (3)

6. If you travel to work, how do you get there? (Circle the most common way.)

Drive Carpool Walk Bike Public transportation Other_____

7. In the winter when you are home during the day you set your heat to: (Circle the closest approximation.)

Below $65^{\circ}F$ (8) $65^{\circ}-68^{\circ}$ (24) $69^{\circ}-72^{\circ}$ (7) $73^{\circ}-75^{\circ}$ (1) $76^{\circ}+$

8. When you purchase home electricity do you choose renewable sources? (Circle one.) Yes No

9. What do you feel is the most critical environmental issue in your area?

10. How long have you lived in the area? (Circle the closest approximation.)

Less than a year 1-5 years 6-10 years 11-20 years Over 20 years

11. What is the highest level of education you have achieved? (Circle one.)

Did not finish High School High School/GED (11) Technical School (2)

Associates Degree (5) Bachelors Degree (13) Graduate Degree (10)

12. Do you have any children and/or dependents? (Circle one.) Yes No

13. Do you have any children and/or dependents under the age of 18? (Circle one.) Yes No

14. What is your gender? (Circle one.) Male Female 15. What is your age? (average: 61.5)

16. What political party are you registered under? (Circle one)

Democratic (6) *Republican* (18) *Independence* (6) *Conservative* (2) *Working Families Unregistered* (5) *Other* (2) no answer (1)

THANK YOU FOR PARTICIPATING IN THIS SURVEY! YOUR TIME IS APPRECIATED! YOU CAN USE THIS SPACE FOR COMMENTS IF ANY: When completed please put this survey in the pre-addressed envelope.

Appendix B: Streamers Results SARATOGA COUNTY: OUTDOOR INTERACTIONS SURVEY

Thank you for taking the time to complete our survey. When you are done please remember to mail it back via the self-addressed envelope.

1. How often do you participate in the following activities? (Please mark an X in the appropriate box, and for seasonal activities indicate how often during the season.)

	A few times a week	A few times a month	A few times a year	One time or less a year	Never	
Boating	4	8	10	7	11	
Camping	2	2	12	12	13	
Canoeing/kayaking	2	2	10	10	17	1
Downhill skiing/snowboarding	2	2	5	5	26	1
Fishing	4	4	14	8	11	1
Golfing	3	2	9	6	21	1
Hiking/snowshoeing/cross country skiing	4	7	9	5	16	
Hunting	2	2	6	1	29	1
Nature watching	16	6	9	4	6	
Walking/jogging/running outdoors	25	9	5	0	2	
How often do you visit parks?	2	17	19	4	0	

If you visit parks, which do you most commonly visit?_____

2. Do you agree or disagree with the following statements? (Please mark an X in the appropriate box.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I go outside when I am stressed to clear my mind.	17	16	7	1	0
I prefer to exercise outside if the weather allows.	23	10	5	2	0
It is important that children play outside.	37	5	0	0	0
It is important to live within walking or biking distance to a community playground, park, or school.	7	17	14	4	0
It is important to live within walking or biking distance of shops and other downtown areas.	5	5	23	9	0
It is important to live within walking or biking distance of a natural area, such as a pond or woods.	15	10	13	4	0
My favorite leisurely activities involve being outdoors.	26	11	2	3	0
I feel guilty about doing things that harm the environment.	22	16	4	0	0
I would like more information on what I could do to be more environmentally friendly.	9	19	7	5	1
I would like more information on what I could do to be more energy efficient.	12	19	7	2	1
It's only worth doing environmentally friendly things if they save me money.	0	3	8	18	13
Energy efficiency is a priority when buying new products.	14	21	5	1	1
Durability is a priority when buying new products.	26	14	0	1	0

3. When presented with the opportunity, how often do you engage in the following behaviors? (Mark an X in the box):

or then presented that the opportunity, not often do you engage	Always	Frequently	Sometimes	Never	NI/A
Recycling household waste.	34	6	1	0	– N/A 1
Buying locally produced foods.	7	23	11	1	0
Donating time and money to environmental causes.	0	9	28	5	$\begin{bmatrix} 0\\2 \end{bmatrix}$
Drinking bottled water.	5	6	17	12	
<i>Replacing light bulbs with compact fluorescent or other energy saving lights.</i>	8	13	16	5	
Using re-useable shopping bags.	8	15	10	9	
 4. Do you compost? (Circle all that apply.) <i>Food waste</i> (10) <i>Yard waste</i> (21) <i>None</i> (17) <i>Other</i> 5. Would you use a community composter if one was available? (Circle 6. If you travel to work, how do you get there? (Circle the most comm <i>Drive Carpool Walk Bike Public transportation</i> 7. In the winter when you are home during the day you set your heat to <i>Below 65°F</i> (12) 65°-68° (24) 69°-72° (4) 73°-75° 8. When you purchase home electricity do you choose renewable source 9. What do you feel is the most critical environmental issue in your are 	ion way.) ion Other o: (Circle the cl 76°+ ces? (Circle on	(15) <i>No</i> (2: 			
10. How long have you lived in the area? (Circle the closest approxima Less than a year 1-5 years 6-10 years 11-20 years 11. What is the highest level of education you have achieved? (Circle of Did not finish High School High School/GED Technical Sc Associates Degree Bachelors Degree Graduate Degree 12. Do you have any children and/or dependents? (Circle one.) Yes 13. Do you have any children and/or dependents under the age of 18? (14. What is your gender? (Circle one.) Male Female 16. What political party are you registered under? (Circle one) Democratic (6) Republican (26) Independence (4) Conserver Other THANK YOU FOR PARTICIPATING IN THIS SURV You CAN USE THIS SPACE FOR O	Over 20 one.) Shool (Circle one.) 15. V ative (2) W EY! YOUR TH	Yes No What is your ago Yorking Familie. ME IS APPRECLA	0		

When completed please put this survey in the pre-addressed envelope.

Appendix C: Figures

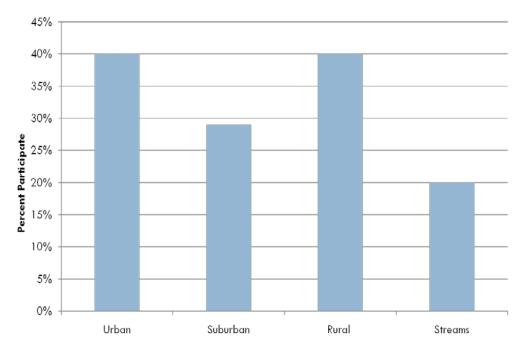


Figure 1. Percentage of respondents who partake in experiential outdoor activities. Urbanites and ruralites are tied at 40% of respondents who go camping, canoeing/kayaking, hiking/snowshoeing/cross country skiing, and nature watching.

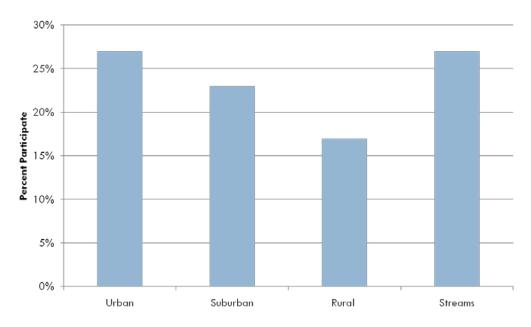


Figure 2. Percentage of respondents who partake in constructed outdoor activities. Over 25% of urbanites and streamers golf and downhill ski/snowboard.

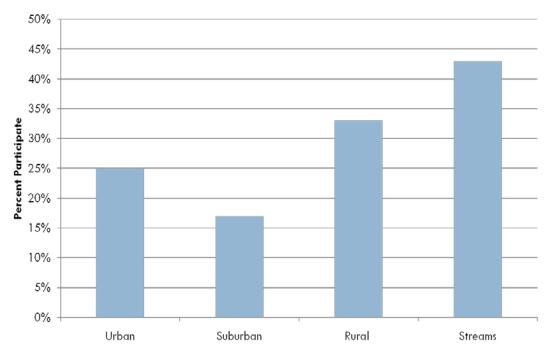
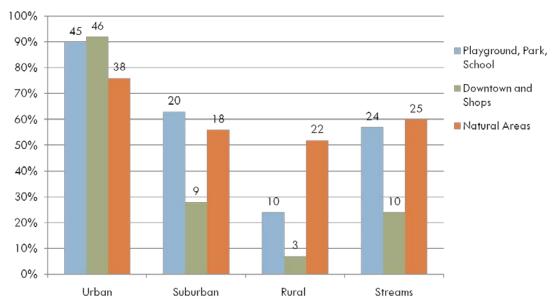


Figure 3. Percentage of respondents who utilize the outdoors recreationally. Streamers, at 43%, lead the other groups in this category.



It is Important to Live Close to...

Figure 4. Urbanites feel it is important to live near all three of the selections. Living near downtown and shops is very important to urbanites only, suburbanites think it is most important to live near playgrounds, parks and schools, and ruralites and streamers think living near natural areas is most important.

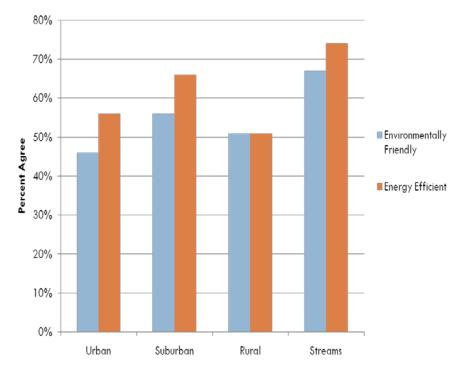
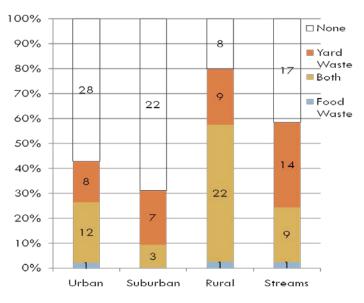


Figure 5. In almost all four groups with one exception in the urbanite group, more than half of respondents would like more information on how to be more environmentally friendly and energy efficient. All four groups would like more information on how to be more energy efficient than environmentally friendly, though ruralites want equally as much information.



Do You Compost?

Figure 6. Ruralites and streamers compost the most because ruralites are on ten acres of land or greater, and many streamers live in rural areas as well. Only three respondents compost only food waste.

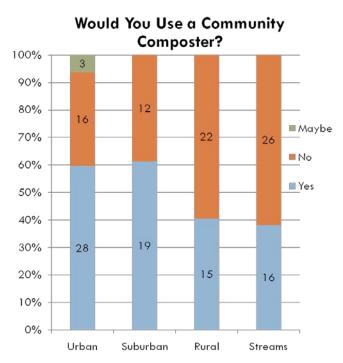


Figure 7. Urbanites and suburbanites are most likely to use a community composter because they are more likely to not own private composters, whereas ruralites and streamers are less likely to use a community composter because they tend to compost more privately.