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Nature or Nintendo:

Understanding the Millennial Generation's Perceptions and Experiences of Public Lands in Colorado

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Executive Summary

The primary goal of the *Nature or Nintendo* project is to aid Rocky Mountain National Park personnel in better understanding the “Millennial” generation’s views and attitudes toward U.S. public lands. Born between 1978 and 2000, millennials represent a demographic cohort of Americans who are often characterized as being detached from nature and disinterested in outdoor-based experiences. If true, these conceptions may create challenges for public lands as we move into the 21st century. This project focuses specifically upon perceptions and uses of Rocky Mountain National Park by millennial-aged students based at the University of Northern Colorado. The report provides the following: (1) the initial results of a focus group held with nine millennial-age student participants at the University of Northern Colorado; (2) eighteen “snapshots”, including photos and profiles, of a second set of millennial-aged students at UNC ; and (3) an annotated bibliography that highlights existing research on the millennial generation and its relationship to nature for reference use by park personnel. The purpose is to compare scholarly research to date on the millennial generation with the actual experiences and views of northern millennial-age Colorado students. The Appendices (A, B, and C) contain specific materials that are targeted toward seasonal park employees at Rocky Mountain National Park seeking to understand this new wave of visitors; a portable document file of the Appendix will be made available to RMNP.

Emerging focus group and “snapshot” results suggest that UNC millennials possess a strong interest in visiting public lands, yet their ability to visit is challenged by competing responsibilities, scheduled activities, and the allure of passive entertainment such as videos and computers. Perceived cost and time of park visitation also factor heavily into (1) focus group discussions and (2) interviews with the eighteen students selected for individual snapshots. It is also evident that UNC millennials experience nature in a variety of ways that are now more mediated by technologies and “natural” consumer products. While millennials may supplement or substitute their nature experiences with videos such as *Planet Earth* or listen to music players while hiking or camping, these trends may have consequences for the more traditional sensory experience of nature. Park-based Citizen Science programs generated a strong level of interest and discussion that is worthy of further investigation. Focus group participants professed a desire to participate in Citizen Science programs in national parks or on other public lands, either independently or as part of the UNC curriculum. This may be one promising solution for involving and engaging students more directly in outdoor activities on public lands.

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Photo: UNC Geography Club on camping trip in Poudre Canyon in October 2009 (Pictured: Jake Antcliff, Amy Jo Heatherly, Ryan Denning).

1. Introduction

The primary goal of the “Nature or Nintendo” project is to aid Rocky Mountain National Park personnel in better understanding the “Millennial Generation’s” views and attitudes toward public lands. This project focuses specifically upon perceptions and uses of Rocky Mountain National Park by millennial students at the University of Northern Colorado. The report provides the following: (1) the initial results of a focus group held with 9 millennial-age student participants at the University of Northern Colorado; (2) 18 “snapshots” of a different set of millennial-aged students at UNC for use by park personnel; and (3) an annotated bibliography that highlights research on the millennial generation and its relationship to nature, also for future use by park personnel. The purpose is to compare scholarly research to date on the millennial generation with the actual experiences and views of northern millennial-age Colorado students. The Appendix (A, B, and C) contains specific materials that may prove useful for seasonal park employees at Rocky Mountain National Park; a portable document file of the Appendix will be made available to Ben Baldwin at RMNP.

2. Literature on the Millennials, Nature, and “Nature Deficit Disorder”

Much has been written about the millennials (also known as the “net” generation), or those persons born between the years 1978-2000. Millennials constitute a large group of individuals that are often disaggregated into two generations: Generation Y (1978 and 1990) and Generation Z (1991-2000). This project primarily targets Generation Z given the participant sample of 18-23 year-old students at the University of Northern Colorado.

Several researchers have argued that because this particular generation has been raised with access to cell phones, the Internet, video games, and other forms of electronic media, millennials now spend less time in the outdoors, and have therefore lost a critical connection to the natural world more common to previous generations. Louv (2005) has argued further that society has taught young people to avoid direct experiences with the environment and, that for millennials, nature has increasingly

become something to watch, to consume, or ignore.

Part one of this project employs a focus group method to explore the validity of Louv's "nature deficit disorder" argument within the context of public lands, such as state forests, national forests, national parks, and wildlife refuges. In particular, this pilot project seeks to understand how the millennial generation perceives and experiences public lands in Colorado, with a particular focus Rocky Mountain National Park. **Ultimately, the project aims to assist park personnel in better understanding the perspectives and values of this newest generation of park visitors.**

Recent research by Pergam and Zaradic (2008) argues that society is seeing a fundamental shift away from people's interest in nature not only in the USA but abroad, and that there is strong evidence for a pervasive shift away from nature-based recreation. Pergam and Zaradic cite a marked drop in U.S. national park admissions to the increase in popularity of electronic diversions such as watching television, surfing the Internet and playing video games. National park admissions in Japan and Spain also revealed similar drops in visitation. Despite 50 years of steady increase, per capita visits to US National Parks have declined since 1987, and nature recreation in Japan, Spain and the US has fallen by 18 to 25 percent on a per capita basis. The only activity studied that was on the rise in terms of popularity was day hiking, while fishing, hunting and backpacking revealed steep declines.

While Pergam and Zaradic cite "videophilia" --the "new human tendency to focus on sedentary activities involving electronic media" -- as the main culprit behind falling park numbers, others argue that there are more complex forces at work. Some scholars, for instance, suggest that park visitation is down due to higher entrance fees, a lackluster economy, and a decline in international visitors. Yet park visitation in the US was on the rise for 50 years prior to the decline that began in 1987, despite the financial woes of the Great Depression and the 1980s economic recession.

Some suggest that declining nature participation may have important consequences for current conservation efforts as individuals become physically disconnected from real world environmental

issues and problems. If young people are learning about conservation issues exclusively via the Discovery Channel, National Geographic Channel, or Planet Earth DVDs, their ability to “engage” with nature may be diminished or limited. Some scholars point out that steps leading to a detachment from nature begin during the formative stages of a young person’s life. Elkind’s (2007) research on “The Power of Play”, for instance, argues that young people today spend more time on academics, competitive sports, and passive, electronic entertainment than any other generation, and that “unstructured free time and lazy afternoons” may help young persons become more spontaneous and imaginative, leading to healthier, happier children.

Yet interestingly, evidence also shows that while park visitation has lessened, institutions are receiving more and more interest from young people who wish to participate in Citizen Science programs. Citizen Science is a term used for projects or ongoing program of scientific work that involve volunteers who may or may not have formal training, yet perform collaborative research tasks such as observation, measurement or computation. These projects aim to promote civic engagement and embed students in research projects such as the Audubon Society’s Christmas Bird Count or the GPS Ranger program in US National Parks. Nearby Colorado State University runs a citizen science program called “Community Collaborative Rain, Hail and Snow Network, which helps to create data for weather forecasting and climate studies. The Center for Engaged Research and Civic Action at UNC has recently submitted a grant to the National Science Foundation for a citizen science project that partners Estes Park high schools with UNC students.

Perhaps most interestingly, the increasing use of consumer electronic devices that record media (such as mobile phones) has enabled an increased capture of data collection for several citizen science projects such as that of the Neighborhood Parks Council in San Francisco, California. In these instances,

new media technologies have ironically enabled more young people to become indirectly involved in projects related to outdoor environments.

The annotated bibliography found in the Appendix and referenced in Section 3 provides a more comprehensive analysis of the existing literature on millennials, park visitation, and nature deficit disorder. Sections 4 and 5 follow with the focus group questions asked of UNC millennial students in April 2010 and a summary of initial results or observations, as well as 18 student profiles.

3. 1 Focus Group Format and Protocol

The UNC focus group session was designed to (1) help gather opinions and beliefs about the millennial generation from millennials themselves; (2) to test widespread assumptions in the literature about the millennial cohort; (3) to encourage discussion on the role that millennials play in national parks; and (4) to generate enthusiasm from participants' comments to begin more extensive survey research on millennials based at UNC. The focus group was held at the University of Northern Colorado on April 7 and included a small group of students from one upper-division geography course. Food and beverages were provided to help facilitate the informal discussion. Seven questions, designed from the general to the specific (see below) and approved by the Institutional Review Board at UNC, were asked of focus group participants over the course of two classes. Responses were recorded via audio recorder and transcribed in the weeks that followed by an undergraduate research assistant in the geography program at UNC. Representative quotations from the focus group session were extracted to supplement the summary and annotated bibliography on millennials and nature.

The nine focus group participants ranged in age from 18-23, and all were undergraduate students majoring in various humanities disciplines at UNC, including anthropology, geography, social sciences, communications, history, international studies, and English. Eight of the nine participants were Colorado natives, and one student had recently relocated to Greeley from the upper Midwest.

3.2 Focus Group Questions and Sub-questions:

While the questions from the focus session are included below, please note that participant responses were less structured owing to the organic and free-flowing nature of group discussions. The questions are listed below; however, participant responses often deviated from the original structure:

(1) What are some key words or phrases that you might use to describe or characterize your generation?

- Are there any key ideas, events, innovations that come to mind when you think of your generation?
- So what do think sets your generation apart from previous generations, such as your parents' generation?

(2) Some scholars have said that your generation has a condition called nature deficit disorder. In other words, with the increasing role of available technology, this generation has become disconnected or alienated from nature.

- Do you think that's true or false?
- Can you think of examples that might support that?

(3) What are some of the ways you get "outside" and experience nature?

- What sorts of things do you do outside?
- Do you think your generation spends too much/too little time in the outdoors?

(4) There's been a lot of talk about the role of nature videos, or even listening to MP3 players while skiing or hiking. Do you think it's possible to experience nature that's mediated or substituted by technology?

(5) Do you consider yourself to be environmentally conscious?

- Why or why not?
- What do you think makes an environmentally conscious person?

(6) Do you know what U.S. public lands are?

- Do you visit National Parks in the USA?
- How often?
- Where have you been?
- Why do you go?
- Why don't you go?

(7) Citizen Science programs are designed to get people to directly engage with the natural world by involving participants in existing science projects. Examples include sea turtle conservation in Costa

Rica, where participants help count sea turtle eggs or Audubon Society's bird counting projects among citizens.

- Do you think National Parks would benefit by providing more of these services?
- What are some of the Citizen Science projects you might envision?
- Could you see doing something like this as part of course credit, or as a something set apart from UNC?
- Why would it be useful/valuable, or not be useful?

While questions for the focus group were generally well received by student participants and led to lively discussions, additional questions will prove useful for future work. For instance, two participants suggested that a person's "formative years" shaped perceptions of nature. That is to say, how much time a participant spent on public lands and/or in the great outdoors as a child shaped how nature is perceived or experienced today. Questions about the participants' formative years were not asked in the focus group session and will be included in a UNC-based survey in 2010-2011.

3.3 Selection of Quotes from Focus Group Questions

This section provides a selection of quotes from participants in the April 7, 2010 focus group; data for each question is discussed below (e.g. Q1-Q7) and followed by an overall synthesis and analysis of focus group results.

Q1. Self-characterization of millennials:

When asked to describe their particular generation, participants cited the following words or phrases: "entitlement, technology, distant, addicted to media, technological, nostalgic, hasty, unaware, narcissism, superficial, connected, apathetic, individualistic, obese, fat, busy, lazy, dull, hopeful, self-consumed, too many electronics, digital, self-centered, quick to accept the status quo, instant gratification, indoors, Facebook, gadget oriented, ignorant, free, conservative, and tolerant". Words such as "technology" or "media" and "entitlement" and "obese" were cited most frequently among focus group participants, suggesting that self-perceptions correspond with widespread perceptions of

this particular cohort. However, when pressed further, it was clear that not all millennials conceive of their generation as passive or apathetic. Interestingly, when asked what set the millennials apart from other generations, one participant responded with the following:

“We’re the first generation who affected an election in the way that we did. When we want change, we do something about it.”

More important than the above statement’s historical accuracy is the participant’s perception of self-efficacy. Some millennials from the group conceived of themselves as lazy and apathetic, but nevertheless recognized their ability to affect change when motivated.

Another participant disagreed with this view of the millennial generation:

“I think we have way too much technology. Sometimes I feel overwhelmed by being a member of the so-called Internet generation. My professor did not use Power Point the other day and it was one of the best lectures, most refreshing, I’ve heard. The technology makes us lazy.”

Q2. Nature deficit disorder:

Four of nine group participants were familiar with Louv’s term “Nature Deficit Disorder” and when asked whether this affliction was perceived as a characteristic of the millennial generation, all nine participants, without hesitation, showed agreement using both verbal and non-verbal responses. Some of the responses gleaned from this question include:

“I’ve heard of nature deficit disorder. As to whether we have it as a generation, I think it depends. I think in Colorado our generation is still a lot better off compared to other places, still not as affected due to the mountains. In a more urban environment, back east or on the West coast, I think they’d be more affected.”

“It’s there, nature deficit disorder. But part of the problem is that parents are not letting their kids outside because they are afraid for their safety.”

Q3. Millennial experiences in the outdoors:

Participants discussed various ways in which millennials “get outside” and experience the outdoors, and responses covered the spectrum of recreational pursuits, including popular activities such: “running,

skiing, hunting, swimming, hiking, camping, and kayaking” to “hanging out with my family in the backyard”, or more ambitious efforts such as “hiking Colorado’s fourteeners” and “ultra-light backcountry camping”. It is clear that while millennials utilize technologies that draw them into indoor spaces more frequently than in previous generations, this does not preclude their love of outdoor spaces. One participant, for instance, shared his personal experiences in Rocky Mountain National Park as follows:

“I grew up in the mountains of Colorado and in Rocky Mountain National Park. I spent a lot of time camping, backpacking, on the river. It’s hard for me to think about my generation not being connected to nature because I have always been and my friends have always been. Obviously I didn’t grow up in an urban environment, so I think a lot depends on where you grow up and what your parents did as you were growing up. I think that affects a lot of how you look at nature and the things we do outside.”

Q4. Technology and nature:

There was some detailed discussion among participants as to whether it is possible to experience nature that is *mediated* or even *replaced* by technology, such as nature videos, MP3 players, or video games. The group, while small in terms of sample size, disagreed, and the subject generated considerable debate. One participant argued:

“I like to sit around the fire and just look at the fire. I don’t need an I-pod or a distraction when I’m in that environment. There’s something primal about it.”

One participant took a similar approach in his response:

“When I camp I don’t bring a clock or a phone, the only technology I use is a camera. I know that there are a lot of people that want to be attached to their technology when they are in nature, so they can call their friends just to tell them about some crazy animal they saw.”

In contrast, another student argued:

“When I’m hiking or skiing I listen to music or have my cell phone with me, but it doesn’t diminish my experience in any way. I’m still in the outdoors and don’t see anything wrong with it.”

Others argued that nature videos and the like serve a special role for those who cannot experience nature or national parks in a direct, tactile way, such as people with disabilities:

“I think it goes both ways, a lot of people can’t go out and experience nature like my mom; she’s in a wheel chair. So like she will watch *National Geographic* because there is no way she could go and see some of these things out there”.

Another participant added:

“It’s great if you can visit these places, but if you’re unable, then shows like *Planet Earth* allow you to appreciate what’s out there”.

Q5. Environmentalism and identity:

All nine participants, when questioned, considered themselves to be “environmentally conscious”, but recognized that the discourse of environmentalism is heavily politicized, and that a commonly agreed upon definition of environmentalism is difficult to craft. For instance, most agreed that in today’s climate, environmentalism is associated more with an individual’s consumer habits and less with one’s actions or experiences:

“I think of myself as an environmentalist, but can’t always afford to buy environmental products because they’re extremely expensive.”

Another participant added:

“When you see commercials about being environmentally friendly, it’s not about going outside and picking up trash, it’s about what you can buy”.

Other group members perceived a different view of what “counts” as environmentalism and the role that millennials play in shaping the environmental movement:

“I think that it’s interesting that when you ask about being environmentally conscious, a lot of us in this room, including myself, think about how we use stuff. It is more an issue about how materialism is being affected as opposed to what we are doing outside.”

“I think that while our generation thinks we are more environmentally conscious, and we have better ideas about what is going on in the world, we also waste more than any other generation. There is more stuff that we use, and there is more that we waste.”

In further discussion all participants agreed that the term environmentally conscious had, to a certain extent, been “hijacked by consumer interests” and that, as one participant noted, environmentalism was about “getting out there, taking less, and giving more”.

Q6. Experiences of public lands:

Most participants (8 out of 9) were aware of the meaning of “public lands” and all had been to Rocky Mountain National Park in the past year, either with friends or family, while more than half of the group had visited the park 2 or 3 times in the past 12 months. Most of the focus group discussion centered around perceived obstacles to park visitation, and all participants cited similar reasons for not visiting public lands more often, including: “money for entrance fees”, “cost”, “traffic, cost, overcrowded”, “work, school, and money related issues”; “lack of time to prepare a trip”; “there are no obstacles”; “it’s far away”; “transportation” and “time to set aside being there without stressing about getting back.”

Throughout the discussion it was evident that participants desired more time in the outdoors, but perceive certain constraints affecting their visitation levels:

“I definitely want to visit all the parks more often, especially Rocky, but it is so much work getting there, getting organized, finding enough people to go. It seems to be that for our generation if it’s something we’re told we have to do for a class, then we’ll go there. But we won’t just go, just to go.”

Q7. Citizen Science programs:

The question on Citizen Science projects in the park generated a tremendous amount of enthusiasm among group participants. While half of the students had not heard of the specific term, they were familiar with the concept of civic engagement and field-based service learning and cited a strong interest in pursuing these activities if they were made affordable or if scholarships were available to

undergraduates. Students were keen on getting involved in Citizen Science projects in national parks or on other public lands, particularly if “course credit” was available, or if “transportation or housing” was made available to students interested in working on park related projects. All participants expressed an interest in “applying the concepts they learned in college” to the “real world” and half of the participants mentioned the importance of “giving back in some small way”. That the millennial focus group participants feel the need to participate in Citizen Science projects while simultaneously acquiring course credit may speak to the limited economic circumstances of UNC students, or to the more general perception of millennials as habitual multi-taskers. Regardless, it is clear based on discussions with the focus group that participants are indeed interested in getting more involved in Rocky Mountain National Park, but that they are more attracted to “structured, planned activities” than they are “just heading up to the park to hang out”, as one participant suggested.

4. Focus Group Conclusions

Focus group results suggest that UNC millennials possess a strong interest in visiting public lands, yet their ability to visit is challenged by competing responsibilities, scheduled activities, and the allure of passive entertainment (e.g. videos, computers). Perceived cost and time of park visitation also factored into the focus group discussion. Millennials also experience nature in a variety of ways that are now more mediated by technologies and “natural” consumer products. While millennials may supplement (or substitute) their nature experiences with videos such as “Planet Earth” or listen to MP3 music while hiking or camping, these trends may have consequences for the more traditional sensory experience of nature (i.e. sound, smell, vision). Park-based Citizen Science programs generated a strong level of interest and discussion that is worthy of further investigation. Focus group participants professed a desire to participate in Citizen Science programs in national parks or on other public lands, either

independently or as part of the UNC curriculum. This may be one promising solution for involving and engaging students more directly in outdoor activities on public lands.

Appendix A. Millennial-Aged Student Snapshots at UNC

In August 2010, profiles of eighteen UNC students were gathered to help provide a snapshot of the millennial aged population and their attitudes toward public lands. These students were not part of the original focus group. Copies of signed, UNC photo release permissions will be furnished upon request; the snapshots and profiles are found in the following pages. UNC IRB (Institutional Review Board) approval has been sought for all work related to the Millennial project.

“Snapshots” of University of Northern Colorado Students (Mostly Millennials)



My name is Andrea Stucky and I’m a junior majoring in Environmental Earth Science at UNC. I was born in Tulsa, Oklahoma and I’ve been living in Colorado for two years. I’m 20 years old, and for fun, I like to run, hike, do crosswords, ski and read. I think the millennial generation can be characterized as technologically dependent and unmotivated. As far as millennials and technology, I believe we spend a lot of time with technology, such as cell phones and computers and televisions. I think that my generation has a disconnected relationship with nature and the outdoors. There’s so much you can do with computers and cell phones and televisions and people don’t want to go outside. Personally, I spend a lot of time on U.S. public lands and spend a little time in Rocky Mountain National Park. My parents live near a wilderness area and forest area. I also go to a couple of national parks a year. My favorite experience in Rocky Mountain or elsewhere was when I went hiking at Glacier Gorge. It is so beautiful there. I think one way to help get people more connected to RMNP and parks in general is decrease the cost. Also, make them more accessible from surrounding cities in terms of transportation.



My name is Mitch Ahrendsen and I’m a junior majoring in Earth Sciences at UNC. I was born in Iowa and I’ve been living in Colorado for less than one year. I’m 20 years old, and for fun, I like to hike, read, camp and kick it. I think the millennial generation can be characterized as boring, scared, and lazy. As far as millennials and technology, I believe we spend way too much time with technology, such as cell phones and computers and televisions. I think that my generation has an unknown relationship with nature and the outdoors. Not many have an opportunity to enjoy nature. Many are also just ignorant of it. Personally, I spend summers, as much as school permits, on U.S. public lands and have spent one or two times in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when we did a couple of day hikes over summer. Longs Peak has a bull’s eye on it though, and I’m coming for her. I think there is much we can do to get people more connected to RMNP and parks in general. Maybe advertise more? But most people either work too much or enjoy the television or video games more than the natural wonders around them. The park could also open up one or two more free admission days.



My name is Adam Picirrilli and I'm a senior majoring in Geographic Information Sciences at UNC. I was born in Denver and I've been living in Colorado for 21 years. For fun, I like to lift, snowboard, go to concerts, and fish. I think the millennial generation can be characterized as apathetic, technologically advanced, and spoiled. As far as millennials and technology, I believe we spend too much time with technology, such as cell phones and computers and televisions. I think that my generation has a poor relationship with nature and the outdoors. Most people, I believe, stay indoors or in urban areas. Personally, I spend some time on public lands and spent a little time in RMNP. My favorite experience in Rocky Mountain or elsewhere was when I was camping with my family two years ago. I think one way to help get people more connected to RMNP and parks in general is to market the park to the public. If people know what's offered they may

be more inclined to visit.



My name is Christi Knapp and I'm a senior majoring in Geography at UNC. I was born in 1989 and I've been living in Colorado for 21 years. For fun, I like to read and take walks. I think the millennial generation can be characterized as techno-dependent. As far as millennials and technology, I believe we spend too much time with technology. I think that my generation has a "polar" relationship with nature and the outdoors. Most either avoid it or can't get enough, and there's not much in between. Personally, I spend very little time on U.S. public lands and no time in Rocky Mountain National Park. I think one way to help get people more connected to RMNP and parks in general is to remind people that the parks are out there. Make them feel like these places are for everyone, not just nature lovers.



in front of them.

My name is Tim Hughes and I'm a student majoring in Geography at UNC. I've been living in Colorado for 20 years. For fun, I like to write, produce and perform music. I think the millennial generation can be characterized as youthful, optimistic, and technology-dependent. As far as millennials and technology, I believe we spend too much time with technology, such as cell phones and computers and televisions. I think that my generation has a distant relationship with nature and the outdoors. Knowledge comes second hand from other generations and mass media. Personally, I spend a lot of time on U.S. public lands and spend little time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when I was working as a surveyor and the wilderness was my office. I think one way to help get people more connected to RMNP and parks in general is for people to discard the technology that distracts them from the world



My name is Juul Dykstra and I'm a senior majoring in Geography at UNC. I was born in Netherlands and I've been living in Colorado for six years. I'm 24 years old. For fun, I like to fix computers and play didgeridoo. I think the millennial generation can be characterized as nihilistic, irresponsible, and always wanting to be different. As far as millennials and technology, I believe we spend too much time with technology, such as cell phone and computers and televisions. I think that my generation has a "so-so" relationship with nature and the outdoors. Kids, after all, still have to play outside. Personally, I spend some time on U.S. public lands and some time in Rocky Mountain National Park. My favorite experiences on public lands were Ouzel Falls, Twin Owls, and Pawnee Grasslands. I think one way to help get people more connected to RMNP and parks in general is to tell people it's actually fun to hike and get in shape.



My name is Morgan Fightmaster and I'm a senior majoring in Geography at UNC. I was born in Lakewood and I've been living in Colorado for 21 years. For fun, I like to play b-ball, run, and go see movies. I think the millennial generation can be characterized as fast paced, high maintenance, and addictive. As far as millennials and technology, I believe we spend way too much time with technology. I think that my generation has a decreasing relationship with nature and the outdoors. Technology is our new connection to nature via our homes. Personally, I spend some time on public lands, but little time in Rocky Mountain National Park. My favorite experience was over the summer, I came to Rocky to hike, and ended up taking eight hours because the views were so beautiful that I had to sit and gaze. I think one way to help get people more connected to RMNP and parks in general is to not make it so expensive. People drive all that way to

spend lots of money to stay for only a day.



My name is Kyle McDonald and I'm a senior majoring in Social Science-Secondary Education at UNC. I was born in 1984 and I've been living in Colorado for 18 years. For fun, I like to camp, fish, hike, shoot firearms, play board games, do yard work and small construction projects. I think the millennial generation can be characterized as being tied to technology/electronics, book smart yet clueless to the real world, and detached from actual labor. As far as millennials and technology, I believe we spend far too much time with technology. I think that my generation has a "fantasized" relationship with nature and the outdoors. All time is spent tied to technology and not being outside to work with one's hands or enjoy nature. Personally, I spend some time on U.S. public lands and spend no time in Rocky Mountain National Park. I recently visited Pawnee National Grasslands with my wife and daughter. My daughter loved

the toads and bugs everywhere, and I've had great experiences as well. I think one way to help get people more connected to RMNP is to reduce fees and increase areas/times where hunting can occur.



different people.

My name is Ben Protzman and I'm a senior majoring in Geography at UNC. I was born in Salt Lake City and I've been living in Colorado for two and a half years. For fun, I like to hike, fish and work out. I think the millennial generation can be characterized as technological, money-hungry, and drunk. As far as millennials and technology, I believe we spend a great deal of time with technology, such as cell phones and computers and televisions. I think that my generation has a mixed relationship with nature and the outdoors. Many embrace nature but many do not. Personally, I spend lots of time on U.S. public lands and no time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when I was hiking on a trail and ran into a hidden lake with nobody else around. I think one way to help get people more connected to RMNP and parks in general is to lower the price to get in. Hold some events to attract



long, expensive drive to parks, so transportation is an issue because many of us are broke college kids.

My name is Ray Tilley and I'm a junior majoring in Secondary Education-Geography at UNC. I was born in Colorado Spring and I've been living in Colorado for 21 years. For fun, I like to hike, ski, camp, and play racquetball. I think the millennial generation can be characterized as progressive, freethinking, and the "future". As far as millennials and technology, I believe we spend too much time with technology, such cell phones and computers and televisions. I think that my generation has an uninformed relationship with nature and the outdoors. We are distracted therefore we can't truly appreciate nature and the environment. Personally, I spend a lot of time on U.S. public lands and very little time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was whenever I got a chance to go, because I love the outdoors. For college students, it is a



My name is Zach Sundgren and I'm a junior majoring in History at UNC. I was born in Kansas and I've been living in Colorado for 15 years. For fun, I like to dirt and street bike, camp, off-road, hike and play sports. I think the millennial generation can be characterized as impatient, technological, and progressive. As far as millennials and technology, I believe we spend too much time with technology, such cell phones and computers and televisions. I think that my generation has a very "small" relationship with nature and the outdoors. No one goes camping, hiking, or anything, or else he or she exploit it. Personally, I spend a good amount of time on U.S. public lands and spend a little time in Rocky Mountain National Park. My favorite experience in Rocky was a motorcycle ride through it, and elsewhere, in Pike National Forest, some camping. I think one way to help get people more connected to RMNP and other parks is to get rid of the massive technology dependence. Encourage more sponsored trips to parks to increase awareness.



My name is Tyler Freed and I'm a senior majoring in anthropology and geography at UNC. I was born in Colorado Springs and I've been living in Colorado for 21 years. For fun, I like to hike, shoot, fish, run, bike and golf. I think the millennial generation can be characterized as technological, free spirited, and consumers. As far as millennials and technology, I believe we spend just enough time with technologies. I also think that my generation has a strong relationship with nature and the outdoors. We use it to ski, snowboard, and hike. Personally, I spend a lot of time on U.S. public lands and spend some time in Rocky Mountain National Park. My favorite experiences have been hiking Rounds Mountain with friends every chance we get. It's a 10-mile trail and we run it in under 2.5 hours. I think one way to help get people more connected to parks in general is to give people better knowledge on where they are and activities available in the park, such as general information, especially for out of state people who are unaware of the park.



My name is Dani Orth and I'm a junior majoring in Geography at UNC. I was born in Iowa and I've been living in Colorado for two years. For fun, I like to play volleyball, scrapbook, watch movies, and swim. I think the millennial generation can be characterized as technologically advanced, multi-taskers, and lacking in concern for others. As far as millennials and technology, I believe we spend a lot of time with technology, such as cell phones and computers and televisions. I think that my generation has a non-existent relationship with nature and the outdoors. People would rather play video and computer games and watch TV than spend time in the outdoors. Personally, I spend not a lot of time on U.S. public lands and almost no time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when I was surrounded by an elk herd for over an hour and couldn't drive away. I'm not sure there is anything that can be done to connect people to parks like Rocky. Either people like spending time outside or they don't. I don't think there should be any incentives.



My name is Jared Marshall and I'm majoring in History at UNC. I've been living in Colorado for six or seven years and I'm 23 years old. For fun, I like to coach my basketball and football teams. I think the millennial generation can be characterized as lazy, impatient, and technology dependent. As far as millennials and technology, I believe we spend too much time with technology. I also think that my generation has a unique relationship with nature and the outdoors. We don't spend a lot of time there, but we're very concerned about the environment. Personally, I spend very little time on U.S. public lands and very little time in Rocky Mountain National Park. My favorite experience in parks was the Grand Canyon. We went on a basketball trip with my team and we camped out one night in a National Park. I think one way to help get people more connected to RMNP and parks in general is to lower costs. Maybe do a better job advertising because advertising in general helps people reconnect and show that parks aren't just for the outdoors type but for anyone wanting a day away, or a new experience.



My name is Kate Werner and I'm a junior majoring in Geography at UNC. I've been living in Colorado for 20 years. For fun, I like to bike, run, swim and organize events for the Geography club. I think the millennial generation can be characterized as technology-driven, unaware, and oblivious. As far as millennials and technology, I believe we spend too much time with technology. I think that my generation has a limited relationship with nature and the outdoors. We just don't get outside enough. Personally, I spend a small amount of time on U.S. public lands and a medium amount of time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when a group of friends went snowshoeing and sledding. I think one way to help get people more connected to RMNP is to lower park access fees and maybe allow for more activities on the grounds.



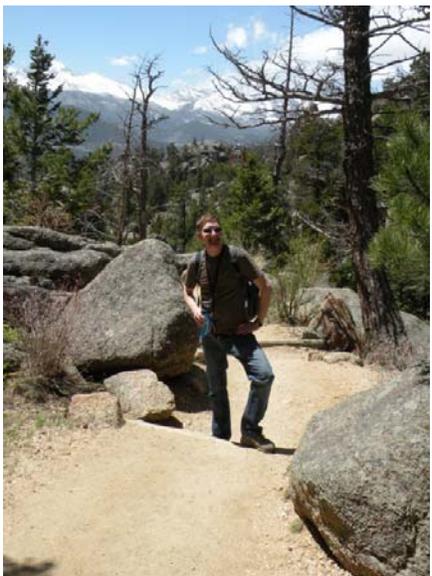
My name is Andreas and I'm a Music and Geography Education exchange student at UNC. I was born in Germany and I've been living in Colorado for one month. I'm 24 years old. For fun, I like to play music, tennis and go swimming. I think the millennial generation can be characterized as progressive, frank, and technological. As far as millennials and technology, I believe we spend too much time with technologies such as cell phones and computers and televisions. I think that my generation has a worse relationship with nature and the outdoors than our ancestors. Personally, I spend some time on U.S. public lands and some time in Rocky Mountain National Park. My favorite experience in Rocky Mountain or elsewhere was when I caught two fish. I think one way to help get people more connected to RMNP and parks in general is to offer more guides within the

parks.



My name is Chris and I'm majoring in History at UNC. I was born in 1983 and I've been living in Colorado for 21 years. I'm 27 years old. For fun, I like to play video games, read and watch movies. I think the millennial generation can be characterized as impatient, under read, and overfed. As far as millennials and technology, I believe we spend too much time with technology, such as cell phone and computers and televisions. I think that my generation has an underdeveloped relationship with nature and the outdoors. Many of my generation spend time away from nature. Personally, I spend a little time on U.S. public lands and spend a few hours a year in Rocky Mountain National Park. My favorite experience in Rocky Mountain NP was when I went with my family when I was around 10. We spent the day walking around. I think one way to help get people more connected to RMNP and

parks in general is to take more young people there in small groups for hikes, bike rides, and other interesting and fun activities.

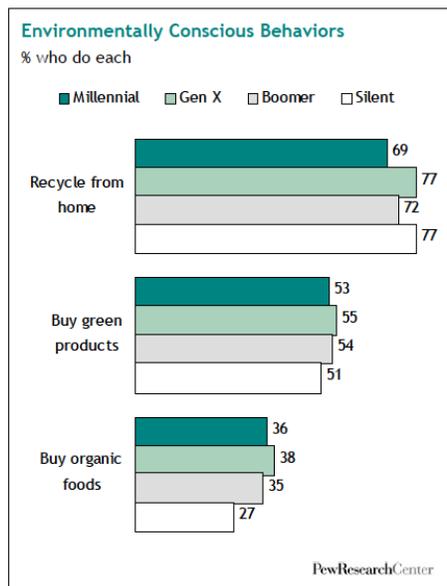
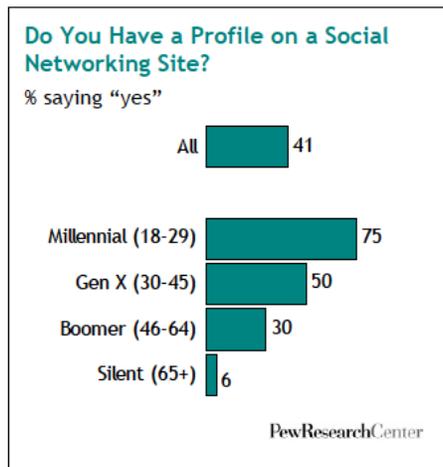
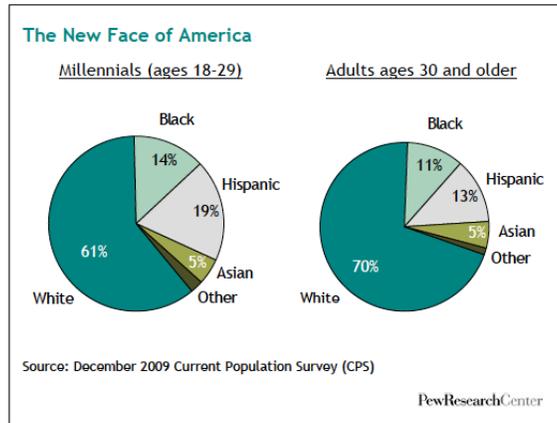


My name is Rick Heroff and I'm a senior majoring in Social Sciences-Secondary Teaching at UNC. I was born in Minneapolis, Minnesota and I've been living in Colorado for six years. I'm 24 years old. For fun, I like to hike, go camping, travel (anywhere from Boulder to Russia), and play music. I think the millennial generation can be characterized as reformers, independent but maybe arrogant, and having a deep and detailed understanding of current issues in the world, thanks to the Internet. As far as millennials and technology, I believe we spend a lot of time with technology, such as cell phones and computers and televisions. I think that my generation has a unique relationship with nature and the outdoors. Many are very much into technology and nature at both extremes. Personally, I spend a lot of time on U.S. public lands and some time in Rocky Mountain National Park. My

best experiences in Rocky Mountain or elsewhere are when I am hiking a trail or camping with my wife overnight, or just being where the crowds are not. I think one way to help get people more connected to RMNP and parks in general is to advertise more and get rid of the pine beetle. Reach out to schools, and get them interested young.

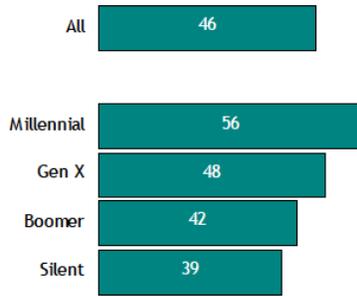
Appendix B.

A Graphic Reference for Park Personnel: Relevant Graphs from the Pew Research Center's 2010 Report on the Millennial Generation Who are Millennials?



Millennials and Exercise

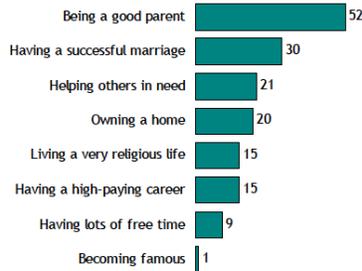
% saying they got vigorous exercise in the past 24 hours



PewResearchCenter

Millennials' Priorities

% saying ... is one of the most important things in their lives



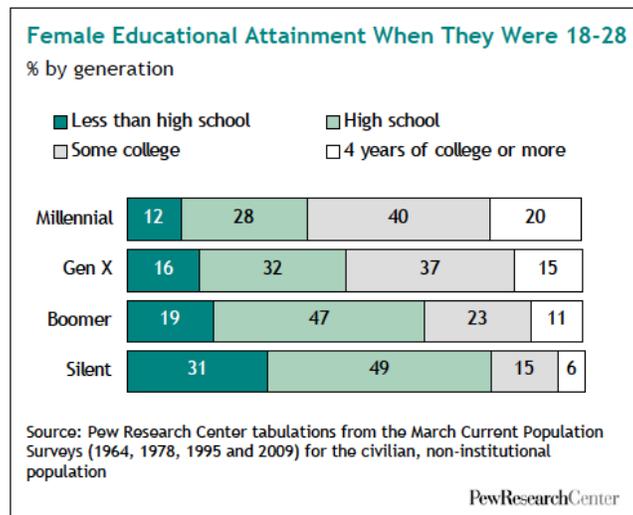
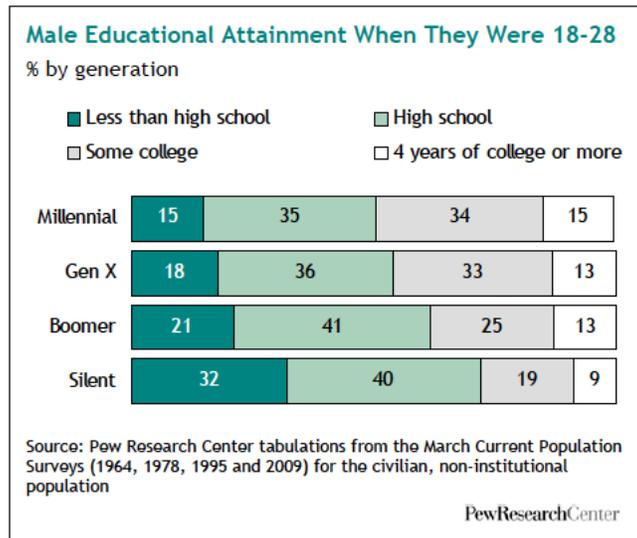
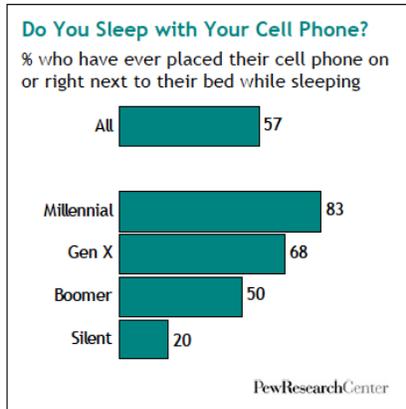
Note: Based on adults ages 18-29.

PewResearchCenter

What Makes Your Generation Unique?

| Millennial | Gen X | Boomer | Silent |
|----------------------------|--------------------------|---------------------|-------------------------|
| 1. Technology use (24%) | Technology use (12%) | Work ethic (17%) | WW II, Depression (14%) |
| 2. Music/Pop culture (11%) | Work ethic (11%) | Respectful (14%) | Smarter (13%) |
| 3. Liberal/tolerant (7%) | Conservative/Trad'l (7%) | Values/Morals (8%) | Honest (12%) |
| 4. Smarter (6%) | Smarter (6%) | "Baby Boomers" (6%) | Work ethic (10%) |
| 5. Clothes (5%) | Respectful (5%) | Smarter (5%) | Values/Morals (10%) |

Note: Based on respondents who said their generation was unique/distinct. Items represent individual, open-ended responses. Top five responses are shown for each age group. Sample sizes for sub-groups are as follows: Millennials, n=527; Gen X, n=173; Boomers, n=283; Silent, n=205.



Source: all graphs courtesy of the Pew Research Center Report on Millennials (<http://pewresearch.org/millennials/2010>).

Appendix C.
Annotated Bibliography
Useful References for Park Personnel Interested in Millennials

“Nature Deficit Disorder”:

* Louv, Richard. *Last Child in the Woods*. 1st. Chapel Hill: Algonquin, 2005. Print.

“Nature-deficit disorder describes the human cost of alienation from nature, among them, diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses. The disorder can be detected in individuals, families, and communities. Nature-deficit disorder can even change human behavior in cities, which could ultimately affect their design, since long-standing studies show a relationship between the absence, or inaccessibility =, of parks and open space with high crime rates, depression, and other urban maladies.” (Louv, p. 34)

Louv’s work points to the role that technology and policy play in discouraging young people to have a direct, active relationship with nature. As a result, the amount of physical space that children interact with in the natural world is diminishing. Young people are replacing time spent outside with time on the Internet and using other electronic media. Psychologists and other health professionals are already starting to notice a spike in health problems like depression, attention deficit disorder, autism, and other health ailments that they believe could be connected to nature deprivation.

*CBS Puts Spotlight on Nature-Deficit Disorder, CBS News, August 6, 2009

This article discusses how more and more children are leading sedentary lifestyles that are dominated by indoor activities. Backpacker Magazine Editor in Chief Jonathan Dorn ranked the top 5 best cities in America to raise an “outdoorsy” kid and to avoid the onset of Nature Deficit Disorder. Cities were ranked according to a number of factors, including proximity to wilderness, outdoor recreation, miles of trails, and rates of participation in outdoor activities. The top five cities in ascending order are: 1) Boulder, CO 2) Jackson, WY 3) Durango, CO 4) Flagstaff, AZ 5) Juneau, AL. This work suggests that “millennial’s” perspective on going outside and avoiding Nature Deficit Disorder is more strongly influenced by where they live as opposed to generational factors.

Retrieved off: http://www.childrenandnature.org/news/detail/cbs_puts_spotlight_on_nature-deficit_disorder/

*“Overcoming “Nature Deficit Disorder” A guide to help bring nature to your child” by Jacob Rodenburg (Director of Camp Kawartha and the Kawartha Outdoor Experience)

This article highlights some of the long-term impacts for children who grow up detached from the natural world. Increased rates of obesity and earlier onset of heart conditions are possible consequences of less physical activity outside. Being outside enhances creative thought, stimulates the imagination, and improves concentration. The article also illustrates that unsupervised play is no longer socially acceptable, and the “outside” is now being viewed as something to fear. In large part due to

increased media coverage, parents are now acutely aware of the risk of child abductions and other forms of violence that occur outside their home. The outside world is thought to be a scary, dangerous place. The legal climate has shifted immensely in the past 30 years, as well. Now school functions, sporting activities, playgrounds, and anything else that might be considered dangerous must be made "safe" for kids. The legal ramifications of having a child hurt on your tire swing could cost a person millions of dollars in legal fees.

Retrieved off: <http://www.scouts.ca/dnn/LinkClick.aspx?fileticket=2dOicOW1D6U%D&tabid=270>

Environmental Views:

*Culp, Rocklynn. "Adolescent girls and outdoor recreation: a case study examining constraints and effective programming." *Journal of Leisure Research*. 30. (1998): Print.

"Natural outdoor environments are still often viewed as male domain. Certain outdoor activities are rarely introduced to girls; for example, hunting and fishing skills are typically passed from father to son, and a daughter seldom gets the opportunity to join in (Jackson, 1988). These observations give credence to the idea that there are constraints to girls becoming active outdoor recreationists. An understanding of the barriers that constrain girls' participation in outdoor activities provides direction towards mitigating their effects through outdoor programming."

Culp's work highlights the possible difference in male and female millennials' use of public lands.

*Frauman, Eric and Waryold, Diane (2009) "An Exploratory Study of the Impact of a Wilderness Orientation Program on College Student's Life Effectiveness," *Journal of Outdoor Recreation, Education, and Leadership*: Vol. 1: Iss. 2, Article 6.

Retrieved off: <http://digitalcommons.wku.edu/jorel/vol1/iss2/6>>

This study explores what impact, if any, wilderness orientation programs have on college students. A group of students at a university in the southeastern United States participated in a four-day wilderness orientation program. Throughout the semester they were studied and given a "Life Effectiveness Questionnaire". When compared to the control group (a group of students who did not participate in a wilderness orientation program) the students who had attended scored better on the "Life Effectiveness Questionnaire" (which included categories such as time management and emotional control). The implications from the study were that more colleges should adopt wilderness orientation programs. This work is useful in that it reflects environmental concerns of the college-age population.

*Examining Trends in Adolescent Environmental Attitudes, Beliefs, and Behaviors Across Three Decades
Laura Wray-Lake, Constance A. Flanagan, and D. Wayne Osgood
Environment and Behavior, Jan 2010; vol. 42: pp. 61 - 85.

"The article presents a descriptive analysis of trends in the environmental attitudes, beliefs, and behaviors of high school seniors from 1976 to 2005 using data from the Monitoring the Future study. Across a range of indicators, environmental concerns of adolescents show increases during the early 1990s and declines across the remainder of the three decades. Declining trends in reports of personal responsibility for the environment, conservation behaviors, and the belief that resources are scarce are

particularly noteworthy. Across all years, findings reveal that youth tended to assign responsibility for the environment to the government and consumers rather than accepting personal responsibility. Recent declines in environmental concerns for this nationally representative sample of youth signal the need for a renewed focus on young people's views and call for better environmental education and governmental leadership."

Retrieved off: <http://eab.sagepub.com/cgi/reprint/42/1/61>

This study reveals that by and large high school seniors have progressively felt less and less personal responsibility towards the environment. The implications from this study are far reaching. The attitudes and beliefs that youth currently have about the environment will shape policy decisions in the coming years.

*Pergams, Oliver, and Patricia Zaradic. "Is love of nature in the US becoming love of electronic media? A 16-year downtrend in national park visits explained by watching movies, playing video games, internet use, and oil prices." *Journal of Environmental Management*. 80. (2006): PP. 387-393. Print.

Retrieved off: <http://www.videophilia.org/uploads/JEM.pdf>

"After 50 years of steady increase, per capita visits to US national parks have declined since 1988."

This research reveals a negative correlation between time spent in front of the TV and computer, and visits to national parks. This article is particularly strong in its inclusion of quantitative data; several graphs are used to depict an increase in the use of electronic media and a decrease in visits to national parks.

Information on Millennials:

*Gaudelli, Janis. "The Truth Behind Millennials and the Green Movement." *Advertising Age*. 04 29 2009. Web. 20 Jan 2010. <http://adage.com/goodworks/post?article_id=136331>.

Gaudelli's work discusses how members of Generation Y (Millennial Generation) are among the most environmentally literate consumers. She argues that it would behoove companies targeting this age group to advertise environmentally sound products.

Good Website: www.millennialgeneration.org

Statistics on "Green" Millennials

- 74 percent of Millennials believe they can make a difference in helping Earth, but the number decreases significantly among the 13-17-year olds. Only 48 percent of 13-17-year-olds feel they can make a difference because the problems are too huge for them to move the needle.
- In terms of contributing most to living green, 87 percent of Millennials recycle; 84 percent turn off lights when not in use; 80 percent reduce water use; and 73 percent use energy-efficient light bulbs.
- The top three biggest hurdles this generation faces when embracing the green movement are cost (41 percent), proof that they're making a difference (24 percent), and ease of use (12 percent).

- 76 percent of Millennials feel it's very important or important for brands to get involved in the green movement.
- The segment of Millennials with the highest planned participation rate in an Earth-Day event is 18-21 year olds (65 percent).
- 53 percent of Millennials state that they know a lot about the green movement but are "always willing to learn more."
- 54 percent of Millennials state that they care about the environment and are interested to get more involved.
- 37 percent of Millennials want to be greener but just don't know how to do it.
- 79 percent of Millennials say that the Internet educates them on environmental issues, while 85 percent of Millennials ages 13-17 state that school is their main source for eco-education.

These statistics were retrieved from: (<http://www.environmentalleader.com/2009/04/23/younger-generation-confused-about-green-products/>). I'm not sure if we can use them, but I found them to be interesting.

*Brooks, David. "What's the Matter With Kids Today? Not a Thing." *New York Times* 05 November 2000, Web.

"The most concrete data in the book involve the way today's parents are raising their kids. It suggests that if today's kids are compliant and deferential to authority, it is because they are being raised to be so. These are kids who, more than before, go to school in uniforms. They are subjected to the standardized tests that have been imposed on schools as part of the accountability reform movement. From 1975 to 1995, according to Howe and Strauss, bike riding declined 60 percent, no doubt in part because parents no longer let their kids roam free. Fewer teenagers work, because they are so busy going from one adult-supervised activity to another. And if kids do seem raucous or uncooperative, the authors point out, often we medicate them"

Retrieved off: <http://www.times.com/books/00/11/05/reviews/001105.05brookst.html>

National Park Information:

<http://www.nature.nps.gov/stats/park.cfm?parkid=34>

<http://www.nature.nps.gov/stats/viewReport.cfm>

This US Department of the Interior website offers data on the total number of visitors in each park per month and includes data on campsite and visitor center usage. Given that it dates back to 1979, this data provides tremendous possibilities for future studies on park use among different generations. UNC will inquire as to whether demographic data such as age of visitors is available in this set.

Relevant Legislation:

*National Environmental Education Act of 1990: requires EPA to provide national leadership to increase environmental literacy. EPA established the Office of Environmental Education within the Office of Public Affairs, Office of the Administrator to implement this program.

This legislation outlines what the EPA's goals were for environmental education in 1990. The legislation addressed how there was increasing evidence that complex issues such as water quality and global climate change were becoming more pronounced.

*No Child Left Inside Act of 2009:

"No Child Left Inside Act of 2009 - Amends the Elementary and Secondary Education Act of 1965 to require states, as a prerequisite to receiving implementation grants, to develop environmental literacy plans, approved by the Secretary of Education, for pre-kindergarten through grade 12 that include environmental education standards and teacher training. Directs the Secretary to award Environmental Education Professional Development Grants to states and, through them, competitive subgrants to partnerships that include an LEA and, permissibly, institutions of higher education (IHE), other educational entities, or federal, state, regional, or local natural resource or environmental agencies, for activities involving, among other things, teacher training and the development of more rigorous environmental education curricula that advance the teaching of interdisciplinary courses. Authorizes the Secretary to award competitive matching grants to partnerships that include an LEA and, permissibly, IHEs, other educational entities, federal, state, regional, or local natural resource or environmental agencies, or park and recreation departments, for activities to improve and support environmental education that include: (1) advancing content and achievement standards; (2) developing or disseminating innovations or model programs; and (3) research"

Retrieved off of: <http://www.govtrack.us/congress/bill.xpd?bill=s111-866>

This bill was first introduced in 2007 but not passed, and it was reintroduced on 4/22/2009. The hope is that this bill will help in:

- 1) Funding to train teachers to deliver high quality Environmental Education and utilize the local environment as an extension of the classroom.
- 2) Giving Incentives for states to develop State Environmental Literacy Plans to insure that every student is prepared to understand the environmental challenges of the future.
- 3) Providing encouragement to teachers, administrators, and school systems to make time and resources available for environmental education for all students.
- 4) Integrating Environmental Education across core subject areas

Retrieved off of: <http://www.cbf.org/Page.aspx?pid=948>

Education:

*Wagner, Cheryl. "Planning School Grounds for Outdoor Education." *National Clearinghouse for Educational Facilities* (May 2000): n. pag. Web. 15 Jan 2010. <www.edfacilities.org >

"Every school's grounds are potential educational spaces where concepts taught within the school building can come alive to students. Research shows that students better absorb and retain math, science, language arts, and other skills that incorporate their immediate environment and use all five senses. Once we accept that education naturally occurs both indoors and out, the term "outdoor learning" will begin to seem as strange as the never used "indoor learning."

"The National Environmental Education Act of 1990 called attention to how the natural environment could be included in curricula at every educational level."

Good Websites:

<http://www.childrenandnature.org/downloads/CNNMovement2009.pdf>

<http://net.educause.edu/ir/library/pdf/erm0342.pdf>

<http://www.eartheducation.org>

Bentley, Michael. "Deficit Disorder: A Plague On Our House." *Education.com*. Web. 29 Jan 2010. <<http://www.education.com/reference/article/nature-deficit-disorder-plague-our-house/>>.

"According to the Center for Research on the Influences of Television on Children (CRTIC), children in America spend more time watching television than in any other waking activity, with additional time devoted to video and computer games and to using the Internet (<http://www.he.utexas.edu/web/CRTIC/index.html>). The fact is that the average home in the United States has more TVs than children, and kids in our country watch more TV than children any place else in the world."