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Stewarding Our Mountains: A Program Evaluation of Place-Based Service Learning on the Appalachian Trail

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Service Learning on the Appalachian Trail

by

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Abstract

Appalachians' relationships with the environment alter over time due to political, economic, and ecological factors. These changing relationships, for instance rural agrarian livelihoods shifting to urban contexts, can influence how an individual perceives personal responsibility in regional environmental stewardship, such as caring for and preserving local ecology. Observing that recent shifts resulted in less perceived youth stewardship for the Appalachian Trail (AT), the Appalachian Trail Conservancy (ATC) created the Trail to Every Classroom (TTEC) program in 2006. The TTEC program attempts to foster stewardship through the practice of place-based service learning - a diversification of education where youth learn through community integrated lessons and local service projects. To date, the ATC had not completed an evaluation of their ability to engender stewardship in its participants. I interned with the ATC for ten weeks and conducted a utilization-focused program evaluation, framing my research questions within the ATC's Theory of Change model and their organizational goal of creating AT stewardship in TTEC teachers, students, and trail partners. For my analysis I utilized a political ecology theoretical lens to place individuals within their political, economic, and ecological contexts which influence human-environment relationships and potentially individual levels of stewardship. My fieldwork utilized the following techniques: participant observation in TTEC communities (11 total); focus groups with TTEC teachers trained in 2015 (n=16), ATC staff (n=2), TTEC teacher alumni (n=3), and TTEC trail partners from local trail clubs (n=3); surveys from TTEC teachers trained in 2015 (n= 38); semi-structured/structured interviews with alumni TTEC teachers (n=28) and TTEC

students (n=124); and TTEC trail partner surveys with local trail clubs and park employees (n=11). Based on the results, I argue that AT stewardship has yet to occur in research participants for three primary reasons: (1) TTEC participants face political, economic, and ecological barriers against accessing public lands and engaging in active, physical outdoor recreation; (2) TTEC participant communities are experiencing socio-economic transitions due to changing industries and migration patterns altering regional land values and human-environment relationships; and (3) the ATC employs an ecocentric (environmental sustainability) model for change while the communities operate within an anthrocentric (human development) model. This project serves as a program evaluation for TTEC's ongoing organizational development and as a case study example of place-based service learning and environmental stewardship within changing Appalachian communities.

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Introduction:

Maybe down the line if kids are exposed to nature then they are the next ones saying "no, preserve this land instead of developing on it" – Virginian TTEC Teacher

Human relationships with the environment are inherently complex because they alter through time and across social groups. By and large, Appalachians historically possessed a strong connection with nature due to an economic dependence on land-use revenue sources, such as mining and farming, and settlement within rural localities. Contemporary Appalachian youth, however, face a dilemma with how to relate to nature due to shifting natural-resource industries and growth of urbanization (Burke et al., 2015:185). Youth now weigh the risks and rewards of further degrading local environments with extractive industries, as coal mining declines and hydraulic fracking expands throughout the region. They must also decide whether they should attempt to stay in Appalachia within these changing contexts, or relinquish themselves to current migration patterns conveying large-scale outmigration (e.g. 10 % of Appalachians out-migrated between 1990-2000) (Poole and Hudgins, 2014; Lichter et al., 2005). Perceiving changing human-environment relationships in Appalachian youth, the Appalachian Trail Conservancy's (ATC) established the Trail to Every Classroom (TTEC) program in 2006 with the goal of engendering AT stewardship and conservation-based land-use.

I interned with the ATC in the spring of 2015 (March-June) and investigated if, after almost a decade of implementing place-based service learning, TTEC fostered AT stewardship in three participant groups- teachers, students, and trail partners. *Place-*

based service learning is an educational method where youth learn through community integrated lessons and local service projects. *Stewardship* can be a nebulous term as it has many definitions and possible measurements. Combining academic literature with federal classifications, I defined stewardship as the cultural, economic, and ecological connection that an individual has with their environment for earning a living, doing something worthwhile in local communities, and protecting regional landscapes (NEPA, 2014; Lee & Hancock, 2011). Aligning with the ATC's self- ascribed organizational goals, I measured stewardship within their more narrowed definition as they mark AT stewardship as: teachers actively engaging with the AT and bringing new teachers to TTEC, students volunteering with local clubs and agencies, and trail partners spreading AT awareness throughout their communities.

My research utilized the theoretical lens of political ecology to illuminate local political, economic, and ecological contexts impacting how people identify with nature and stewardship. In this case, the political, economic, and ecological circumstances impacting why TTEC participants take on certain roles (conversationalist, outdoor enthusiast, farmer, or miner) in their human-environment relationships (Escobar, 1999; Forsyth, 2004; Robbins, 2005; Crumley et al., 2001). Studying these settings, I employed the following data collection methods: participant observation in TTEC communities (n= 11); one hour focus groups with 2015 TTEC teachers (n=16), ATC staff (n=2), trail partners from local trail clubs (n=3), and TTEC alumni teachers (n=3); one page surveys from 2015 TTEC teachers (n= 38); semi-structured/ structured interviews with alumni

TTEC teachers (n=28) and TTEC students (n=124); and online TTEC trail partner surveys with local trail clubs and park employees (n=11).

Based on my results, I argue that TTEC has yet to produce AT stewardship within research participants due to three main components: (1) TTEC participants face political, economic, and ecological barriers against accessing public lands and engaging in active, physical outdoor recreation; (2) TTEC participant communities are experiencing socio-economic transitions due to changing industries and migration patterns altering regional land values and human-environment relationships; and (3) the ATC's ecologically based language is not inclusive of Appalachia's heterogeneous perspectives which are predominately anthrocentric (human based) in action. These findings add to the current dearth of academic research surrounding the relationship between stewardship and place-based service learning. Moreover, the application of political ecology demonstrates the possibilities of utilizing social sciences as a tool for understanding the dynamics of community development as well as the potential lessons learned through opening conversations around perceptions of nature. The applied aspects of my research are that it supports the ATC's program development in the following ways: 1) An updated alumni database complete with a list of teachers still actively implementing TTEC curriculum in 2015; 2) raw data, before theoretical analysis, with initial recommendations for use and interpretation by the ATC in program development [see Appendix H]; and 3) my final applied master's thesis paper for deeper insight into the TTEC program through the application of a political ecology theoretical lens.

Research Questions and Hypotheses:

In order to gauge whether the ATC's TTEC program engenders stewardship among teachers, students, and trail partners, I asked the follow deductive research questions and generated hypotheses based on an academic literature review, TTEC's organizationally ascribed outcomes as outlined in their *Theory of Change* model [Figure 5], and preliminary research conducted with the ATC:

Q_1: Have TTEC teachers developed stewardship for the AT- either through doing direct service, continual teaching using the AT, or engaging fellow teachers in AT conservation?

Q_2: Have communities and trail partners gained greater stewardship for the AT - either through increased community volunteerism, creating more reported connections to the AT, or engaging with the school in AT service projects?

Q_3: Have TTEC student alumni developed stewardship for the AT- either in short-term service projects, long-term appreciation for its conservation, or engaging the local community in AT's preservation?

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H_1: Teachers trained in TTEC's curriculum will spend more time supporting the AT through volunteerism, continued participation in TTEC, and encourage new teachers to enroll in the program due to an adoption of stewardship.

H_2: Trail partners who work with TTEC's students and teachers will show more time spent volunteering, more self- reported connection with the AT's conservation, and engage more regularly with TTEC schools due to an adoption of stewardship.

H_3: Students who engaged in TTEC's service- learning place-based curriculum will have higher recorded levels of volunteerism on the AT, a larger self-reported appreciation of environmental conservation, and pull in other community members to AT projects due to an adoption of stewardship.

Theoretical Framework and Key Terms

My research utilized the theoretical framework of *political ecology*, which suggests that political, economic, and ecological circumstances influence human-environment relationships (Escobar, 1999; Forsyth, 2004; Robbins, 2005; Crumley et al., 2002). In the case of TTEC participants, often situated within rural areas economically dependent on natural resources, political ecology prompted my research to explore past and current circumstances impacting local biophysical realities. Individuals within a single community can possess a multitude of values and uses for natural resources (Spoon, 2011). For example, people may use a forest to hunt because they need to feed their children, families may build an isolated homestead within it to escape urban lifestyles, or they could protect it because they know the impacts of environmental degradation. Therein lies the reason for applying political ecology as it pulls apart these conflicting views and gives recognition to all of natures' imposed realities and uses. Then, by understanding these circumstances, the research can begin to expand the definition and applications of stewardship beyond it being about TTEC participants making a simple choice- to a complex ideology tied within individual contexts. The research can also suggest to what degree these viewpoints may cause barriers against reaching ATC's organizationally ascribed goal of AT stewardship and how some of those obstacles can be both understood and overcome.

According to Escobar (1999:1), nature's challenge is not only its degradation, but also the modern idea that nature can exist separate from people. The ATC conveys this

ethos from their founder, Benton MacKaye, who created the AT with a philosophy

similar to the U.S. Wilderness Act of 1964- designating that protected areas should be

utilized by people for recreation but not human occupation (Gomez-Pompa, 1992, ATC,

2014). Still further, TTEC's stewardship model follows this ideology with their ultimate

goal of TTEC participants using the AT and protecting its ecology. Stevens (1997: 36)

calls this mentality the *old paradigm* of protected lands- recommending that

governments should both maintain and protect public lands from the exploitation and

occupation of people. Additionally, avid hikers attempting to walk the entire AT mark

achievement through temporarily disconnecting from the constraints of industrial

society and challenging themselves both physically and mentally. This viewpoint aligns

with Fletcher's (2014: 339) *ecotourist gaze* suggesting that nature is an experience

which should be preserved for therapeutic escapes and achieving success through

active, physical outdoor experiences (Urry, 1992; Milton, 2013). Noting these viewpoints

of nature, alongside the fact that in 1968 the AT became a National Scenic Trail under

the National Parks Service, the ATC's organizational culture suggests an *ecocentric*

(environmental) based ideology which separates nature from human occupation and

denotes stewardship as people protecting local ecology.

Conservation efforts largely assume that local communities threaten ecology and

often neglect rural social histories - replete with personal and economic valuing of the

land (Stevens, 1997). As Cronon (1995:11) states, "the dream of an unworked natural

landscape is very much the fantasy of people who have never themselves had to work

the land to make a living." Living within an Appalachian setting, TTEC participants

potentially construct nature through an immersed context, where nature is their family

farm, cultural roots, and revenue source (Vandergeest & DuPuis, 1996). Still further,

they likely align with a stewardship model similar to the Catskills Water Community

(CWC) project where both wilderness and human communities require mutual

protection and development. Within this model of stewardship, integrated

programming educates the community on ecological friendly farming practices,

beautifies local parks and recreation areas, sponsors business development grants,

provides new roads and sidewalks, and encourages tourism heritage programs (Postel &

Thompson, 2005). The principal Appalachian narrative suggests that most TTEC

participants align within an *anthrocentric* (human) based ideology and stewardship

model which intertwines the environment and human societies within mutual

sustainability, but places significance in socially based interventions such as the CWC.

Recognizing that regional youth did not regularly volunteer on the AT, according

to a 2003 community assessment, the ATC created TTEC to integrate place-based

service learning into schools and consequently create AT stewards. *Place* is a geographic

space which holds individual meaning to people and groups within a community due to

historic, linguistic, and cultural situations (Yung et al. 2003; Escobar, 1999). Place also

includes individual identification with *community*- determined by the possession of

distinct pride and attachment to local institutions and infrastructures (Robins, 1991).

Place-based programs attempt to harness the need for local identity and create positive

connections to community, nature, and conservation (Flowers, 2010; Yung et al., 2003).

   Service-learning can allow for a greater qualitative understanding of an area

through a deep analysis of the challenges happening within the community (Artz, 2001).

In practice, service-learning is a three-leveled process of research, implementation, and

reflection. It takes participants through the process of understanding why the need for

service exists, how they can help, and how their efforts impact change. Furthermore,

the difference between service-learning and general volunteerism is a mutual benefit

between the provider and receiver as both groups create and implement the project

(Bilig, 2000, Furco, 1996). Likewise, service completed by local people could potentially

allow for internal change and possibly create sustainable development rather than

temporary fixes (Artz, 2001; Bauch 2001).

   Combining the two terms, *place-based service learning* focuses on community

needs, requires active participation and reflection, and creates diversified learning

opportunities (Bilig, 2000). The TTEC program follows this model with hopes that going

into local communities provides students and teachers with a common space for

creating coalesced intergenerational stewardship (Mannion and Adey, 2011). Notably,

through the ATC connecting the importance of place with the concept of stewardship,

they already apply aspects of a political ecology perspective – considering how

community social dynamics impact individual human-environment relationships.

Lastly, place-based service learning can go by many other terms with each definition modifying programmatic objectives only slightly, including but not limited to: ecological education, community-oriented education, environmental education, and bio-regional education (Bishop, 2004; Mannion and Adey, 2011). Known by different terms but aligning with TTEC's organizational goals, they encourage GIS mapping by local students to boost tourism (Schumann, 2013), community walks followed by reflective writing and conversations (Kudryavtsev et al., 2012), or focus on culture by studying bluegrass and biographies from local elders (Haleman and DeYoung,2000). Overall, these programs aim to change the culture of education from one producing consumers and a work-force to creating active citizenry. These models also believe that students should know their ecological connection to the environment and develop inquiry for how they can change their impact (Woodhouse and Knapp, 2000).

People identify with nature in a multitude of ways, each produced by specific and dynamic political, economic, and ecological contexts. Burke et al. (2015:185) states that societies, "do not simply have different hopes and plans for the environment, they actually experience and understand the environment in fundamentally different terms." My research critically considers these varying human-environment relationships and the contexts which creates those variances with extensive research and the application of a political ecology lens. By doing this my research aims to determine whether research participants ultimately achieved AT stewardship through TTEC's implementation of place-based service learning.

Research Context:

Appalachian Mountains, Appalachian Trail, and Appalachian Region

The Appalachian Mountains begin in northern Alabama and extend to the Canadian

Providence of Newfoundland and Labrador. The Appalachian Trail (AT), founded in 1925

and designated as the first National Scenic Trail in 1968, spans approximately 2,180

miles from Georgia to Maine and ranges in elevation from 124 to 6,643 feet above sea

level [Figure 1]. In 1965 the Appalachian Regional Development Act defined the

Appalachian Region as the southern and central sections of the Appalachian Mountains

and includes: 13 states, 205,000 square miles, and over 25 million people (ARC, 2013)

[Figure 2]. The regional definition excludes the northern portion of the Appalachian

Figure 1: Appalachian Regional Map

Sourced online at AppalachianTrail.org, 2015

Figure 2: Appalachian Region Map

Sourced online at ARC, 2009

Mountains and AT due to cultural dissimilarities, states opting out of joining because of

Appalachian stereotypes, geological differences, and economic variance (ARC, 2015).

Ergo, Appalachia as a region, mountain range, and trail is not homogenous and the

following is admittedly a generalization of the context in which TTEC participants reside.

Historic records portray Appalachians with many positive attributes: deep kinship,

high valuation of land, and strong in spirit (Russ, 2010; Scott and McSpirit, 2014). A 2015

study in western North Carolina found locals referencing nature using possessive terms

like "our" when describing local landscapes, focused on a social history perspective of

nature as they referenced human histories on the land, and considered nature both

accessible and familiar (Burke et al., 2015). However, a majority of Appalachia's past and

present contain stereotypes, painting Appalachians as backwards hillbillies with low IQs

and questionable morality (Lewis and Billings, 1997; Horning, 2012; Howley et al. 1996;

Russ, 2010). Many of these fabricated attributes result from 20th century satiric writings,

but regional economic data also offers some factual information into the negative

labels. Statistically, according to the Appalachian Regional Commission (2014),

Appalachians are 1.6 % more impoverished than the rest of the U.S., 7% below the

national average in bachelor degrees, and 56 Appalachian counties have a median

household income less than $30,000 (ARC, 2014). Distorted cultural realities layered

with factual economic challenges fostered regional isolation as people developed

mistrust for outsiders and bound into family structures for support. Appalachia also

contains a complex history interwoven in natural resource dependency and externally

imposed environmental schemes (Scott and McSpirit 2014; Howley et al. 1996).

<u>Environmental Change in Appalachia</u>

Prior to the 18th Century, historic records show multiple generations of

Appalachians working the land, timbering the forests, and passing family farms onto the

next of kin (Horning, 2010; Lewis and Billings, 1997). As soon as natural resources were

discovered, however, Appalachia became a region of subjugation and extraction as the

mountains were deforested, mined, harvested, and expendable (Barnes 2008). Since

1880, human activities altered 98% of the Southern Appalachian landscapes, including:

logging, roads, coal mining, and farming (Gragson and Bolstad 2006; Lee & Field, 2005).

In 1876, the Little Kanawha River in West Virginia transported 1,162,900 feet of lumber,

57,749 railroad ties, and 45,050 cubic feet of ship-timber to external colonies (Lewis and

Billings, 1997). Continuing into today, since 2005, the Marcellus Shale fracking company

created an estimated 30 million gallons of wastewater in Pennsylvania (Ridlington and

Rumper, 2013). According to Burke et al. (2015: 186) this use of Appalachia as an

'internal colony' fostered an entrenched suspicion of outsiders sanctioning

environmental undertakings.

Further imposing external environmental schemes on Appalachia, 19th and 20th

Century federal agencies began preserving public lands under the paradigm that nature

should be protected from the threat of people (Burke et al. 2015; Stevens, 1997). This

establishment of public lands significantly impacted Appalachia as federal agents,

speaking in complicated scientific terms, took control of land which was once an open forest commons. In just one example, 467 people were displaced from western Virginia in order to create the Shenandoah National Park in 1935 (Horning 1999). Public lands also removed large tracts of property from the local tax base, which was felt significantly in communities already struggling to make ends meet. Kirk et al. (2012:48) questions if this movement towards environmental management helps or harms nature as these new 'natural' spaces also bring urban populations in to the region seeking the 'wilderness experience'. These newcomers move into the borders of public lands and sometimes end up encroaching on that which they seek to preserve. According to a 2011 spatio-temporal analysis, 67% of all new constructions in western North Carolina will be in forested areas (Kirk et al. 2012, Bolstad & Manson, 2012). U.S. Census data from 1990-2000 shows seasonal housing units in Appalachia quintupled and the percentage of total developable land increased from 54% to 65% between 1980 and 2000 and is estimated to increase further another 74 % by 2020 (Kirk et al., 2012).

Nevertheless, while this drive towards natural reserves defines nature in terms of affective value there is still a direct value which public lands could have on local economies (Flether, 2014: 343). Public lands can offer jobs in forest ecology, subsidized land purchases from landowners, and economic diversification (Burke et al., 2015:187). Additionally, people annually spend over one trillion USD on tourism, showing that natural resources can have an economic value in situ (Fletcher, 2014). Linking tourism to stewardship, Honey (2008:3) suggests the *stakeholder theory*, which assumes what

people will protect and steward nature if they perceive it as an asset. Following this philosophy, if people protect that which they perceive as having worth and TTEC communities begin to recognize that potential, then these new trends towards conservation-based efforts could be stewarded by local people and create positive human-environment relationships (Lee and Hancock, 2011).

Appalachian Trail Conservancy

Created in 1925, The Appalachian Trail Conservancy (ATC) oversees the AT's development and its volunteers. In 1968 the AT, along with the Pacific Crest Trail, became the first National Scenic Trails under the National Parks Service (NPS). As of 2015, the ATC had 13 Board of Directors, 15 Stewardship Council members, four Regional Partnership Committees, 31 Trail Maintaining Clubs, and 13 full-time staff (ATC, 2014). This large organizational structure supports two million tourists annually, over 5,600 volunteers, and serves as a public-private partnership between the ATC, trail communities, and over 75 state and federal land-management agencies (ATC, 2014). The ATC defines nature through as conservationist perspective according to their mission statement, belief in *Leave No Trace Principles (LNT)*, placement within the National Parks Service, and organizational base in ecotourism. The ATC's mission and vision statements cite the AT's 'vast natural beauty', 'delicate majesty', and the 'trail as a haven' [Figure 3]. They also actively teach LNT [Figure 4], where people should follow seven principals grounded in leaving nature exactly as they found it. For instance, principal five states - *leave what you find*. The ATC teaches these seven principals at all

of their TTEC trainings and actively promote them through their website and community

outreach. Lastly, the NPS manages the ATC further rooting the organization in

ecotourism and NPS conservation standards. These principles identify nature as fragile

within the expanding human world and a source of recreation but not habitation

(Foresta, 2013).

Figure 3: Appalachian Trail Conservancy Mission and Vision Statements
ATC MISSION: The Appalachian Trail Conservancy's mission is to preserve and manage the Appalachian Trail – ensuring that its vast natural beauty and priceless cultural heritage can be shared and enjoyed today, tomorrow, and for centuries to come. **ATC VISION:** The Appalachian Trail Conservancy's vision is to connect the human spirit with nature – preserving the delicate majesty of the Trail as a haven for all to enjoy. We are committed to nurture and protect this sacred space through education and inspiration. We strive to create an ever-expanding community of doers and dreamers, and work to ensure that tomorrow's generations will experience the same mesmerizing beauty we behold today. Sourced from ATC Staff

In 2003, 100 AT Club members and the ATC determined that the AT had an aging

volunteer demographic. Seeing this challenge, Rita Hennessey, Assistant Trail Manager

of the Appalachian Trail Park Office (ATPO) at the time, pursued a MA in *Community*

Change and Civic Leadership. Through her master's program, Rita discovered service-

learning and stewardship as the tool for maintaining the organization's volunteer base.

Consequently, Rita founded the Trail to Every Classroom (TTEC) program in 2006 under

the ATC umbrella organization. TTEC began as a summer institute training 30 teachers

under the instruction of Delia Clark, who was already teaching the same place-based

service learning model through the Forest for Every Classroom program in Vermont (US

NPS, 2016). In 2007, TTEC reached its self-ascribed ideal scale with three seasonal

trainings and 50 teachers per annual cohort. The expectation of TTEC teachers is that

they attend these three trainings in the course of a year, submit blog posts about their

experiences with TTEC, and create a curriculum in which TTEC is applied. The curriculum

does not have strict guidelines and could include: hiking the AT for a physical education

class, studying local stream ecology in biology, or drawing flora in an art class.

Curriculum is then shared through an online database for other teachers to adapt and

apply within their own schools and state education standards.

The current TTEC population is 300 alumni TTEC teachers having completed the

one-year training program since 2006, 208 TTEC teachers currently listed as actively

implementing TTEC curriculum, 38 TTEC teachers trained in 2015, approximately 3,000

students enrolled in 2015 TTEC classrooms, and 55 trail partners supporting TTEC

activities. Eighteen TTEC Advisory Council (TTECAC) members represents this population

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Figure 4: Leave No Trace (LNT) Principals

1. **Plan ahead and prepare**: learn everything you can about the area and the regulations for its use.
2. **Travel and camp on durable surfaces**: use established campsites and trails. Keep camps small and at least 200 feet from water, occupied campsites, and trails.
3. **Dispose of waste properly:** "pack it in, pack it out"
4. **Leave what you find:** do not damage, deface, or remove natural objects or cultural artifacts. Don't build structures, dig trenches, or alter natural features.
5. **Minimize use and impacts of fire:** use a lightweight stove, instead of fire. If you build a fire only use small dead wood found on the ground.
6. **Respect wildlife:** Watch wildlife from a distance and never approach, feed, or follow it. Control pets at all times and consider leaving them at home.
7. **Be considerate of other visitors:** Don't disturb others. Preserve the natural quiet.

Sourced online at ATC, 2014

with one teacher, one club representative, and TTEC staff from each of the four sub-regions (Southern Regional Office-SORO, Virginia Regional Office- VARO, Mid Atlantic Regional Office- MARO and New England Regional Office- NERO).

TTEC's *Theory of Change Model* [Figure 5], drafted as part of the organization's originating documents in 2006, designated the organizational goal of creating stewardship in teachers, students, and trail partners. The short to mid-term outcomes of this model call for the development of volunteers within these three main participant groups. My research focuses on the long-term outcomes suggesting that TTEC participants achieved stewardship if: teachers are actively bringing in new TTEC teachers, students are engaged through volunteering with local clubs and agencies, and trail partners are spreading AT awareness throughout their communities.

Figure 5: Trail to Every Classroom Theory of Change Model

Short-Term Outcomes
- Teachers view AT as a valuable teaching tool and implement place-based service-learning curriculum.
- Students increase awareness of the AT.
- Trail partners understand their role as a local resource to schools.

Mid-Term Outcomes
- Teachers sustain and improve professional practice through alumni workshops and TTEC grants
- Students are engaged in trail activities through a stimulatd interest in volunteerism.
- Trail partners actively support education activities with management support .

Long-Term Outcomes
- Teachers become mentors for other faculty
- Student alumni of trail-based service-learning volunteer with clubs and agencies
- Trail partners and students create community awareness for the AT in parents and other community members.

Sourced from ATC staff

According to ATC staff, TTEC's challenges in the coming years are financial growth, maintaining teacher alumni involvement, and documentation of successes. Also, TTEC functions with limited staff, a budget of approximately $150,000 annually, and no means for significant data collection (ATC, 2014). When working with such a vast geographical space and large impact numbers, the capacity to maintain an alumni database, track outcomes, and create program development can be difficult. My research attempts to ameliorate these deficiencies through a supportive program evaluation aimed at TTEC's organizational growth. Consequently, my research fulfills a great need not only in the study of environmental stewardship and place-based service learning, but also aids TTEC with their overall ability to be sustainable, obtain money, and better meet their organizational goals.

Classroom Context

Due to state and federal education legislation such as No Child Left Behind and The Common Core, Appalachian youth live in an era where test scores mark achievement. As quoted from a TTEC alumni teacher, "there is more to education than passing a test, and that's what the trail offers." Researchers at Educational Testing Service (ETS) administer over 50 million standardized tests annually; however, "only 33 percent of 5th- 12th graders are success ready," meaning engaged and thriving in their education and hopeful for their futures (Griffith, 2014). Standardized tests evaluate intelligence levels and college-ready skills rather than an individual's ability to control

their attention, emotions, or behavior within socially constructed principles (Duckworth et al, 2012). In the regional contexts, between 2006 and 2010 more than half of the adult population in 90% of Appalachian counties did not have a degree higher than high school (Pollard & Jacobson, 2013). This suggests that 'teaching to tests' does not ensure success in places which do not have the ultimate goal of going to college (Froerer and Portisch, 2012). Appalachian youth who do go on to higher education spend their early adulthood collecting college debt, buying land near towns, competing with newcomers for land, and growing increasingly disengaged from the community (Keefe, 2000).

Figure 6: Schools along the Appalachian Trail and County Rurality

Sourced from ATC staff and adapted using ArcGIS; Bonnie Harvey, 2014

TTEC teachers struggle within this context and cite the testing culture as one of the main barriers to implementing TTEC curriculum. Testing standards restrict teachers to state approved curricula and do not provide much leeway for extracurricular excursions. Consequently, TTEC teachers argue that schools should move away from this type of school culture and capitalize on rural communities possessing a wealth of social capital untapped in classrooms 'teaching to the tests'. *Social capital* includes: community based organizations, engaged citizenry, personal and relational support systems, and social networks (Poortinga, 2012). There are approximately 470 public K-12 schools along the AT where community-school collaborations hold potential of being a focal point in community engagement, local stewardship, and regional revitalization (Bauch, 2001) [Figure 6]. Evaluating if the ATC created AT stewardship, rooted in community-school partnerships through place-based service learning, I applied the following research design and methodology.

Research Design and Methodology

I think one of the biggest things is- I like how everything you did was aimed at helping us as an organization. – TTEC Staff

My research occurred during a ten-week internship, March-June 2015, working in partnership with TTEC staff, the TTEC Advisory Council (TTECAC), and under the mentorship of Dr. Jeremy Spoon. I delineated my research into four phases which overlap chronologically and differentiate into the following methods of study and analysis: *Phase I-* participant observations of TTEC teacher trainings (n=3), classroom group trail hikes (n=2), and community visits (n= 6); *Phase II-* one hour focus groups with new TTEC teachers trained in 2015 (n=16), ATC staff (n=2), trail partners (n=3), and TTEC alumni teachers (n=3), and one page surveys from 2015 TTEC teachers (n= 38); *Phase III-* semi-structured/structured interviews of alumni TTEC teachers (n=28) and TTEC students (n=124), and TTEC trail partner online surveys (n=11); and *Phase IV-* data analysis [Table 1].

Preliminary Research

I conducted preliminary research in 2014's Spring Term (March – June) to define the field of study via GIS mapping [Figure 6] and develop rapport with TTEC staff through informal phone conservations. Then, in July 2014, I attended a three-day TTEC workshop in Front Royal, Virginia to network with TTEC teachers, observe workshop implementation processes, and further develop relations with ATC staff. This preliminary research allowed for a better understanding of TTEC's organizational culture

and set up my research design and methodology within a cooperative program

evaluation model.

Table 1: Research Phases, Data Collection, and Analytic Techniques					
Phase	Method	Location/Activity	Tool for Analysis	Analytic Tools	Research Question
Phase I	Participant Observation	Regional Workshops	Field notes- Log	Coding	Q1, Q2, Q3
		School Observations	Field notes- Log	Coding	Q1, Q2, Q3
Phase II	Surveys	Regional Workshops	Demographic Data Collection	Descriptive Analysis	Q1
Phase II	Focus Groups	Regional Workshops	Field Notes- Log Transcription of Discussion.	Memoing Coding Exemplars	Q1, Q2
Phase III	Semi-Structured/ Structured Interviews	Phone interviews (teachers), Classroom interviews (students), Regional Workshops (trail partners)	Field Notes- Log Transcription of Responses. Likert Scale	Memoing Coding Exemplars	Q1, Q2, Q3
Phase III	Online Surveys	Electronic (SurveyMonkey.com)	Transcriptions of responses	Memoing, Coding, Exemplars	Q2

Evaluation

Applying *utilization-focused evaluation* and *outcomes-based* program evaluation

models, I employed a collaborative evaluation process, outlined below, throughout all

stages of my research. I applied these methods because program evaluation ought not

to be about creating pass-fail results, but rather utilizing research data alongside an

organization's ascribed goals to facilitate meaningful change (Feston and Philbin, 2006;

Smith and Shen, 1996; Patton, 1986). Likewise, evaluation of internalized practices such as stewardship are difficult to quantify with test scores and better measured through a 'theory of change' model which the organization creates as part of their originating documents (Heimlich, 2010: 182).

First, my research applied Marcia Festen and Marianne Philbina's *outcomes-based model* to investigate ATC's self-ascribed goals, i.e. TTEC's Theory of Change model [Figure 5], and determine if participants' experiences corresponded with the ATC's organizationally recognized objectives (Patton, 1986; Carlton-Hug and Hug, 2010; Flowers, 2010; Festen and Philbin, 2006). Within this model, TTEC outlined short-term, mid-term, and long-term outcomes for TTEC teachers, students, and trail partners. The short and mid-term outcomes stand within immediate actions, such as growing awareness and interest in the AT. My research investigated TTEC's long-term outcomes-focused on fostering AT stewardship within the three participant groups expressed through their active participation and advocacy towards community AT awareness. Second, I engaged Michael Patton's *utilization-focused evaluation* method to draft interview questions in partnership with the ATC. Utilization-focused evaluation provides the participatory approach through which the program and researcher come together to create the most useful questions for applicable results (Fowler, 2010). More specifically, I added semi-structured/ structured interview and focus group questions creating longitudinal data which connects with ATC's 2010 program evaluation [see Appendix C: Questions 5,6, and Likert Scale] and ATC's current programmatic based inquiries [see

Appendix C: Questions 1, 11 & Appendix D: Questions 2, 9, and 10] . These two models

support an inclusive study where the community and organization feed into, and receive

benefits from, academic field research (Patton, 1986; Scott and McSpirit, 2014; Ervin,

2005).

Sampling Demographics

My sample included 13.5% of active TTEC Alumni (N=28), 4.2% of the current

TTEC student (N=124), 100% of TTEC Teachers trained in 2015 (N=38), and 25% of trail

partners (N=14) [see Appendix G]. I achieved this sample size through *convenience*

sampling and continued collaboration with the ATC (Schensul and LeCompte, 2012). I

applied convenience sampling through asking all TTEC teachers, classroom groups, and

trail partners to volunteer their time for interviews or observations and accepting

anyone who had enough time to participate. Noting that I did no employ targeted

distribution sampling, I managed to achieve a regional spread of teachers and a wide

range of grade levels from students [Tables 2 and 3]. The TTEC Advisory Council

(TTECAC) supported this sampling by connecting me with teachers for participant

observation hikes, completing 11 of the TTEC Alumni teacher semi-

structured/structured interviews, and reaching out to 5 classrooms for student semi-

structure/ structured interviews.

During all phases of my research, according to agreed upon IRB protocols with

Portland State University, I received verbal informed consent from all teachers and trail

partners before they participated in the study, and verbal assent from the youth and

written consent from parents before I worked with any students. Also, I conducted all

research with children in collaboration with TTEC teachers allowing for a safe space in

which youth could answer questions. No participant chose to remain outside of the

study, but they were informed that choosing to do so would not result in penalty. Lastly,

in the returning of data to community partners, all information was compiled using

pseudonyms to assure anonymity of all participants.

Table 2: TTEC Teacher Participation In Research, n=63

Number of Teachers (y-axis, 0 to 12)

State	Alumni Teachers	2015 TTEC Teachers
GA	2	5
NC	8	2
TN		2
VA	6	11
WV		2
PA	2	6
NH	5	3
MA	2	3
VT	2	
ME	1	2
MD		1

■ Alumni Teachers   ■ 2015 TTEC Teachers

Table 3: TTEC Student Participation In Research, n= 124

Grade	Number of Students
12	1
11	1
10	0
9	3
8	6
7	34
6	6
5	42
4	32

■ Students

Phase I: Participant Observation

     Throughout my research, I conducted *participant observation* in several locations: I attended two regional TTEC workshops (Southern- SORO and Virginian- VARO), hiked sections of the AT and visited local communities (McAfee's Knob- VA, Grayson Highlands- VA, Amnicolola- GA, Dahlonega- GA, Max Patch- NC, Hot Springs- NC, Damascus- VA, Harper's Ferry- WV), spent a total of five weeks at ATC regional offices (Asheville- NC, Roanoke- VA), hiked with two elementary school groups (Hot Springs Elementary-NC and Sugar Grove Elementary- VA), and attended TTEC's summer institute (Harper's Ferry- WV). During these observations, I collected descriptive field notes in the form of a daily log to itemize how my time was spent, created brief profiles of the people I met, and developed a running list of research observations and plans for what I wanted to know more about.

     A large portion of my participant observation occurred at TTEC regional workshops in SORO (April 11-12) and VARO (May 1-2). These workshops occur three times annually and are the venue for training new TTEC teachers in place-based service learning.

Figure 7: VARO Regional TTEC Training; photo by Bonnie Harvey, May 2015

I participated in and aided facilitators with all daily activities over the two-day workshops. Given an overlap of the regional workshops, I could not attend the MARO and NERO gatherings as both were also occurring on May 1-2.

Next, I observed two 3rd-5th grade student groups (Hot Springs, NC and Hungry Mother State Park, VA). During this time, I collected student semi-structured/structured interviews, conduct informal conversations with teachers and students throughout the course of daily activities, and supported local teachers during hiking fieldtrips with extra adult supervision. With both classroom groups I accompanied them on a school day hike, but each provided opportunities for additional observations. In North Carolina I accompanied students to a science research day in which the class observed and recorded insects in the local stream [Figure 8]. Then, in Virginia I observed a service project in which students planted flowers in the local State Park [Figure 9].

Figure 8: Youth studying local stream ecosystems; photo by Bonnie Harvey, April 2015

Figure 9: Youth after planting flowers in western Virginia; photo by Bonnie Harvey, May 2015

Lastly, additional observations occurred while working in two ATC regional offices (SORO and VARO) over the first month of my internship [see Appendix F]. This time allowed me orient myself with the daily tasks of ATC staff, become familiar within cities which are in close proximity to the AT, and build local relationships with ATC staff. Also, it provided a jumping off point for taking day hikes on local sections of the AT and more community observations. This was especially important as it was thru-hiker

season, the time when large groups of people hiking the AT pass through those sections of the trail, allowing me to gain an understanding which is inclusive of the hiker community.

Phase II: Focus Groups and Surveys

I conducted two focus groups, one at both the VARO and SORO regional workshops (April 11-12 and May 1-2) with new TTEC teachers, TTEC alumni teachers, and trail partners. Both focus groups totaled the following participation: 16 new TTEC teachers, two ATC staff, three TTEC alumni teachers, and two community trail partners. Both

Figure 10: SORO Focus Group; photo by Jan Onan, April 2015

meetings were approximately an hour in length, recorded with written notes and a voice recorder- later transcribed, and used the same meeting agenda [see Appendix B].

Additionally, I collected demographic data in the form of a one-page survey from all new TTEC teachers before each of the VARO and SORO focus group meetings [see Appendix A]. MARO and NERO spring workshops also provided the same survey allowing for a greater regional sampling outside of the southern and central regions where my work occurred.

Phase III: Structured/Semi-Structured Interviews and Surveys

During the second month of my internship, I facilitated a total of 155 semi-structured/ structured interviews with TTEC alumni teachers (n=28) and students

(N=124); and 11 trail partner surveys [see Appendix C, D, and E]. Working in collaboration with six TTEC teachers and 18 TTECAC, we implemented the interviews over a two month period, in person and on the phone. Teacher and trail partner interviews were an average of ten questions in length, provided that some probing questions were inserted, and conducted one-on-one. Considering time allowances, students' interviews were nine questions in length and organized both as one-on-one and small group meetings with the interviewer reading questions while students wrote responses. TTECAC completed 11 teacher interviews, and TTEC teachers accomplished 94 student interviews. In an effort to make reporting more accessible, teachers and TTECAC entered participant responses through Survey Monkey [see Appendix C and D]. I then entered the responses in Microsoft Excel for analysis. The TTECAC also received written and verbal instruction on the level of probing detail needed, what the subdomains and variables of interest are, and best practices in conducting interviews (Schensul and LeCompte, 2012).

I attempted to complete interviews with trail-partners but faced challenges in that it was the spring busy season for park employees and trail volunteers. Thus, in order to obtain more information from trail partners, I compiled a brief online survey through Survey Monkey [see Appendix E] and sent it to the 55 trail partners listed in TTEC's trail partner database. In total I received 11 responses from the following organizations: Nantahala Hiking Club (2), MRATC (2), Susquehanna Appalachian Trail Club, Piedmont Appalachian Trail Club, Georgia Appalachian Trail Club, Appalachian Trail

Conservancy, USFS- Blue Ridge District (2), Roanoke Trail Club, and Carolina Mountain Club.

Phase IV: Data Analysis

The combination of overlapping methods fostered *interactive processing,* where the data constantly feeds back into the questions, allowing me to study data throughout the time of research (Bernard, 2011). Thus, while I dedicated the last three weeks of my internship to *deductive* content analysis of the previous three phases, I was constantly processing the information throughout my research. This happened most significantly in Phase I's participant observation as it allowed me to frame my interviews and focus groups questions while providing time for informal interviews and rapport building with TTEC participants. Then, using texts from Phase II's focus groups and surveys, I tabulated transcripts into a *coded text scheme* through finding the frequency of key words (i.e.

Table 4: Variables Considered During Detailed Textual Analysis

Variable	Descriptions
Temporal Scale	How far into the past or future do participants speak?
Spatial Scale	What spatial scale do participants identify when speaking of their communities and/or the environment: local, community, state, region, national, or global?
Human Scale	Do participants see themselves as disturbers, users, protectors, investigators, etc. and do they see their actions as individual (I/me) or collective (us/ we)?
Environmental Value	What do participants suggest about why the environment is valuable: intrinsic, ecological, spiritual, recreational, human health, climate change, experiential?
	Source: Adapted from Burke et al. 2015

volunteerism, community, steward, family, trail…) and the context in which they were used [Table 6].

Next, using Phase III interview responses and borrowing from Burke et al. (2015: 189), I adapted a textual analysis rubric and systematically identified the scale (i.e. temporal, spatial, human, and environmental) to which participants spoke [Table 4]. For instance, if the participant used "we" instead of "I" regularly in their speech then they spoke on a collective human scale rather than an individual one. This allowed me to engage the data in a deductive analysis, create analytic categories for syntheses between the methods, and foster corollaries under the theoretical model of political ecology (Bernard, 2011). Lastly, I pulled *exemplar quotes* from participants to illuminate the research conclusions and provide specific contextual examples for a richer analysis (Schensul and LeCompte, 2012).

Results and Discussion:

Going into the woods is not a normal part of their community lives. – TTEC Trail Partner

Defining stewardship as an individual's cultural, economic, and ecological connection that an individual has with the environment while considering TTEC's Theory of Change model's stewardship ideals, I argue that TTEC participants do not possess identification with the AT and have not yet acquired AT stewardship (Lee & Hancock, 2011:24). I present this argument through three components: (1) TTEC participants face political, economic, and ecological barriers against accessing public lands and engaging in active, physical outdoor recreation; (2) TTEC participant communities are experiencing socio-economic transitions due to changing industries and migration patterns altering regional land values and human-environment relationships; and (3) the ATC's ecologically based language is not inclusive of Appalachia's heterogeneous perspectives which are predominately anthrocentric (human based) in action.

Public Land Use and Appalachian Trail Exclusion from Local Community Perspectives

Our community views land as income -TTEC Alumni Teacher

Political, economic, and ecological circumstances can cause barriers or promote individual agency in environmental management (Dupuis and Vandergeest, 1996). In this case, TTEC participants' history as an internal colony positions them as resistant to externally controlled natural resource uses. Also, a predisposition as users of the land (i.e. hunting, ramp collection, timbering etc.) places them at odds with conservationists seeking to remove people from the wildernesses. Noting these circumstances occurring

in many TTEC communities, my research suggests that participants' political history and

position as users of the environment- may cause barriers against AT stewardship.

Consequently, I argue that while some TTEC participants expressed conservational

based perspectives, a majority of TTEC participants have not overcome the before-

mentioned local circumstances and have yet to acquire AT stewardship. Consequently,

my expectations for each hypothesis were not met.

According to Robins (1991), people define their communities based on distinct

pride and attachment to characteristics which they value within it. When asked to

describe their communities, during Phase III interviews, 82.1% of teachers and 97.6% of

students did not include the AT. TTEC teachers who did mention the AT also noted that

it was underutilized and undervalued by families throughout their communities. One

retired TTEC Teacher from North Carolina stated:

> Many folks do not even realize how close the AT is to our town. And like
> many, folks are somewhat afraid of the outdoors (bugs, snakes, bears!!).
> If it wasn't for the school hikes we lead the kids wouldn't realize the AT
> was there…We haven't broken through getting the parents out there. We
> also ran out of capacity- we had a goal to reach the homeschool
> population, but haven't been able to yet.

Teachers' further noted administrative hurdles in getting students hiking on the AT due

to school leadership devaluing the AT:

> We just went up against the current trend of technology- STEM math and
> English language arts. They are tested and measured subjects. The
> emphasis on everything else has been lost. The out cries are only a few of
> us. … In my subject areas I am being pushed out- because I am not a
> tested subject. I am also a free play advocate and we can't have them
> outside- it has to be technology based. It has to be something we can
> measure. (7th Grade Teacher, NC)

I have had some frustration, however, with lack of support from past administration or team members on my grade level that were not interested. It was sometimes difficult to be motivated. (3rd Grade Teacher, NC)

Tried to do a trail maintenance day and funding fell through- if we had different admin it would have worked. That was a bummer. .. We have tried, but things have happened to stop it. We are playing it safe this year, hopefully by next year we can do more. (6th-12 Grade Teacher, NH)

Moreover, trail partners expressed cultural, economic, and political circumstances pushing against AT inclusion in communities' valued assets. For example:

Going into the woods is not a normal part of their community lives. (Cultural barrier from GA Trail Partner

Both parents work to support the family. Not much money left for hiking. (Economic Challenge from NC Trail Partner)

There is a prejudice against the federal government and public lands concept, because some of the local land was seized long ago and because they believe they get less tax income. (Political Obstacles from a VA Trail Partner)

Figure 11: Students hiking in western VA; photo by Bonnie Harvey, April 2015

Perceptions of nature vary across TTEC communities, but the dominate narrative suggests local circumstances do not align with valuing the AT. This does not mean that TTEC communities do not value nature, but rather that they may value and experience it in different ways (i.e. they enjoy hunting in the local forest but not necessarily hiking the AT) (Forsyth, 2004).

Expanding further, students referenced 'nature' and the 'quietness' of rurality as the favorite parts of their communities. However, partially disproving hypothesis three,

no student included the AT in their definition of 'nature'. When asked to describe

nature, students referenced it being in their backyards, accessible, and outside. For

example:

> A place where people and nature can live in peace. (4th grade)
> A beautiful place where animals live and work. (4th grade)
> Outside, in the backyard. (4th grade)
> Nature is anything living that isn't artificially made. (9th grade)
> The outdoors, a place where animals roam and a location for recreational
> activities. (7th grade)

The AT is literally in some of their backyards; however, students found the trail less

accessible than 'nature' and often did not reference it when speaking of outdoor

activities. Also, TTEC students reportedly do not access the AT with their families or

friends- 66.1% of students never accessed the AT without TTEC teachers and 28.2%

hiked on it less than two times in their lives (this number is inclusive of hiking trips with

TTEC teachers). Pointedly, while hiking in a local state park, only 9% of 4th- grade

students had ever been there before even though it is only nine miles from their school

[Figure 11]. As one TTEC Alumni Teacher stated, "for those kids I had to word it

differently, if we don't preserve it there won't be anything to hunt or fish." If, as Lee

and Hancock suggest (2011), stewardship is the product of how individuals define the

environment, then these students do define nature as a very close to home. However,

since participants' definitions for nature are not inclusive of the AT, the data suggests

that this presence of environmental stewardship has not yet transferred to AT

stewardship.

The data also suggests that TTEC teachers value the AT, further backed by the fact that they enroll in the TTEC program to begin with; however, they appear to have not spread AT awareness in their communities. My research suggests that hypotheses one and two, predicting teacher and trail partner stewardship visible through their active recruitment of new AT volunteers, has yet to occur. Phase II surveys of 2015 TTEC teachers (N=39) suggest that TTEC alumni teachers and trail partners have yet to make a large impact on regional recruitment. When asked how they heard about TTEC, 2015 TTEC teachers reported a wide range of enlistment measures which pulled them into the program, for example: trail clubs (n=2), students (n=2), colleagues (n=5), and social media (n=5) [Table 5]. The most significant recruitment method, successfully pulling in 25.7% of the 2015 TTEC cohort, were ATC emails sent to school administrators. Thus, while some TTEC teachers and trail partners did recruit new TTEC participants, a majority have yet to do so. This would suggest that TTEC teachers and trail partners have not acquired stewardship, according to TTEC's Theory of Change model, since they

Table 5: New TTEC Teacher Responses- 2015	
How did you hear about TTEC?	**Number of participant responses**
Email forwarded from the ATC	10
TTEC alumni	4
Colleague	5
Students	2
Local Institutions (Mary Baldwin College)	1
Organizations tied to TTEC	2
Trail club	2
TTEC Alumni / Trail Club member	3
Social media or news	5
No Response	4
Total	**38**

are not actively pulling in new people to the TTEC program.

Additionally, not only is large scale recruitment not happening, but TTEC alumni teachers are not automatically continuing with the TTEC curriculum themselves. According to the 2015 TTEC alumni database, which I updated as a deliverable to the ATC, 41.1 % of TTEC alumni have an unknown status [Figure 12]. Unknown statuses (n=130), referenced here, were teachers unreachable through phone or email to clarify if they were still using TTEC curriculum. According to further research by TTEC staff, 50% of these teachers moved schools, 37.7 % were teaching at the same school but possibly had new contact info, and 10% had undeliverable emails. These numbers do not question TTEC's popularity amongst teachers as alumni spoke very positively about the program. If Individuals express stewardship when they actively try to make amends for human caused environmental degradation (Lee & Hancock, 2011), and TTEC's Theory of Change model calls for TTEC teachers to remain engaged in TTEC curriculum while actively mentoring new TTEC teachers, then the data suggests that TTEC teachers have not acquired AT stewardship.

Figure 12: TTEC Teacher Alumni Status, n= 300

TTEC Teacher Alumni Status in 2015; created by Katheryn Herndon, 2015

Further suggesting a lack of AT stewardships, TTEC teachers and students did not express interest in maintaining the AT over large tracts of land or for long periods of time. Detailed textual analysis of focus groups and interviews show that almost all teacher participants spoke on a very short temporal scale (within 1-2 years) both into the past and future. Those who did speak outside of this frame were with regards to deep kinship connections. Long-term resident teachers spoke of having "very deep roots" and being a "local local, born and raised here." They recalled the familial ties to land and reported oral histories in very nostalgic terms. Notably, they do connect nature to these histories, as Escobar (1999) argues history always includes nature, but nature remembered here is almost strictly within the human contexts rather than in an untouched, pristine state. Thus, much like the students, teachers do appear to have a level of ecological stewardship rooted in their multi-generational ties to the land, but ecological stewardship appears to have not yet transferred to AT stewardship.

TTEC communities also appear to not align with the ATC ecotourism perspective that free-time should be spent doing active, physical outdoor recreation (Fletcher, 2014). A majority of TTEC families do not include hiking in their daily lives, only 7.3% of interviewed students hiked more than four times with their families, and 61.3% never hiked with their families at all. The challenge here is not that students do not like outdoor activities because 98.4% of students interviewed like being in nature (the two that did not like nature have outdoor allergies). They cited enjoying everything it has to offer, and had responses inclusive of both invasive recreation (hunting, fishing, and

motor biking) and conservation-based activities (viewing wildlife and hiking). TTEC

teachers, cited in the following quotes, also note hiking in not included in their

communities' daily lives:

> We went hiking, but it's not enough- it's not enough to make the kind of change that TTEC and the AT would like to. (4th Grade Teacher, NC)

> It amazes me how many people don't know where things are. Like Saddle Back, they've skied it, but never hiked it. (Special Education Teacher, ME)

> Only a small number had ever been on the AT even though it's at our back door. Only 6 out of 60 had been on the AT from the home economics trip. (Retired Teacher, VA)

> Our kids may not say they go out for a hike, but they will go into the back woods behind their homes and explore, build forts, and play. (6th Grade Teacher, NH)

Teachers would like to see their communities hike more, which shows a partial

agreeance with hypothesis one, suggesting teacher acquisition of stewardship expressed

through spreading AT awareness, but they have not yet fostered a widespread

community change towards hiking. Still further, many of the TTEC students are only in a

TTEC classroom for one year, suggesting that maybe the teachers just do not have the

students long enough to create an AT-use culture. Fletcher (2014) cited that cultural

identity can be a barrier to receiving messaging in environmental education. Thus, even

though TTEC teachers encourage local hiking, TTEC students reside in a culture which

does not predominantly identify with physical outdoor recreation causing barriers to AT

stewardship acquisition.

Not only is hiking not a part of their daily lives, TTEC participants' communities

do not appear to use the AT during vacation time either. Fletcher (2010:177) notes that

ecotourism could be the tool for incentivizing ecological conservation since it brings

tourism money to the region. However, returning to the tourist gaze, there is a

dichotomy between the everyday and the adventure of being outside of the known

which hinders local people from being tourists in their own region (Urry, 1992). A new

2015 TTEC teacher lives over 8 hours from the AT on the Atlantic Ocean, and her

perspective provides a rich example of this tourist viewpoint. She stated, "your

communities come to my backyard [the beach] to

vacation and experience nature." When families in

the mountains seek to experience nature, they want

something different from what is outside their

backdoor. For example, the Virginia Creeper Trail is

Figure 13: Grayson Highlands, VA; photo by Bonnie Harvey, June 2015

a 14 mile downhill bike path, which families can

coast down with minimal physical exertion. I visited

it on a warm summer day and the only local people I met were the families working in

area businesses. Considering the perspective that vacationing should be outside the

ordinary, then maybe the Virginia Creeper Trail or Appalachian Trail are too close to

home to be considered vacationing (Urry, 1992; Fletcher, 2010). Trail partners backed

this reasoning as they shared, through informal conversations, that a majority of their

clients are families from outside the immediate area. All the while, outsiders come to

the region and spend upwards of $124 per night to visit nature along the AT (Trail

Towns, 2014). One park volunteer at Grayson Highlands, a long-term resident himself,

spoke at length about meeting people from all over the world, but wished he could see

more local people in the campgrounds. Grayson Highlands, which the AT passes

through, tries to pull in local people by having 'residents' pay a percentage of the 'non-

resident' camping fee. The AT does have ecotourism potential which would suggest that

the natural resources have value to some populations in situ; however, the data

suggests that it is not yet realized by a majority of TTEC participants' communities.

TTEC participant communities do have some interactions with the AT and non-

local hikers. Some communities embrace the trail as an economic driver and welcome

hikers to their quaint towns. While hiking on Max Patch in North

Carolina, I came upon a sign for *'trail magic'*- defined by the

hiking community as an unexpected act of kindness experienced

while on the trail [Figure 14]. This particular sign meant that in a

half mile locals with beer and BBQ welcomed hikers with

hospitality. During my research, people often referenced 'trail

magic' in both positive and negative ways. One TTEC teacher

Figure 14: Trail Magic at Max Patch, NC; photo by Bonnie Harvey, April 2015

talked about distributing honey-buns through a wooden box he

constructed near the trail. While this may appear like positive community-hiker

interactions, the ATC asks communities to "not feed the wildlife" as it often causes a

larger footprint on the area with people going off trail and trash left behind. In the case

of the honey-bun distribution, the TTEC alumnus was asked to stop in fear that actual

wildlife, instead of people, might find the treats. In another case, recounting her own

hiking tales, one ATC staff talked about how communities along the trail would

sometimes supply a free hot shower or allow her to camp in their backyard for a night.

The ATC does encourage 'trail magic' such as this, where local communities and hikers

engage on a very personal level. However, the ATC does ask communities to following

their conservation-based ideals, and ask that 'trail magic' is shared with the LNT

principals followed (ATC, 2014)

Communities along the AT could potentially adopt a community identity

inclusive of the AT. According to one TTEC teacher, living where 60 % of the area is

public land, people are starting to embrace ecotourism, "the town has not fully realized

the outdoor potential, but is starting to recognize the tourism possibilities." Some TTEC

participants did see the AT as a source of income, and while they did not always agree

with the lifestyles of the "hippie hikers"- as one student described them, they

appreciated that the AT could facilitate economic growth. Thus, it is possible to foster

AT stewardship in an integrated AT-community definition as there are notably many

hybrid natures possible (Escobar, 2014: 2). Nevertheless, my research's data suggests

that this has yet to occur in a majority of TTEC participants' communities, and there are

still many political, economic, and ecological preconceptions which the ATC has yet to

overcome. As of the time of this paper, TTEC participants do not align the AT within

their definitions for nature or community, they are not actively staying engaged in TTEC

curriculum while recruiting new TTEC teachers, and their communities are not engaging in hiking or public land use during their daily lives or vacation time.

<u>Socio-Economic Transition</u>

How do you make nature accessible to low income people? – TTEC Teacher

While Appalachia contains varying political, economic, and ecological contexts, according to my research, it shares the commonality of rapidly changing socio-economic and ecological conditions. These changing contexts, in turn, create alterations in TTEC participants' human-environment relationships and impacting land valuations and stewardship levels. During Phase IV, I grouped 2015 TTEC teachers' surveys as well as TTEC trail partners' and TTEC teachers' semi-structured interview responses (N=60) into four socio-economic regions. These four categories are not exhaustive, two teachers were from cities and one teacher came from a community on the Atlantic Ocean. Nor are they exclusionary; there are rural communities which are both ecologically progressive and experiencing poverty. Noting that there are no definitive community identities, I created the following categories based on community descriptions from all three participant groups and common themes that emerged throughout each of their explanations:

1. <u>Transitional Communities:</u> Throughout the region, 28.3 % of the sample communities were transitional. Their income base was lower to upper income with an extreme income disparity experienced between the two. Within this context there was a split between newcomers (retirees, second home owners and exurban populations) and long-term residents. Newcomers ascribed to the conservational model of recreation and land use as they hiked, camped, kayaked, and often accessed public lands. Long-term residents experienced nature through more immersed uses- hunting, motor biking, fishing, and

farming. Tourism was also growing in these areas altering local shops and raising local land values while changing land use from resources extractive industries to ecotourism based economies.

2. Rural Communities: 40.0 % of the sample considers their communities was rural with long-term residents, low socio-economics, farming, and students on free or reduced lunch. US census data from 2009-2013 shows that young adults (ages 18-35) living in southern Appalachia are on average 4.3% less employed and 3.4% less educated than the rest of the United States (US Census, 2013). In these areas the outdoors were used for hunting, fishing, all-terrain vehicles, and agriculture. Parents did not engage in outside recreation due to work schedules and/or are not fit enough to do so. Students were also still connected to the land as they lived in nature and had multi-generational ties to the land.

3. Suburban Communities: 26.6 % of the samples were transient communities where families lived in a rural setting but commuted to local towns for work. These communities were characterized with a fluctuating family demographic due to movement in and out of the area as jobs changed and urbanity expanded. The communities were also split between middle-class families who worked outside of the community and poorer families who worked locally in agriculture or service industry jobs (half are farmers, half are commuters). There was little use of outdoor recreation from both groups (other than organized sports teams), but both valued the land (farmers value the economics of the land and commuters value the aesthetics).

4. Conservational Communities: A small portion, 5% of the sample were conservation based communities who used nature without changing it (hiking, camping). Students had parents who were engaged with hiking and supported their TTEC teachers through attending hikes or volunteering in the classroom. These communities were also predominantly tourism based. Locals as well as tourists engaged in non-invasive outdoor recreation (skiing, hiking, and camping). They were also reportedly middle-class to upper-class economically and contained less people who root themselves to the area for multiple generations.

The common thread throughout the first three community categories is change.

Transitional communities are no longer rural nor do they consider themselves urban,

rural communities have changing and diversifying economies as they struggle with

poverty, and suburban communities are growing and altering in population demographics. Through the application of political ecology, my research illuminates these circumstances and expands stewardship beyond it being about making a simple choice to its reality as a complex ideology tied to community. Thus, further challenging all three hypotheses, I argue that Appalachia is in a time of critical socio-economic transition impacting the relationship participants have with land and AT stewardship.

Teachers and trail-partners cited the in-migration of exurban and amenity migration populations as changing local land use. Kirk et al. (2012) defines *exurbaniation* as the movement of people into three destinations: low density towns which are within the commuter shed of larger towns, metropolitan people using second homes to access recreational areas, or non-metropolitan areas which still have metropolitan level economies with rural social relations. Burke et al. (2015: 185) defines *amenity migration* as the movement of people, second homeowners, and retirees to rural areas for accessing the area's natural beauty, recreation, and lifestyle. When asked to describe their communities several TTEC teachers noted their communities as transitioning due to these two types of migration patterns. According to a teacher from Virginia, her district adds a new K-12 school annually. Another retired TTEC teacher from northern Georgia said:

> It's getting a lot of new people. There are a number of people who have a
> sense of community in where they are, but there are also people who
> moved in who I think care very much about the community they moved
> to and then there are those who just don't care.

A K-12 TTC teacher from western North Carolina spoke about newcomers in her area

coming directly from the outdoor community:

> The children I teach are from the older community- they are what you
> call the 'from heres'… but this is a trail town, there are a lot of 'not from
> heres' that actually found out about [name of town] by hiking the trail…
> they call them 'cosmic opossums'- they came from somewhere else and
> they're hanging around.

A middle school teacher, this time in New Hampshire, mentioned newcomers arriving as

transients and the little impact that makes on the local economy:

> A rural mountain community, socially and economically disadvantaged; a
> fair mix of long-term residents and newcomers. We have a fairly large
> transient population due to the employment opportunities at resort
> hotels and ski areas.

If, as Escobar (1999) suggests, nature is socially produced, then the changing of a

society's population would elicit a change in the local perceptions of nature. These TTEC

participant responses show that while the region is not homogenous, there is a common

trend of changing populations across TTEC communities. Thus, the ability of TTEC

participants to acquire AT stewardship is interwoven is the demographic changes

occurring throughout the region and sequential altering of how the communities define

nature.

Moreover, newcomers reportedly do value the land differently than long-term

residents. Focus group discussions expressed this perspective as a majority of

participants referenced newcomers carrying new perspectives on nature. One

participant spoke at length about how long-term locals make their own trails on private

lands and regularly venture outside to chop wood or hunt. However, the "not from

heres", as this Georgian TTEC teacher called newcomers, move into the mountains and

seek out the National Parks to access nature:

> I'm one of the local locals. So there are two sectors within the
> community. One is the old time local who will not talk to you if you
> say [name of the town] wrong… Then there's the newer people
> moving in and into the mountains around as well. There's the newer
> community that aren't locals, they haven't been there for a long
> time and they're looking for resources [public lands].

Based on TTEC participant responses, newcomers generally believe in a conversation-

based and recreation-use perspective of nature. TTEC teachers citied this perspective

through the following human-environment relationships observed in newcomers:

> Outdoor recreation and tourism attract many newcomers to the area, including
> wealthy retirees. (Librarian, NC)

> Many people move out here to experience more of nature. (Middle School
> Teacher, VA)

> A small population takes advantage of the outdoor recreation but most of it
> comes from tourists. A lot of our land is used for employment; such as logging or
> facilitating adventures for tourists (Middle School Teacher, NH)

These land-uses also appear to be linked to the higher economic statuses of newcomers

compared to long-term residents who are typically situated within a lower economic

class. Of the 9% of 4th-grade students who had been hiking before TTEC in Hungry

Mother State Park, all of them had parents making at least a middle-class income.

According to TTEC teachers, income can be a barrier which keeps parents from hiking.

One TTEC teacher from Maine pointed out that:

The parents of a lot of our students don't have much time, they're 'bringing home the bacon'.

Many teachers also expressed that parental perceptions of hiking play a large role in students' perceptions of hiking. As one New Hampshire Elementary teachers said:

They value what their parents' value.

Trail partners from North Carolina expressed the same point:

I am not sure that the youth here have a different value than that of their parents.

Opposite to newcomers, long-term residents, particularly those living closer to the poverty line, appear to value the land due to economic practices: farming, hunting, fishing, and natural-resource extraction (Crumley et al., 2001). According to textual analysis of TTEC teachers' environmental values [Table 4], nature is an economic resource, experiential and homey. Only two teachers' spoke of protecting nature and only one teacher mentioned a 'pristine wilderness'. Teachers know of their roots in land use and spoke very proudly of ancestral ties, such as this Florida native:

I'm a southerner- I grew up in the south… and my grand-parents are from there- they had a hunting camp a lot of making their own sausage and that kind of thing. I never got to know them, but I know the stories and I feel very connected to them. (Special Education Teacher, GA)

Again, comments such as this are common across the region with many participants noting that not only are their communities changing in demographics, but they are also experiencing cultural shifts resulting from newcomers.

My research shows that urban and amenity migration patterns create an even larger encroachment on the rural areas. While the summer vacation community and

exurban populations may be more attentive to the preservation of the environment than 'locals', they also add a whole new level of complexity. City dwellers, having spent a lifetime earning middle to upper class salaries, move into rural areas and infuse money into the area making the modest local income unable to compete with rising prices. In focus group discussions, one teacher from North Carolina summarized her community's financial problems with newcomers:

> The biggest change in ____ County is we have a lot of older people from either Florida or up North and they are pushing all of the young people out because they're jacking up the prices of everything. (Middle School Teacher, NC)

The next piece of the socio-economic puzzle is the outmigration of rural youth from TTEC communities. *Focus,* a West Virginia development magazine, reports that 3% of youth aged 18-34 (totaling 11,800 people) and 12.8% of 35-44 year olds out-migrated from West Virginia between 2000-2010 (Keith, 2014). These statistics on West Virginia youth out-migration provides a snapshot of socio-economic circumstances in many TTEC communities. As these youth leave the region, either by choice or by circumstance, those multigenerational ties to the land are severed. The following quote, referenced twice during my research, speaks to this deep connection with place which can be broken as people leave the area, but still roots them within their Appalachian pasts:

> And thus it is with those nurtured in Appalachia- they leave, but they look back, remembering pleasant things. The land has claimed them, and its ties will not be severed (Brooks, 1965: 331)

As shown by this West Virginia native, people may have to leave the region, but many participants spoke about how those ties are never completely lost. Thus, even those

students who out-migrate could possibly still adopt stewardship and return later in life to maintain and support Appalachia and the AT.

Few economic opportunities in Appalachia push youth to look elsewhere for higher paying jobs. When asked what their parents do for a living, students reported that 21% of mothers and 44.4% of fathers worked in service industry jobs. The largest employed places were schools (16 parents were teachers), hospitals (14 parents worked in health care), and law enforcement (7 parents were police officers), and one-fourth of the students reported that one or both of their parents did not work at all. At the same time, almost all of the students reported wanting a job on pay scales higher than what their parents currently make. For example, TTEC students said they wanted to be doctors, athletes, veterinarians, and paleontologists. Students who said they wanted local jobs, still choose careers above the pay scales above their parents (e.g. a student whose parent mows lawns wanted to be a 'teacher at the elementary school'). Only two students reported that they want to do what their parents do for a career (teacher and seamstress). This shows that TTEC students aim higher than their current economic level. While many people do not end up achieving the career which they want in their childhood, based on the current labor market and rising property values, the students interviewed likely could not stay in their hometown and achieve their dream jobs.

Lastly, looking deeper into the economic consequences of Appalachia's transition, between 1990 and 2000 poverty in Appalachia dropped from 15.4% to 13.6%

which is just 1% away from the national average (Joshi and Gebremedhim, 2012).

However, this does not mean that locals are wealthier. Within the same timeframe the

income inequality gap rose from 13.2% to 13.7% as blue-collar jobs decreased and

poverty remained (Joshi and Gebremedhim, 2012). There are some locals who reap

benefits from amenity migrations, those who open boutiques and eateries that cater to

the new population, but other locals stand to lose a lot- especially those who do not

have family land holdings (Burke et al., 2015: 193). Pulling from my research data, these

migrations also create seasonal economic fluctuations and new housing patterns, as one

TTEC Alumni noted in Western North Carolina:

> Our residents double in the summer as folks from Florida spend summer
> here… Folks who are looking for homes like to be back by the national
> forest as it assures no building there.

Another TTEC alumnus, from New Hampshire, referenced tourism in the local

economy:

> About 55 percent of the students are on free and reduced lunches. The
> main form of employment now is tourism. Used to be mills but they are
> all shut down- that is why the socio-economics is so low.

These examples show that migration patterns create shifts in the local ecology and

economy. If observed from an etic (outside) perspective, one might perceive

development occurring throughout the region as new buildings and professionals arrive.

However, the data here recognizes that while many TTEC participants' communities

experienced economic growth, they do not yet have an equal share of the resources.

This is a hurdle which may not be surmountable through TTEC's programmatic efforts;

however, it is still one which possibly created barriers to steward acquisition at the time of my research and could potentially continue to do so in the future as well.

Socio-economic conditions can make nature a luxury to some and a livelihood to others. In this case, many TTEC participants' identity with a nature which is their 'livelihood'- interwoven in their daily lives both culturally and economically. Newcomers arriving to the region, however, likely position nature within the 'luxury' category as they choose to move into rural areas and pay premium rates to live on the fringes of wilderness. Thus, the changing socio-economics of the region impact local human-environment relationships as natural-resource revenues are lost, population demographics change with newcomers arriving and long-term residents out-migrating, and TTEC participants attempt to refine their association with nature according to new circumstances. Thus, the data presented here suggests a context in which socio-economic change could potentially both impact regional identification with land-use practices and create barriers to AT stewardship acquisition (Robbins, 2002).

<u>Ecocentric versus Anthrocentic Language</u>

You don't get to choose nature, it's just there. –TTEC Student

Escobar (1992) questions the term 'nature' as it is both socially construct and tied to epistemological perspectives. Aligning with an ecocentric (conservationist) construct of nature, the ATC promotes the removal of human influence from wilderness. Conversely, my data suggests that TTEC participants predominately align with the anthrocentric model designating human activities as part and parcel of the environment

(Haluza-Delay, 2013). Within this perspective the term for environment not only changes, but also extends from 'wilderness' preservation to space inclusive of people and their equally important political, economic, and ecological sustainability (Poole and Hudgins, 2013). Utilizing this lens for analysis, my data challenges hypotheses one and three predicting teacher and student stewardship acquisition. I do so through making the argument that the ATC does not effectively talk about the environment in a way in which both 'backyard' and 'wilderness' carry the same value and, by result, have yet to create AT stewardship in TTEC teachers and students.

Neither proving nor disproving hypothesis two, trail partners align with both perspectives. Trail partners expressed their ecocentric and anthrocentric perspectives as they mentioned long-term climate change and large scale global conservation while still noting the need for addressing human potential and local economic conditions (Burke et al., 2015; Fletcher 2014). One TTEC trail partner, recently completing a section hike of the AT, spoke of how it made him a "citizen of the Appalachians" and considers the entire Trail his home. However, given that trail partners served in conservationist roles prior to engaging with TTEC classrooms their stewardship and ecological perspective cannot solely be equated to TTEC. This does, on the other hand, make them a source for bridging the gap between anthrocentric and ecocentric models as they are community members who bridge the gap both conservation and human development.

Additionally, even though the ATC holds an ecocentric perspective, it is difficult to divorce people completely from nature. While hiking with students in Virginia, I did

not see a single student take a picture of the vista without a person in the foreground.

Within this viewpoint, nature does no stand as a form of art or visual refreshment which

should remain outside of the realm of people. Instead, it is simply the local mountain

which people can conquer. Case in point, McAfee's Knob, a well-known vista point in

Virginia, is the most photographed place on the AT. Every photograph taken on this

seemingly precarious ledge also has a human overlooking over the landscape [Figure

14]. The ATC uses this image on their license plate, thousands of hikers take pictures

from this viewpoint annually, and it was most recently featured in A Walk in the Woods

(Bill Bryson's cinematic portrayal of hiking the AT) [Figure 15]. An important point to

make is that in all of those photos a person stands on the ledge. Escobar (1999:2)

further argues the point by saying that there is actually no nature outside of people.

Thus, while there is a desire to protect nature from people, participant observations

suggests that there are also strong aspirations for people to overcome nature and stand

Figure 15: McAfee's Knob, Virginia

Sourced from ATC's AppalachianTrail.org, Photo by George Huntzicker, April 2015

on the ledge or hike the mountain.

Next, I explored anthrocentric versus ecocentric perspectives through textual analysis of TTEC participants' word choice. Ecocentric groups use terms such as 'wilderness' and 'nature' while anthrocentric conversations place the environment within the immediate 'backyard' or 'outside' (Kopnina, 2011). Focus groups discussions demonstrate the exceptionally anthrocentric language which participants used [Table 6]. To begin with, the most common word used was "people" – employed 58 times, and "community" came in a close second with 55 occurrences. Participants spoke, for the most part, in positive reference to people in their communities and were nostalgic of ancestral livelihoods. Two trail partners did speak of their childhood communities being "paved over" and subsequently the loss of "wilderness". However, both of these conversations also intertwined in kindship relationships as they reportedly remain in their hometowns due to ailing parents and not particularly for battling against 'wilderness' loss.

Further looking at word choice in conversations around the environment, when speaking of land-use more TTEC participants spoke of using it for food and extractive practices rather than recreation. In focus group discussion and interviews, TTEC teachers and trail partners spoke of farms being subdivided and depreciating in economic vitality (mentioned 25 times) more than they referenced the loss of forested land (1). Still further, the word 'environment' had four occurrences, 'nature' was mentioned ten times, and 'outside' was spoken 21 times. Putting these terms in context, participants

Table 6: Focus Group word occurrences and their context in the transcript		
Word	**Occurrences**	**Context**
Most Frequent Words		
People	58	The movement of people (in and out of the region), the ages of people (young and older), the economics (poor, rich), and collective action of people around their communities (i.e. how they interact with land).
Community	50	Type of community (business, tourist), local community, collective consciousness of the community (farming, nature oriented, unaware of the AT), and type of people who reside within it.
Words Around Land Use		
Farm/ Farmers	25	A lot of discussion on farms and farmland being lost to development. Types of farms include: apple, Christmas trees, and urban farm.
Hunt/ Fish	18	A lot of reference to community members valuing hunting and fishing.
Appalachian Trail	15	Spoken of as a place where participants have been or want to spend more time. Some reference was also to its presence in a community and being underutilized.
Hike	15	Teachers spoke of enjoying hiking and camping, but also about how people in their communities do not hike.
Words in reference to "Nature"		
Outside	21	Participants spoke about being outside (hiking, chopping wood, hunting/fishing, and gardening), the desire to get kids outside more, and the community being outside and tied to the land.
Nature	10	Nature was referenced as a place people should go to and access more regularly, and also the absence of nature in cities (i.e. Atlanta).
Environment	4	Referenced in relation to environmental education and fishing environments. One reference to environmental preservation.
Wilderness	4	Spoken in reference to the wilderness on the West Coast, also referenced in that kids in rural areas do no access the 'wilderness'
Notable Words with Low Occurrences: trash (0), climate change (0), protect (3), clean (0), plant (2), animal (1), tree (0), forest (1), steward (1), service (2), volunteer (3)		

spoke of being 'outside' and regularly accessing 'nature' with both terms used in very

close to home and familiar terms. The 'environment' and 'wildernesses', however, were

referenced as being outside of their immediate community, tied within scientific

definitions and inaccessible. This suggests a construct of nature close to home and not

removed from people. Lastly, words dealing with wilderness stewardship and

maintenance had very low occurrences overall. For examples, animal (n=2), plant (n=2),

tree (n=0), protect (n= 3), and steward (n=1) were rarely referenced in 25 pages of focus

group transcripts. Thus, people are very much included in TTEC participants

interpretations of nature as they identify with an immersed human- environment

landscape (Kopnina, 2011).

TTEC teachers and students, particularly in low socio-economic areas, largely

focused in anthrocentric concerns for their communities rather than ecocentric matters.

First, when asked to define 'volunteering' all of the students interviewed spoke in terms

of helping people. TTEC students provided the following responses when asked to

describe volunteering and why people should do it:

> Someone who helps people. (4th grade)
> To help someone that's not able to do something. (7th grade)
> To better the community they live in. (9th grade)
> Someone who does something for someone without getting paid. (7th grade)

Even the 11.2 % of students who did speak about environmental actions talked about

picking up trash to improve local aesthetics instead of referencing ecological benefits. I

later spoke with the TTECAC about this point and one teacher said, "Of course they talked about trash. The whole time we're outside we tell them to pick up their trash." Thus, some students understand that trash is not okay, but they appear to have not made the connection between littering and sustainable conservation of the AT. Messaging, in this case- the drive towards picking up trash so that the trail looks pretty, pushes students towards interpreting trash as a human problem rather than an environmental concern (Forsyth, 2004). Noting this point, if the central objective of making TTEC participants feel concern for local public lands' ecology did not occur, then the ecologically based AT stewardship goal may be non-existent at the time of my research (Kopnina, 2011).

Further bolstering this point of volunteerism challenges, I visited western North Carolina four times in the course of my research and found the local AT-focused visitor center closed 50% of those times, even though it was the height of hiker season. The second time I found it closed there was a note on the door pleading for volunteers to staff the center because "tourism brings in much needed tax dollars" [Figure 16]. Admittedly, the area has a very small

Figure 16: Volunteer request sign at a closed visitor center along the AT; photo by Bonnie Harvey, April 2015

population, a majority of the teachers commute in from neighboring towns, but this note would suggest that there is also a disconnect between adults and the importance
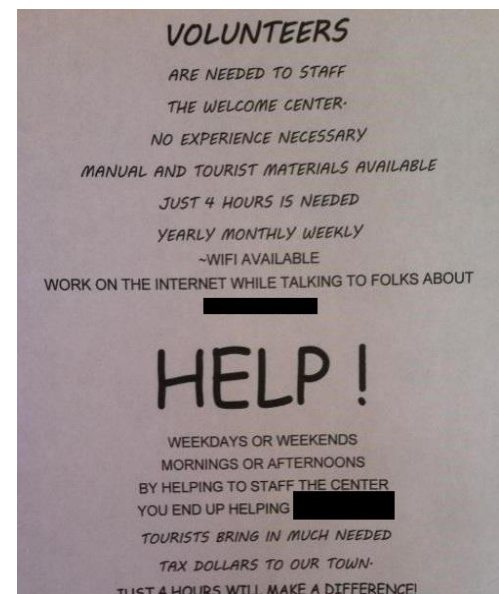
of volunteering to support public lands. In fact, the one volunteer I met was not from the small town but rather commutes to help because her husband is Cherokee and she wants to share the region's rich cultural heritage. Research illustrates that people volunteer when they feel a strong moral obligation and perceive personal benefit in giving their time (Smith, 2009; Freeman, 1997; Pearce,1993). This example suggests that, counter to all three hypotheses, TTEC participants still have work to do to pull communities into public land stewardship and understanding the local value of ecotourism.

Next, further exploring intentionality in preserving the AT and public lands, TTEC teachers also spoke very little about their role in protecting the environment. In fact, only one teacher spoke of humans as disturbers in the environment and two spoke of humans as protectors. TTEC students perceive themselves as needing protected from nature, as 'nature' reportedly holds the power in their human-environment relationship. Gragson and Bolsted (2014) suggest the perception that nature holds the power leads people to believe they do not have agency or a need to protect the environment. Several students expressed concern for the dangers of nature (i.e. poison oak, bugs, scavengers, weather- tornados and hurricanes, winter, spiders, allergies, bears, ticks). Two 7th grade TTEC students show how nature is perceived as holding power:

> Being attacked by animals #why can't we be friends.
>
> I dislike that nature can cause destruction, also how it can hurt people.

The data shows TTEC teachers and students generally focus personal interest and

action more on human needs than long term environmental sustainability.

Lastly, there are no absolutes as some TTEC participants were ecocentric leaning,

and the ATC does aspire to help human communities. ATC

Communities, a program separate from TTEC but interlinked

at times (i.e. some TTEC teachers are knowingly recruited

from AT Communities), seeks to support local populations in

capitalizing off of the AT. To date there are 36 designated AT

Communities, and according to the ATC the long-term

benefits of this title are similar to that of TTEC: increased

community environmental stewardship, increased sense of

place and cultural sustainability, and trail-friendly promotion through ATC-assisted

marketing techniques (ATC, 2015). Still further, TTEC plans to create a Youth Advisory

Board for 2016 showing an organizational effort of becoming even more rooted in TTEC

communities. At the time of my research, however, studies have yet to show if AT

Communities' long-term goals are met and the Youth Advisory Council remains in a

planning stage with recruitment happening at the end of 2015.

Both the anthrocentric and ecocentric perspectives stand within their own

subjectivity and both cannot be completely realized. It is a paradoxical goal to think that

both humans and the environment can be completely preserved and developed.

Therein lies the challenge, as the ATC ascribes to LNT Principals while still wanting to

Figure 17: AT Community
Designation Sign;
Photo by Bonnie Harvey, 2015

support community development along the AT. There is also no "one size fits all'

method and no way to include every dynamic which impacts community-environment

interactions. Likewise, nature's imposed identities presented here are admittedly a sub-

set of the overall Appalachian community context suggesting that there are possibly

many more perspectives occurring throughout the region. However, based on my

research, I conclude that TTEC participants possessed the dominate narrative of an

anthrocentric nature while the ATC expressed an ecocentric model for change, and that

these conflicting perspectives created obstacles to AT stewardship acquisition in TTEC

participants. I also note that the ATC appears to have the ability to expand their

language to include anthrocentric goals such as preserving land so that there is wildlife

to hunt, supporting the opening of more ecotourism businesses along the AT, and

addressing the socio-economic challenges occurring throughout the region.

Conclusions

They are enlightened and excited to find something vast and new. - TTEC Trail Partner

In this paper I presented a place-based service learning program evaluation, analyzed my research through the lens of political ecology, and began to unpack the complexities of nature's imposed identities (Escobar, 1999). My research recognized the influence of diverse constructions on environmental stewardship and that nature is not an invariant reality but rather alters in a case-by-case basis where political, economic, and ecological contexts alter individual perceptions and interactions with nature. In the case of TTEC, my research suggests that TTEC participants face cultural barriers against accessing public lands for outdoor recreation, TTEC participants' communities are experiencing socio-economic transitions complicating land-use practices, and ATC employs an ecocentric model for change while TTEC participants operate within an anthrocentric perspective.

Based on my research, I also conclude that teacher's value TTEC as an educator training resource, youth enjoy the chance to get outside, and trail partners perceive a local benefit from TTEC implementation. TTEC teachers also appear to create curriculum which meets the rigor of state standards while getting kids outside into their local communities or onto the AT. According to the ATC, TTEC's curriculum is a critical component to engendering AT stewardship, but my research suggests there remains to be larger political, economic, and ecological challenges needing addressed. Thus, while both ATC staff and TTEC communities appear to want to create sustainable human

development and ecological preservation- the solution to doing so remains highly complex.

Even when an organization enters communities with the best of intentions, there can still be circumstances which create barriers against intended results. Aiming to impact more wide-spread stewardship acquisition and TTEC program development, I will return my Master's Thesis to all research participants, ATC staff, and the TTEC Advisory Council. I also intend to share aggregated and de-identified research data with individuals and organizations, encountered during my research, working in various community development systems nationally, educators implementing place-based service-learning, and communities throughout Appalachia navigating the challenges of these changing human-environment relationships

Evaluation and growth are important to any organization, no matter their size or mission. My application of theory shows that new lessons can be both learned and applied to human-environment relationships through opening conversations around perceptions of nature. It also demonstrates the potential of anthropology and other academic discourses servings as tools for supporting community development, environmental sustainability, and organizational growth across many fields and disciplines. Noting this, I also hope to contribute to the field of applied anthropology and current academic research surrounding political ecology, stewardship, community development, and place-based service learning. I aim to do this through presenting this paper back to colleagues at Portland State University and making my research available

through Portland State University's website so future researchers may build off of what I learned.

<u>Organizational Implications and Future Recommendations:</u>

When you can stand in front of a piece of art and take a step back and look at the colors and textures and scale. It's so important to be able to walk around your sculpture. It's not just about teachers who hike. The place is about seeing first hand. - TTEC alumni teacher

I presented my research's raw data at TTEC's summer workshop in July 2015. Following my presentation, TTEC staff and the TTECAC debated programmatic changes which could create AT stewardship. That debate then carried over into that evening and found the group divided on whether the organization's mission should continue to focus on AT stewardship or if the goals should expand to aim for a broader definition of ecological stewardship. As TTEC leadership continues to have this debate they also address questions around the following: should teacher acceptance into the program have an AT proximity limitation, should they require classrooms to hike on the AT or will hiking on any trail meet their goal, how can teachers better report what is actually happening as they implement TTEC curriculum, and what is the capacity TTEC has for taking in new teachers and schools?

As I make critiques and recommendations I do so wanting to improve TTEC's program and provide new perspectives toward organizational development, lasting stewardship acquisitions, and more coalesced regional development. Lastly, I note that there are still many unanswered questions, like the ones presented above, and I encourage TTEC to continue employing academic research to their program

development and community work. Applied anthropology is a growing discipline as it allows for a richer analysis of communities through utilizing theories, methods, and ethnographic tools to help understand social problems. It is, however, just one field of study in an academic menagerie of sciences and methods which could help Appalachians study their identity and impact their future.

Concluding all of the above information, pulling on conversations had with research participants, and compiling observations made in the field- I present three main recommendations to the ATC. I speak more at length to these recommendations in the *Results Summary* [see Appendix H] and presented them at TTEC's 2015 Summer Institute, but summarize them here in connection to the analysis above. These three recommendations are also not exhaustive nor exclusionary.

- TTEC could focus more on place-based service learning:

  As discussed in the literature review, place-based service learning holds a great deal of potential in creating stewardship and active citizens in the community. However, through conversations and observation of the program this piece is highly under implemented. Currently, a majority of TTEC teachers limit themselves to TTEC trail partners instead of reaching out to parents, businesses, and everyday citizens who could also provide a wealth of support. A majority of TTEC teachers also do not appear to be applying place-based service learning at all. Thus, I suggest that TTEC work more directly with teachers to determine community leaders and then actively create systems to ensure these

community-based supporters are utilized and service learning does occur. Two

TTEC teachers nearing retirement reflected on this piece during Phase III

interviews:

I needed some help from some of the partner groups who could have been involved. As time has gone that's one of the things that I have felt more strongly about. –Retired TTEC Teacher

We need to be continually supported. Keep us in the back of your mind so that we (alumni) can continue to keep TTEC in the front of our minds. – TTEC Alumni Teacher

- <u>TTEC staff could acknowledge that Appalachia does not have a homogenous perspective on nature and expand their stewardship goals:</u>

Given that several communities in the Appalachian

region are in socio-economic transition, program staff

could discuss what this means for future stewardship

development of long-term locals, how newcomers can

best be utilized, and what the transition is likely to

mean for area youth. Stills further, through an

expansion of their stewardship definition and

community based efforts aiming more on social

Figure 18: Student after 1.9 miles up a local mountain in VA, Photo by Bonnie Harvey, 2015

sustainability programs; they could likely pull in more community members to

their ultimate goal of AT preservation. Since the organizational goal is to create

AT stewards, TTEC could first understand that the detachment from land in

today's youth is not completely within their control, nor can it be solved through

taking hikes a few times a year with a well-meaning teacher. Hiking does appear

to help with short term student development [photo right]; however, it is not creating a perceived long-term change:

Short-term. I've seen young people develop self-confidence after completing what was, for them, a difficult hike. – TTEC Trail Partner

- <u>TTEC could work on developing and possibly changing their ecologically based language when working with anthrocentric communities:</u>

The ATC has a strong AT Communities program and ATC staff does try and acknowledge human development potential when working with the AT. However, they will likely continue to have challenges in reaching more rural areas if they are not considerate of their ecocentric language being employed in anthrocentric communities. Better knowing the individual communities could help to alleviate some of 'nature' language barriers and allow TTEC teachers, TTECAC, and staff to impact a larger percent of the regional populations. Understanding these language barriers could also help with reaching more parents. According to many participants, parents are key in getting youth out hiking on a regular basis and creating more rooted AT stewardship since children "value what their parents value (TTEC Teacher)". This also feeds into a community-AT connection which has yet to be created as youth, and reportedly their parents, are anthrocentric and more likely to connect to the human community rather than the AT 'wilderness':

Most of the students felt more connected to their local community after our unit. Not so much the AT though. - TTEC Alumni Teacher

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Appendix A: Surveys

Surveys were collected at all four regional TTEC conferences (New England, Virginia, Mid-Atlantic, and Southern) on a voluntary bases and in order to record participation in the events for quantitative analysis. [Research Questions 1 and 2]

Name: _____ Personal E-Mail: _____ Phone: _____

(Information on gender, race, and ethnicity is optional. We ask about gender, race, and ethnicity because our federal partners include this information in their annual reports.)
Age: _____ Gender: _____ Ethnicity: _____

School: _____ Subject: _____ Grade: _____
School Address: _____
School Phone Number: _____ Your School E-Mail: _____

How did you hear about TTEC?: _____

What do you hope to achieve through becoming a TTEC teacher?:
_____
_____
_____
_____
_____
_____

Briefly describe your community: urban or rural, economics/main source of income, involvement in nature/ connection to land [economic, personal], long-term resident or new-comers, …
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Appendix B: Focus Groups

Focus groups were held at two of the four regional workshops (New England, Virginia, Mid-Atlantic, and Southern) with new TTEC Teachers, Alumni teachers, and trail partners attending the spring workshops. [Research Questions 1, 2, and 3]

Agenda
1. Explain who I am and the reason for the research (have copies available of the TTEC Theory of Change Model)
2. Ask permission to record the meeting, verbal consent, and option provided to not participate
3. Have everyone introduce themselves
4. Go over meeting ground rules
5. 60 minute session with the following questions

Community Demographics
1. Please describe your community (we will go around and everyone say their name and tell us about their community).
   - economics and demographics
   - main businesses
   - interactions with the land (nature, extractives, recreation)
   - long-term residents or recent immigrants
2. How do people in your communities use land today?
3. What responsibility does our communities have to the sustainability of the local environment?
4. Do your communities have a great interest in outdoor activities?

AT and Previous Understandings
5. What was your awareness/ involvement with the AT prior to this training?
6. What do you hope to learn about the AT through this workshop and subsequent time in TTEC?
7. Have you ever engage students with the A.T. or other trails (hiking, volunteering, education) and if so how often (monthly, quarterly, annually)?

Future Aspirations and Challenges
8. Considering the youth and community you work with, what percent do you predict becoming involved with the AT or local environment outside of your classroom as a result of implementing TTEC curriculum (either through volunteerism or recreational use)?
9. What do you see as the biggest barriers to getting local communities out to the AT (recreationally, economically, and ecologically, school or local political issues)?
10. Overall, would your students and communities be inclined to volunteer on the A.T. if given the opportunity?
11. Overall, how do you hope to impact your community by becoming a TTEC teacher?

Appendix C: Semi-Structured/Structured Interview- Alumni Teachers

Interviews were conducted over a month period with alumni TTEC teachers. Teachers were selected using convenience sampling and given the option of refraining from answering any question. (https://surveymonkey.com/TTECteacher)

Interviewee: _____ State: _____ Subject: _____ Grades: _____
Date: _____ Duration of Conversation: _____

1. How did you originally hear about the TTEC program?
2. Briefly describe the community your school is in.
3. How does your community interact with the local land and nature (i.e. recreational use, extraction industry, long-term land ownership, and farming)?
4. In your community do you perceive younger generations valuing the land differently than older generations? If so, is this connected to changes in how the land is used (i.e. mines closures, out migration, new land owners, agricultural shifts)?
5. How many students do you estimate that you have engaged to date since your involvement with TTEC? And over how many school years?
6. How often do you use outdoor classrooms as part of your curriculum? What space(s) do you use?
7. How much was/is the local community part of your curriculum?
8. Have you continued to be engage your students with the A.T. or other trails (hiking, volunteering, education) and how often (monthly, quarterly, annually)?
9. Considering how many youth you've educated through TTEC curriculum, what percent do you see as remaining involved with trail or environmental its stewardship, or outreach projects (either through volunteerism or recreational use)?
10. Overall, how would you describe the impact this program has in your community?
11. Overall, how would you describe the impact this program has on your teaching practice and your ability to reach educational goals with your students?

How much do you disagree or agree? For each of the following items, please answer one number that best matches your opinion about your service-learning project.	Strongly Disagree	Tend to Disagree	Tend to Agree	Strongly Agree	Not sure or N/A
Students work on real community needs and opportunities.	1	2	3	4	0
All students that participate in the service-learning continue to engage with the AT's preservation	1	2	3	4	0
I encourage others to actively engage in service with the AT.	1	2	3	4	0
Students feel ownership of the service-learning project.	1	2	3	4	0
Service-learning activities meet genuine needs in the community.	1	2	3	4	0
Trail partners value their role in supporting TTEC activities	1	2	3	4	0

Appendix D: Semi-Structured/Structured Interview- Students

Interviews were conducted over a month period with TTEC students. Students were selected using convenience sampling and given the option of refraining from answering any question. (https://surveymonkey.com/TTECstudent)

Interviewee: _____ State: _____ Subject: _____ Grades: _____
Date: _____ Duration of Conversation: _____

1. Lead in: How far do you live from the school/community, tell me about your community.
- What do your parents do for a career?
- What do you hope to do when you grow up?

2. Have you ever been on the Appalachian Trail? If so, how many times and with who?
- Did you know about the AT before this class?
- Have your friends or family ever spent time on the AT outside of school?
-

3. Have you helped out with a trail project? If so, describe what you did.

4. What does "nature" mean?
- Can people live in nature?
- How do you and your family use the local nature or environment?

5. What is volunteering?
- Why should someone volunteer?

6. Have you ever volunteered in the community, and if so, doing what? (Elderly, animal care, homelessness, education, environment?

7. What do you do for fun?

8. Do you dream of walking the entire length of the Appalachian Trail? Did you before you learned about it in school?

9. Have you ever tried to get your friends and/or family to hike or volunteer on the AT?

Noting a paucity of trail partner conversations during analysis, online surveys were made available to trail partners through Survey Monkey. (https://www.surveymonkey.com/r/3P7K6HW)

Page 1: Demographics

Name

Organization

Address

City/Town

State/Province

ZIP/Postal Code

Email Address

Phone Number

Community and Land

2: Describe the community you work in

3: How do people in your community use land today?

4: Does your community actively participate in the sustainability of the local environment?

5: Overall, would your community be inclined to volunteer for the preservation of the

Appalachian Trail or Public Lands? Why or why not?

Appalachian Trail Education

6: What involvement do you have with your education (with Trail to Every Classroom or other

capacities)?

7: Considering the youth you have worked with- what percent continue to work with outdoor

sustainability and local stewardship?

8: What do you see as the largest barriers keeping kids from getting on the Appalachian Trail or

doing outdoor activities?

9: Do you see a generational difference in how local people utilize or engage with nature?

10: Overall, how have you seen youth impacted by Trail to Every Classroom teachers?

Appendix F: Internship Schedule

Below is the internship schedule broken into location and research completed. The schedule is based on time allowance, funding limitations, and regional conference schedule.

Week	Dates	Activity	Place	Outcomes
1	April 1- 13	Possible addition: Southern Partnership meeting (March 27-29), Internship orientation, Meet with Program Staff, define schools for research, and meet with ATC staff. Focus Groups and participant observation as Southern Regional workshop (April 11-12)	Asheville, NC; Amicalola Falls Park, GA	Determine schools for Participant Observation (1) and interviews(25), Work with Julie (SRO)
2	April 14-19	participant observation in Southern School (1), capacity building with TTEC staff, networking for school surveys, data transcription and analysis	Roanoke, VA	School observation (1), capacity building, work with Kathryn (VARO)
3	April 20-25	Transcription, data analysis, networking to set up teacher interviews.	Roanoke, VA	
4	April 27- May 3	Focus groups and participant observation at Mid-Atlantic regional workshop, participant observation in Mid-Atlantic School (1)	Front Royal, VA; Roanoke, VA	Focus Groups, Participant Observation
5	May 4-10	Compile Notes, Networking for school surveys, Transcribing Data, Send Student interviews	Morgantown, WV	
6	May 11-17	Phone Interviews	Morgantown, WV	Interviews
7	May 18-24	Phone Interviews	Morgantown, WV	Interviews
8	May 25-31	Finish up Phone Interviews, Compile data/notes	Morgantown, WV	Interviews
9	June 1-7	Compile notes, transcribe data, Analysis	Morgantown, WV	
10	June 8-12	Tie up Loose ends, track down missing interviews, meet with ATC/TTEC staff	Harper's Ferry, WV	Determine next steps (analysis)
	July 20-24	Summer Institute in Shepherdstown WV	meet with Advisory Council	

Appendix G: Research Participant's Demographics

Demographics of participants from Phases I, II, and III.

Research Participant Demographics
TTEC Alumni Teachers Age Average- 46 years Ethnicity- 99% white, 1 % Pacific Islander Gender – 8 male, 20 female States- GA (2), NC (8), PA (2), NH (5), MA (2), VA (6), VT (2), ME (1) Grade – elementary (5), middle school (6), high school (5), k-12 (1), college (1), admin (1), ESL (1), spec.edu (2), librarian (1), retired (3), hiking club (2) An estimated -8,425 students impacted by the 28 teachers interviewed Total = 28
Focus Group Participants: Represents Virginia Region and Southern Region TTEC teachers, staff, and trail partners. 16 New TTEC Teachers, +2 staff, +3 TTEC Alumni, and +2 Community Partner Total = 23
Surveys: New TTEC teachers Gender: women (28), men (10) Grade: pre K (1), elementary (12), middle school (10), high school (6), k-12 (2) States: GA (5), NC (2), TN (2), VA (11), WV (2), PA (6), MD (1), NH (3), MA (3), ME (2) Total= 38
Students Grade- 4th (32), 5th (42), 6th (6), 7th (34), 8th (6), 9th (3), 11th (1), 12th (1) Gender – Female (64), Male (60) Representing 6 teacher classrooms Total = 124
Trail Partners Clubs- Nantahala Hiking Club (2), MRATC (2), Susquehanna Appalachian Trail Club, Piedmont Appalachian Trail Club, Georgia Appalachian Trail Club (3), Appalachian Trail Conservancy, USFS- Blue Ridge District (2), Roanoke Trail Club, Carolina Mountain Club States- NC, VA, PA, GA Total = 14

Summary results of:

- TTEC Teacher, Student, and Trail Partner structure/semi-structured interviews
- Trail Partner Online Surveys
- Focus Group Discussions
- And Participant Observations

Summary of Results- TTEC Teacher

Demographics:
Age Average- 46 years
Ethnicity- 99% white, 1 % Pacific Islander
Gender – 8 male, 20 female
States- GA (2), NC (8), PA (2), NH (5), MA (2), VA (6), VT (2), ME (1)
Grade – elementary (5), middle school (6), high school (5), k-12 (1), college (1), admin (1), ESL (1), spec.edu (2), librarian (1), retired (3), hiking club (2)
An estimated -8,425 students impacted by the 28 teachers interviewed

Answers:

How did you hear about TTEC?
- o Most teachers heard about TTEC through:
  - ▪ Emails from admin and instruction/curriculum directors
  - ▪ TTEC alumni
  - ▪ Hiking clubs (AMC,MATC, Allentown Hiking Club)
  - ▪ ATC and NCTC staff

Community- describe your communities, how do they interact with the local land, and are there generational differences?

- o "Our community views the land as income"
- o "For those kids I had to word it differently, if we don't preserve it there won't be anything to hunt or fish."
- o "local locals" "from here's" versus the "cosmic opossums" "second homers" "not from here's"
- o "The community has come out in droves to support what we are doing." – Maine teacher
- o "We have a supportive community and PTA that encourages the use of community resources." New Hampshire teacher
- o "I needed some help from some of the partner groups who could have been involved. As time has gone that's one of the things that I have felt more strongly about." – GA teacher

The communities fit into four types:

5. Throughout the region- A majority were from transitional communities, 50/50 with newcomers and long term residents. A mix bag of students and families who are long term residents and use nature for hunting/motorbikes/fishing, and newcomers who either ski/hike/camp/ kayak or are retirees (one community did have retirees active in supporting locally). Tourism is growing in these areas as well as with retirees mostly creating the population growth (exurbanization).
6. Rural Appalachia (mostly Southern plus Maine) -A large percent were rural, low socio-economic, farming, students on free or reduced lunch, using the outdoors for hunting and fishing, long term residents, parents are not outside because they work and are unhealthy. Students are still connected to the land as they live on the land and have multi-generational ties to it.
7. Suburban Appalachia- the third largest group were transient communities where families lived in a rural setting but commuted to local towns for work. These communities see a high level fluctuation in students, parents who are working outside of the community, and a variety of socio-economics (half are farmers, half are commuters). Very little connection to the land or outdoor recreation (other than organized sports teams).
8. Northern Appalachia in the New England area- a small portion were more conservation based communities who used nature with little impact on it (hiking, camping). They have parents who were engaged with hiking and supported their TTEC teachers. These communities were also tourism based for the most part and locals as well as tourists engaged with outdoor recreation.

Community Recommendations: know the community your teacher is working in. The communities all have similar challenges/ successes based on the community type in which they live. Parental involvement is very much based on the community- parents need to be brought into the process in order to create a larger impact. Actively connect teachers/alumni who are in similar communities/grade levels/ subjects. Teach about how to connect with more community partners, including those outside of the trail clubs (businesses, community based organizations, retirees …). Diversify your teachers if you want to diversify who they impact. Appalachia is predominately white (83.2), but 16.8 percent are minority populations also present in the region (black- 9.2, Hispanic/Latino 4.3, other 3.2) according to the Appalachian Regional Commission 2015 Community Survey.

Curriculum- how often is TTEC or the outdoors part of your curriculum? Are you using the local community in your curriculum, are there service-learning components? Are you still actively engaging in TTEC Curriculum

- "My child had ADD and completely changed after being in the outside."
- "There's more to education than passing a test, that's what the trail offers."
- Barriers to teaching- transportation/ proximity to the trail, administration, testing, money, instructional time- not long enough to take kids outside, If you aren't a tested subject you are lower on the priority list and have less sway to take kids out.
- Barriers to create youth stewards- parents (not active in the outdoors), multiple grade levels of TTEC aren't there (students are only going out for 1 year- it's suggested to have multiple grades and into high school).

- Community utilized- TTEC alumni, Community based organization/club (Sugar Hill Conservation Committee, AMC, MATC, GATC, CMC, PATC, Nantahala Hiking Club), local outfitters (for gear support). For the most part the communities are underutilized. A majority of teachers were not engaging the community past their local hiking clubs. One used local retirees, and a couple applied to businesses for funding support. This low level of community engagement correlates to the low level of curriculum which is actually place-based service learning. Teachers actively engaging in service-learning were also more rooted in their community for support of their efforts and cited more community partners and well as students who were more likely to value and support their local community.
- Curriculum being utilized:
    - Reading pages/books about the AT which equal the length of the trail
    - Hiking
    - Trail maintenance
    - Questing
    - School garden
    - Hiking trail at school
    - Guest speakers (thru hikers, Jennifer Farr Davis, ATC staff)

Curriculum/ Classroom Recommendations: choose classrooms closer to the trail, multiple grade levels within the same school or district to create a county culture around it, not restricted to using the AT- just getting kids outside makes a huge impact, including more community members- the community is currently highly under-utilized, being a designated Trail Town helps significantly, outdoor classrooms on site, administrative and parent support- this could be helped with considering local culture more.

Student Engagement- Considering how many youth you've educated through TTEC curriculum, what percent of students (no longer in your classroom) do you think are still involved with trail or environmental stewardship (either through volunteerism or recreational use)?

- "Most of the students felt more connected to their local community after our unit. Not so much the AT though."
- "A lot of kids don't realize it's in their backyard."
- "They value what their parents' value."
- Some have gone on to be involved in outdoor clubs while many have their time take over by organized sports in higher grades.
- Parents are key- many question if the students are continuing because it's up to parents to take them out. Some teachers do report that the kids are pulling their parents out after they have been exposed to it, but many also report that the parents are too busy, out of shape, or not into hiking.
- A couple of teachers did report students going on to careers in Fish and Wildlife, military (although I don't see the connection here), environmental studies (only a couple here), or forestry (although this means to that need to leave the area to secure jobs).
- The largest percent of continued involvement seems to be with gardening, camps, and outdoor clubs (where offered). None of this is measured, but it is thought to be occurring with some of the TTEC students.

- Several teachers also cited that students aren't sticking around the county- this came up in the community piece, but if youth cannot stay because of rising land prices and decreasing jobs then they cannot stay and steward the land.

Recommendations for student engagement- There needs to be more than just hiking twice a year- include: gardens, outdoor classrooms, clubs, connect them to camps. Also, again, parents are key- engaging parents seems to bring about more continued trips to the outdoors. Boy scouts and required service projects in schools also provides opportunities for kids students (one student re-blazed a trail for a senior service project). This should be tracked to some capacity- how can you measure kids' continuation in the outdoors? Start measuring student data- what are their grades in the beginning of the year versus after the program? Do a pre and post survey to see how kid's attitudes change, collect data regularly in order to see the change.

Overall TTEC Program reflections:

- "I learned more, got more, showed more- became a better teacher because of it."
- "I was a standard health teacher and now my whole perspective has been transformed on how to get through to the kids."
- "When you can stand in front of a piece of art and take a step back and look at the colors and textures and scale. It's so important to be able to walk around your sculpture. It's not just about teachers who hike. The place is about seeing first hand."
- "We need to be continually supported. Keep us in the back of your mind so that we (alumni) can continue to keep TTEC in the front of our minds."

Recommendations for the overall program:

- More alumni events to keep TTEC teachers involved
- Develop better communication systems which connect teachers and communities throughout the region
- Go into county offices and schools which are on the trail to recruit, advocate for teachers using TTEC, and learn how to meet standards.

Textual Analysis

- Spatial Scale (individual, local, community, regional, national) - A majority of teachers spoke very locally about their community and experiences. Two mentioned international components (like foreign thru hikers), one referenced the entire region of the AT/Appalachia, a couple spoke at the state level, and all respondents spoke very locally (community, town, school)
  - o Teachers have a very local focus of their efforts. This could be good in that they are aiming to impact their community, but only a few spoke of the value of the entire region (from GA-ME). No one spoke about the larger environmental impacts of pieces like climate change or larger habitat loss.
- Temporal Scale (into the past and into the future)
  - o Almost all of the teachers interviewed spoke of a temporal scale within the school year or a few years in the past or future. A few teachers spoke about the history of the area- giving it a longer temporal scale into the past, but no one spoke about the distant future. Again there was no conversation of larger scale environmental impact or youth's ability to change the future of their land. There

was concern placed on youth having to leave the area economically, but again this did not look very far into the distant future.

- Human Scale/Agency (users, protectors, investigators, disturbers) and collective or individual (we/us, I/ me)
    o Every teacher spoke of humans as users, a majority spoke of human as investigators (which is understandable as they are teachers using the environment as an educational tool). Only one spoke of humans as being disturbers, and only two spoke of humans as protectors- this would suggest that there is a lack of agency in humans impacting the environment as well as little impact in harming it. A majority of teachers see the environment as a place to utilize- but very few spoke about the agency in its preservation, long term future, or sustainability. Responses were also centered on "we" conversations rather than "I"s. This places the focus more in a collective action rather than individual agency.
- Political Tone (formal- government, policies regulations), (informal- civic action, public debate)
    o Only one person spoke of larger formal government politics. Most of the teachers spoke about state level standards being a point of frustration, and the efforts of small scale civic action (in terms of local hiking clubs, outdoor outfitters, and school based actions). While there are large scale politics at play in many of these communities, the focus was again very local in politics and actions.
- Environmental Value (threatened, cherished, homey) (intrinsic value, ecological value, spiritual value, relation to economic growth, human health, climate change)
    o The value placed upon the environment was largely in the area of economics, experiential/recreational, and homey. A couple of teachers spoke of the intrinsic value and it being a cherished place. A few also spoke to the ecological value of land. Only one teacher spoke of the spiritual and pristine wilderness (this was in New Hampshire), and no one spoke of climate change. In the field of human health- a few spoke to the levels of obesity in the area and many spoke about getting youth active. Lastly, the economic value was placed on growth in tourism (positive) as well as newcomers coming in (negative) which is on opposite side of the value scale.

Likert Scale Numbers (scaled 1-5, 5 being the highest):

- Overall do you think that your students have a greater awareness and understanding of the A.T. and associated public lands because of their experience in TTEC curriculum? **3.93**
- Overall, do your students have a greater interest in outdoor activities because of their experience in TTEC curriculum? **3.96**
- Do you perceive an increased interest in community service on public lands? **3.12**
- Would your students (current or alumni) be inclined to volunteer on the A.T. if given the opportunity? **3.8**
- Students work on real community needs and opportunities. **4**
- All students that participate in service-learning continue to engage with the A.T.'s preservation **3**

- I encourage others to actively engage in service with the AT. **4.06**
- Students feel ownership of the service-learning project. **4.31**
- Trail partners value their role in supporting TTEC activities **4.5**

Likert Notes: 17/28 responded to the service-learning questions (service is not happening in many classrooms) - thus the numbers are skewed higher with fewer responses. This can be seen in the first half of the questions where the perceived interest in community service is only 3.12- because many groups did not do community service.

Summary of Results- TTEC Students

Demographics:

Grade- 4th (32), 5th (42), 6th (6), 7th (35), 8th (6), 9th (3), 11th (1), 12th (1)

Gender – Female (65), Male (61)

Total students = 126

Student Responses

Community:

What do your parents do for a living?

- Most students have parents who are in blue collar jobs (mowing, cleaning, timber, driving, construction), are unemployed, or on disability (the student notes them as sick or unable to work for various reasons).
- There are a couple of students with parents with jobs on higher pay scales, but this is a strong minority- most of these are in hospitals, correctional facilities, or school systems.

What do you want to be when you grow up?

- Most of the responses given by students where white collar jobs- doctor, vet, marine biologist, professional athlete, FBI, therapist.
- A few students also spoke of going into Marine Corps, Coast Guard.
- Only a couple of students aspired to be what their parents were- seamstress, teacher, driver, construction worker

Describe your community, what do you like most about your community?

- A majority of students spoke positively of their community- friendly, calm, small, lots of forest, supportive, full of friends and family, beautiful
- Almost every student spoke of nature being one of the things they like- calm, quite, the lake, and the mountains.
  - o "You can go to sleep without an interstate close by." – VA student
- They also liked the community- very friendly community, everyone knows everyone, safe, small
  - o "Very tightknit and pushes younger generations toward success." – NH student
- Several students also spoke about it being too small, boring, nothing to do- but then they also went on to say that they liked being in nature and in a friendly community

- A couple of students also mentioned drugs being there.
- Students also described the community based on places they utilize- stores, school, and friend's houses.
- **Only one student mentioned the AT**

What do you do for fun?

- Most students do outdoor activities for fun: bike, hunt, fish, swim, play outside, run around, ride horses, ride ATVs, sports (basketball, soccer, football, softball…).
- 17 students said they like to hike for fun
- 15 students mentioned playing video games, half of those also mentioned an outdoor activity which they liked as well, and all but four students said they liked being outside or mentioned an outdoor sport they enjoyed.

Nature:

What is "nature"? Do you like nature?

- "A place that we cannot ruin because it has many great things." – 7th grade TTEC student
- "I want to go on the record and tell the US government that if you can learn in a classroom, you can learn in nature." – 5th grade TTEC student
- "Nature is a very fun playground" – 5th grade TTEC student
- For all of the students nature was described in positive terms: beautiful, peaceful, living, plants animals, outside, fun …
- All but four students liked being in nature, two of those students didn't like it because of insect or pollen allergies.

What do you or don't you like about being in nature? What do you like to do in nature?

- "Being Attacked by animals #why can't we be friends"
- "I like about nature that there is many things you can learn about in nature that you have not got to learn about before." -5th grade TTEC student
- "You don't get to choose nature it's just there." – 9th grade TTEC student
- The students were evenly split in interacting with nature (hunt, fish, farm, cookout, four wheeling, climbing), and observing nature (animals, calm, trees, explore, wonder). Students spoke of liking both and often would mention both in their responses.
- Students also spoke of the power nature has to harm, which the teachers did not mention: poison oak, bugs, scavengers, weather- tornados and hurricanes, winter, spiders, allergies, bears, ticks.
- Eight students spoke of protecting nature- mainly from trash
- And thirty students spoke of enjoying hiking – only one was specific to hiking on the AT.

Nature and Community Recommendations: Larger connections need to made between the AT and community. Students did not connect the AT with their community. Students spoke very highly of their communities suggesting they are not yet as disconnected as some believe. They liked nature, but weren't specific to the AT. Kids are outside, even though adults see them largely connected to electronics. The largest critique of communities was they are boring- can this be helped with more access provided to the outdoors (something they liked)?

Appalachian Trail/ Curriculum:

Have you ever been on the AT before this class?

- 82- no
- 35 - < 2 times
- 9 - > 4 times

Have you been on the AT with your family?

- 76 – no
- 41- < 2 times
- 9- > 4 times

How many times have you been hiking with your school?

- Varies per class – A majority of students have gone twice with their teachers, several note going once, and a few (3) say they have gone > 8 times.

Do you dream of hiking the entire AT?

- Yes- 37
- No- 29
- Maybe- 42

Volunteering:

Have you ever volunteered? If so doing what?

- Yes- 81
- No- 32
- I'm not sure- 7
- A majority of the students spoke of volunteering as helping people- helping elderly, food drives, church trips, helping with grandparents, "poor people", concessions/fundraisers, Special Olympics, tutoring, soup kitchens, Relay for Life
- A few spoke of helping animals- humane society, pet adoption
- A couple spoke of environmental volunteering (2)- planting flowers (not one group interviewed were actively planting flowers at the local state park the day of the interviews), cleaning up brush, picking up branches, recycling (1), support in ski trail maintenance
- 14 students talked about picking up trash

Define "volunteer", why should someone volunteer?

- "someone who helps out with something because they feel like they should" – 7th grade TTEC student
- "Volunteering means to me when someone does something without something in return."
- "Volunteering is for people."
- "People should volunteer because it makes you feel good about yourself and helps you see that even the smallest things to you can make a huge difference to someone else." – 7th grade TTEC student

- A majority of the students spoke of volunteering as doing something without fiscal reward: for free, without getting paid, and not a job. Thirty of those students were specific that it was to help people and the community.
- Note that the 4th and 5th grade students I was observing in VA were actively volunteering for nature by planting flowers, yet only one made the connection.
- Many students also had a broad concept of volunteering- they saw it as doing anything for free (such as chores)- mowing, helping parents around the house, cooking, helping take care of a family pet.
- Many concepts of volunteering were very local (family based) with some exceptions of community wide projects. Nothing regional or on a larger scale.

Have you ever encouraged someone else to volunteer?

- Yes- 34
- No- 54
- I'm not sure- 23

Student Curriculum and Volunteer Recommendations: The students do not see the larger concept of volunteering. They understand the basic concept but are not seeing the larger community piece. There is no regional concept of helping the trail. There is very little concept of environmental volunteerism. There should more emphasis placed on stewardship, how the environment impacts the community, and volunteerism opportunities made readily available to youth. A huge hindrance is time and transportation for getting to volunteer activities. Students also do not care about hiking the vastness of the AT- they care more about their local section. The program is not to create thru hikers- but is there a way to gain a larger appreciation for the whole trail?

Text Analysis

- Spatial Scale (individual, local, community, regional, national)
    - All of the students spoke on a very local and individual level. There was no regional Appalachian or AT sense of ownership.
    - A majority were very happy in their communities and spoke fondly of their local space.
- Temporal Scale (into the past and into the future)
    - No students spoke with any sort of a temporal scale. Their responses were all very immediate, not sense of future protection or climate change.
- Human Scale/Agency (users, protectors, investigators, disturbers) and collective or individual (we/us, I/ me)
    - A majority of students spoke of people using nature for recreation "nature is a very fun playground"
    - 8 students also spoke of the garbage in nature and needing to be protectors
    - 2 students also spoke about being investigators of nature- learning in nature
    - Most spoke on an individual basis, a few mentioned "we" in classroom or family context.
- Environmental Value (threatened, cherished, homey) (intrinsic value, ecological value, spiritual value, relation to economic growth, human health, climate change)

- o Many spoke of a visual/ experiential value on the environment- they like looking at the plants and animals. The like the silence, being able to "just sit outside"
  - ▪ Animals were mentioned 48 times, plants- 29, trees- 46.
- o "A beautiful place to go have fun and have peace"
- o "Climb trees and look at the view from the top"
- o Many also spoke of a recreational value- they like hiking, hunting, fishing, biking…
- o Nature is also cherished and homey and many associated their homes and communities with nature and one of the larger pieces they likes about where they live.
- o Ecological Value/ threatened- There was some ecological value placed upon the land with needing to pick up garbage, protect the animals and trees.
- o Spiritual Value- Two students mentioned God's creation of nature
- o Economic Value- 7 students mentioned farming as what they want to do, what their parents do, or what their community does
- o There was no talk of climate change or human health. Although some spoke of not liking storms- there wasn't really any connection made between weather and climate change.

Summary Result – TTEC Trail Partners:

Clubs- Nantahala Hiking Club (2), MRATC (2), Susquehanna Appalachian Trail Club, Piedmont Appalachian Trail Club, Georgia Appalachian Trail Club (3), Appalachian Trail Conservancy, USFS- Blue Ridge District (2), Roanoke Trail Club, Carolina Mountain Club

States- NC, VA, PA, GA

Total = 14

Describe the Community you work in:
- ● All of the trail partner contacts were from Southern Appalachia- most described their community as rural, remote, small, experiencing growth.
- ● Most noted the jobs in the region: farming, construction, customer service, tourism

How does your Community use the land?
- ● There are two sides to the responses here: USFS land, farming versus residential, developing.
- ● National Forest land is used for recreation, people interacting with the land- biking, camping, plant collection, firewood
- ● All of the partners spoke of the land as being engaged with: hunting, farming, fishing, firewood, recreation …

Does your community actively participate in the sustainability of the local environment?
- ● Responses here are across the board. Some have large groups of environmentally conscience people, many are working on individuals not groups, the hiking clubs seem to be the most active in preservation

- one respondent mentioned politics as a reason "to a limited degree, the county votes 82% Republican"
- There does not to be any large concerted effort outside of trial clubs.

Overall would your community be inclined to volunteer for the preservation of the AT or Public Lands?
- "Most would be afraid of big government and are big into personal property rights."
- "There is a prejudice against the federal government and public lands concept, because some of the local land was seized long ago and because they believe they get less tax income"
- "they don't recognize the value of public lands and the importance of preserving them for future generations"
- Some individuals support the AT and Public Lands, but according to respondents- a majority there is a large social stigma against them.

What Involvement do you have with TTEC or other youth education?
- All of the trail partners support in hikes
- one group spoke of going into classrooms to give presentations on top of hiking
- GATC- estimated bringing approx. 1500 student to the trail annually

Considering the youth you have worked with- what percent continue to work with outdoor sustainability and local stewardship?
- This question was difficult to respond to- no one could give numbers
- A couple estimated 10-15%
- A few work with younger groups and thus found it difficult to see the level at which they continue to work with trails and public lands.

What do you see as the largest barriers keeping kids from getting on the AT or doing outdoor activities?
- "Both parents work to support the family. Not much money left for hiking"
- "Going into the woods is not a normal part of their community lives"
- Transportation is the number one reported barrier
- Second is testing- it is difficult to find time to take kids out with all of the state testing.

Do you see a generational difference in how local people utilize or engage with nature?
- All respondents said yes- Older people are getting out, and younger people are constricted by parents, loss of freedom to play outside alone, and money.

Overall, how have you seen youth impacted by TTEC?
- "I have seen a few good things but much more needs to be done."
- "Short-term. I've seen young people develop self-confidence after completing what was, for them, a difficult hike."
- "They are enlightened and excited to find something vast and new."
- When teachers get kids outside the trail partners are seeing learning, opening up to new experiences, engaged learning, and better understanding of environmental issues.

Recommendations from Trail Partner Responses: There is a larger social issue which should be considered when working within the communities. Consider working with communities in an advocacy capacity- how can community dynamics be shifted to appreciate public lands? There needs to be more concerted effort to work with trail partners. Is there a way to have teachers bring a "Community partner" with them to the trainings like last summer's conference? Doing this would give them local support but also help with the sustainability of the program within the community as many places appear to have a high teacher turnaround. Trail Partners seem to have the capacity to help with the difficulty of getting classrooms outside on the trail- how can they be better utilized?

Focus Groups- Textual Analysis

16 Participants Total of New TTEC Teachers
+2 staff, 3 TTEC Alumni, and 1 Community partner
22 total
VARO and SORO Text Analysis

- Spatial Scale (individual, local, community, regional, national) - A majority of teachers spoke very locally about their community and experiences. Two mentioned international components (like foreign thru hikers), one referenced the entire region of the AT/Appalachia, a couple spoke at the state level, and all respondents spoke very locally (community, town, school)
  - Community based
  - Local local
  - Region in transition
- Temporal Scale (into the past and into the future)
  - "Getting kids to know their roots is kind of difficult"
  - Deeper historical roots in the region- can connect themselves and family to the region.
- Human Scale/Agency (users, protectors, investigators, disturbers) and collective or individual (we/us, I/ me)
  - Users
  - Collective "we"
- Political Tone (formal- government, policies regulations), (informal- civic action, public debate)
  - "how do you make nature accessible to low income people"
  - formal government challenges
- Environmental Value (threatened, cherished, homey) (intrinsic value, ecological value, spiritual value, relation to economic growth, human health, climate change)
  - Cherished - " I know stories about them and I feel very connected to them."
  - Homey
  - Human based

Chart for Textual Analysis in Analysis Section, Figure 4