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Outreach as Dialogue: Lessons from University Forests

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OUTREACH AS DIALOGUE: LESSONS FROM UNIVERSITY FORESTS

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ABSTRACT

University and school forests are managed for a unique set of multiple uses from research and teaching to recreation and forestry. Understanding how outreach is employed in these settings as a component of their land management strategy can offer insights to school forests generally as well as other complex land management efforts. Using outreach, a forest can facilitate communication as a dialogue, connecting to forest participants and stakeholders. This qualitative research study uses a multi-scale case study approach to examine a recent harvest and outreach efforts at the Clemson Experimental Forest, as well the outreach efforts at eight other university forests in the United States, in order to understand the nuances of outreach in a university forest system. The primary objective of this research was to gain specific knowledge regarding what is considered outreach, current evidence-based practices being used at university forests, and outcomes or perceived benefits of outreach experienced by forest representatives. Findings of this research study suggest that outreach is the connection of university forest with community, neighbors, stakeholders and forest participants. The four most commonly practiced connection activities found to facilitate effective outreach within a university forest are clear communication, signage, engagement and planning. From our data sample, we determined that outreach has perceived benefits across many university forest systems. We have learned that five perceived benefits are an increase in funding, advocacy, partnerships, understanding and influence. Finally, outreach can be an effective strategy for managers to create positive relationships through community collaboration, by partnering with forest participants, government agencies, NGOs, and private businesses, in order to achieve a forest's mission.

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INTRODUCTION

University and school forests are uniquely managed for multiple uses, mainly demonstration, research, sustainable harvesting, and recreation. Outreach has typically been used by university forests, but not necessarily with the aim of creating a dialog with community adjacent to the forest. The varying organizational systems of a school forest can be a barrier to connectivity as this can lead to varying management directives. Therefore, this requires the university or college to strategically reach out to the local community through events and information. Interpretation programs and forest signage are geared to people already interested in seeking out information, but outreach can specifically target people that are not seeking information which are important stakeholders of the forest community. Most school forests participate in some level of timber harvesting, which is sometimes in a viewshed. This is a management practice where outreach can be utilized to mitigate concerns, especially if the outreach is a dialogue, not static information.

The Clemson Experimental Forest (CEF) became part of Clemson College in 1939 in an agreement with the Federal government to manage reclamation land purchased under the Works Progress Administration (WPA) of 1934. The CEF was established with the prime directive "to be a well-managed, self-sustaining, ecologically healthy, living laboratory, classroom and recreational resource for the benefit of the university, commerce and citizenry of South Carolina. The forest is managed strictly for perpetual sustained or improved yield of these [forest] products." (Clesmon.edu, 2022). While the directive of the forest is well defined, there may be some misinformation circulating amongst the local community and participating stakeholders about the practice of timber harvesting in the CEF.

In July of 2020, a 34-acre tract and another 4-acre tract of loblolly pine, located directly across from a local middle school (Figure 1) were harvested due to harvesting timelines for the planted loblolly pines. The trees were planted over 70 years ago for the sole purpose of being harvested, however the information was not communicated to the community or was lost over the seven-decade period.

Figure 1. Ariel Map
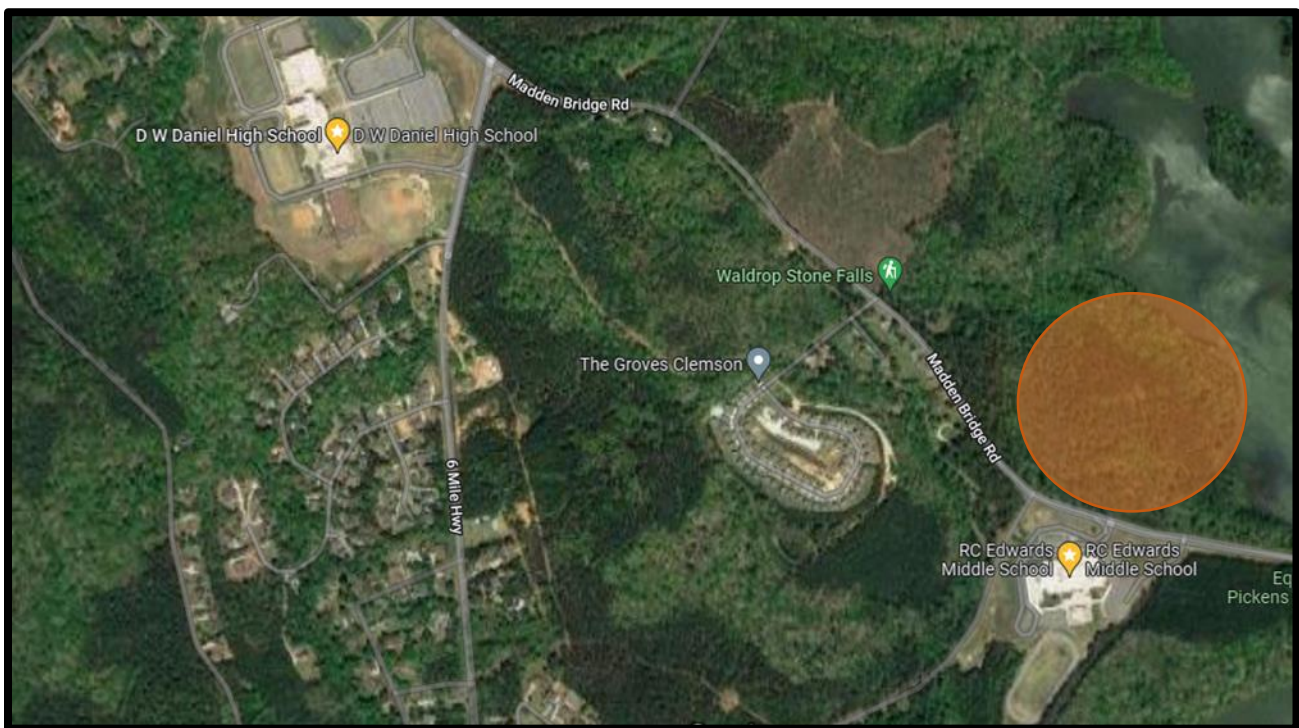
*(Two school locations are denoted on map with yellow pins. The 34 acres of forest that was harvested is shown in orange across from RC Edwards Middle School.)

The harvest was a visual clear-cut, and many within the community expressed frustration at the lack of outreach and communication from forest management regarding why the trees needed to be harvested, reacting negatively to this type of harvest in viewshed of the school. When stakeholders, neighbors and community members saw the land raw, stripped of the trees, they had uncertainty about why the trees were cut. Many in the community believed stories of

development for future housing. The literature suggests that one way for these misunderstandings and uncertainty to be lessened is for outreach to be practiced (Brown, de Bie, & Weber, 2015; Corsane, 2006).

The CEF, like many university forests around the country, understands that outreach is an important component of their land management strategy. When utilizing outreach, a forest can facilitate communication as a dialogue, connecting to forest participants and stakeholders. But what is outreach? How is it defined? And what are the current evidence-based practices in outreach that university forests are participating in? The purpose of this research is to examine perception of university forest outreach practices at one site (CEF), and at eight additional university forests, in order to understand what outreach lessons can be learned from university forest systems and the current evidence-based practices of outreach, determine the outcomes/benefits that may come from effective outreach, and finally, evaluate the implications of this.

LITERATURE REVIEW

University forests are designated natural areas that are a part of a college or university, and most have a mission to support teaching, research, demonstration and sustainable harvesting for the betterment of the school and the citizens of the state and/or nation. University and school forests (hereafter referred to as "university forests"), however, may have a wide variety of users and understanding of the system, and may not be clearly understood by many people with regards to their natural area designation. University forests are not typically on a map as are national forests or state parks, and so users and neighbors of these systems rely heavily on the College or University to communicate about the system. This communication may be through interpretive signs, websites, or outreach education. All three are different in their focus and intent. This study will examine the process of outreach as practiced by university forests since it offers the potential for dialog with a community of those that come to and live near the forest system.

Traditionally, outreach related to natural areas has been a vehicle for organizations to interface with a people outside the organization (Gerdes et al, 2020). Usually, this group of people are individuals who are connected to the organization in some way, known or unknown. The group may be individuals who regularly communicate with the organization, individuals who have never communicated with the organization and are seeking information, or people that the organization is trying to connect with due to proximity or relational reasons (Petrzelka, 2012). When conducting traditional outreach, an organization may host interpretive talks or tours, inviting school groups or the visiting public to listen to information about the park, resources, or protected area (Gerdes et al, 2020). Additionally, the organization may send out monthly or quarterly newsletter in order to inform the public about the agency's recent or

upcoming activities. A park may host historic or cultural events that seek to teach the public about the not-so-distant past of the area's resources and culture. These are examples of how parks and protected areas may use traditional outreach to connect with the public to inform, educate or communicate a specific topic. Outreach is an important tool as it is used to cultivate new participants, increase access, and to combat the exclusion of underrepresented groups (Corsane, 2006). These traditional outreach methods have been used by federal land management agencies for decades. The USDA has described their outreach as:

> "*A way of conducting business that ensures underserved individuals and groups throughout the United States and its territories are made aware of, understand, and have a working knowledge of USDA programs and services. Outreach will ensure that these programs and services are equitable and made accessible to all.*" (1999)

New ideas of outreach have been identified as having a more positive impact on the community surrounding a park or protected area (David, 2004, Davis et al, 2017, Metcalf et al, 2015). When outreach is used to *create a dialogue* where individuals are not just being informed, educated or communicated to, but are sought out to exchange thoughts and ideas, and are engage with an organization, an information exchange between the organization and the community is created (Schelhas & Hitchner, 2020, Metcalf et al, 2015). This idea of an information exchange being used as a tool to connect and engage, is a way to reach out into the community and build relationships, connecting to individuals and groups, but requires a willingness to learn and listen on the part of the organization. Lauber et al (2012) describe this as a two-way communication between stakeholders and management. One recent study looked at how the Sustainable Forestry and African American Land Retention Program (SFLR) is using community-based projects to engage with local communities to stabilize landholding diversity throughout southern forests

(Schelhas & Hitchner, 2020). When this method is utilized, it gives the community an opportunity to respond with questions or comments, and to inquiry for more information, forming a dialogue that promotes equitable communication.

An organization may feel that by communicating with those already within their interest circle, they are doing outreach; however, the literature disagrees (Corsane, 2006). When communicating solely with those already known to the agency, they are participating in inreach. "Successful inreach nurtures and roots involvement in the institutional community, providing individuals with meaningful, transforming, life-affirming experiences and helping institutions grow with them over time." (Corsane, 2006, p.115) The essential difference is that inreach seeks to repurpose those that have already existed within the organization's sphere, while outreach seeks to bring in new uninformed participants, and those represented in their mission but not represented in their currently participant profile. Whether an organization is performing inreach or traditional outreach the research has shown that it is the connection to people that makes outreach effective.

Stakeholder Relations

When the community does not feel information is being relayed to them, or they need specific information, they may retrieve information from an organization or agency. It is common practice among many park agencies to have community members request information and educational experiences, but the literature defines even these experiences as outreach (Jacobson, McDuff, & Monroe, 2017). It is the type of communication and the ability of mangers to connect to the community that make new, nontraditional outreach a best practice (Grover, 2006).

Specifically, when it comes to managing parks and protected areas, land managers have the unique responsibility to care for and ensure the longevity of parks and protected areas (Armatas et al, 2018). They face many challenges and distinction obstacles when making decisions regarding the land they manage and how to communicate with the public. One challenge managers face is potential conflicts and misunderstandings with the local community (Brown, de Bie, & Weber, 2015). The communities living around and adjacent to parks and protect areas may have a sense of ownership, hold intrinsic or symbolic value, and be considered stakeholders to that public land. (Cheng et al, 2003) Stakeholders are defined as, "individuals and organizations that share common interests in public land decisions" (Brown et al, 2015, p. 2). When considering the CEF specifically, it is linked to the community through proximity (Figure 2), given that the forest is situated within multiple counties and cities. The figure is meant to represent how the CEF is embedded to the community. Mangers should consider the variety of neighbors and stakeholders within the community when planning and managing, in order to be effective with outreach implementation. As such, outreach from the CEF involves clear communication in the form of dialogue and stakeholder participation to facilitate engagement and participatory processes in the management process.

Figure 2. Map of Clemson Experimental Forest

Miller & Nadeau (2016) note that an increase in public participation in decision making reveals social ideals among the population and gives meaning to democracy and legitimizes policies. "Land management is inextricably linked with the elusive concept of public interest that seeks to advance the welfare of a social collective over private interests." (Brown et al, 2015, p. 2). While it is difficult to navigate community opinions about public land, it is important to engage the local community and not just relay information to them as a one-way communication. Public engagement and stakeholder analysis allow for a more holist approach to land management (Brugha & Varvasovszky, 2000, Corsane, 2006). Lauber et al describes stakeholder engagement as "the process of involving and interacting with stakeholders in the making, understanding, implementing, or evaluating if management decisions" (2012, p.139) It has also been identified throughout the research that when the public views a management decision negatively, the implementation will be extremely difficult (Stidham and Simon-Brown, 2010). Additionally, there is greater acknowledgment that decision-making should consider diverse stakeholders, such as those of underrepresented groups and a broad spectrum of the public (Lauber et al, 2012). That the values and perspective of these groups are important to the culture and uniqueness of a place (Armatas et al, 2018). "Place-based collaborations tend to center on problem solving, emphasize trust building, and focus on achieving on-the-ground actions supported by a broad spectrum of publics." (Cheng, 2003, p. 88)

Value, Conflict, Trust, and Communication

The benefits of nature are widely discussed in both academic and nonacademic literature (King et al, 2015). Public lands provide environmental, social, economic and spiritual benefits to the citizens across the impact area (Brown, et al, 2015). The perceived value, or ecosystem services, of nature comes in many forms. Pascual et al (2017) describe nature's contributions to

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people as "all positive contributions or benefits, and occasionally negative contributions or detriments, that people obtain from nature" (p. 9). Based on an individual's varying perspective, a value, or measure, is placed on what is important or beneficial to them. Some value categories that Pascual et al (2017) defined relate to economic, social and environmental in nature. These values represent not only a monetary utilitarian amount, but a symbolic value to stakeholders. Research has shown that while economic benefits are heavily studied and reported on, social and environmental benefits are less tangible and are difficult to measure; as a result, little research has been done (Brown, Weber & de Bie, 2014). Since the economic value placed on nature is dependent on an individual's perspective and based on a consumer market system, and intrinsic benefits to individuals and society can be difficult to measure, the result is that land managers are charged with making decisions that are most economically beneficial, not necessarily beneficial to the surrounding community (Brown et al, 2014).

The delicate relationship between managers and community members is one that requires clear communication as outreach to ensure all parties feel understood and included in the decision-making process. When it comes to land use, stakeholders are increasingly concerned that multi-use land management promotes private interests instead of public interest. Brown et al (2015) state that "management of 'multiple-use' public land can generate controversy as they provide for recreation opportunities as well as resource use and extraction." (p. 2). Questions, concerns, misunderstanding and even conflict can arise when land managers lack clear communication with the local community and stakeholders (Stidham & Simon-Brown, 2011). The conflicts associate with the CEF have created ruptures in the normality of stakeholder's interaction with the forest (Arndt, Gibbons, & Fitzsimons,2015; Cooper, 2020; Wagoner & Carriere, 2021). When stakeholders see a clear-cut yet have received no communication

regarding it and have no understanding of why the trees needed to be cut, uncertainty may arise from not knowing why the trees are being cut, and misunderstandings that have come from misinformation about what the land is used for. Community stakeholders have seen clear-cutting as a transformational change to how they normally interact with this land (Cooper, 2020; Wagoner & Carriere, 2021). Wagoner and Carriere (2021) describe ruptures, "as the experience of a disruption in the adjustment of the person to her environment, [and] it's causes can be as much internal as external, and these causes can be semiotic as well as material" (p. 77).

Throughout the literature there is a general understanding that stakeholders have a lack of trust in land management agencies and policy makers (Englefield et al, 2019) that arise from misunderstands and unfamiliarity with management decisions (Kilgore & Snyder, 2016, Hoffman 2017, Miller & Nadeau, 2020). Two key elements to gaining community support and reducing misunderstandings are to build trustworthiness and encourage stakeholder participation throughout the decision-making process (Hutto & Belote, 2012; Shilling, Boggs & Reed, 2012; Miller & Nadeau, 2020; Mansfield et al, 2008; Stern, 2006).

For public land to be maintained in a sustainable way, and for the highest benefit to the land, agencies are charged with planning to create and implement policies. These policies identify a purpose and management practices for specific uses, like recreation and resource extraction. However, they do not always provide specific instruction for how to manage for multiple uses (Brown et al, 2015). Traditionally, top-down, command and control approaches have been used to enact management policies, but the success of such approaches has been less than effective and has created conflict between user groups and managers (Brown et al, 2015; Simmons, Wilson & Dean, 2019), and may not represent the values of diverse stakeholders (Lauber et al, 2012). Consequently, the management of public land is increasingly more difficult

as managers face the conflicting goals of multiple users and types of uses (Britto et al, 2019; Brown et al, 2015; Lauber et al, 2012; Shilling, Boggs & Reed, 2012). "Even national park agencies around the world are challenged to find a balance between conservation and development." (Brown et al, 2015, p.2). Forest harvesting, for example, can have health benefits for the forest and economic benefits for the community surrounding the natural area; but other public land participants, recreationist and conservationist for instance, may have negative feelings toward these forest harvest activities (Britto et al, 2019). As land becomes increasingly more expensive and the need for resources also increases, mangers are faced with potential conflict and misunderstanding when engaging with stakeholders regarding future management decisions (Referowska-Chodak, 2019).

One way for managers to be effective in their agency's mission is by conducting outreach in order to develop and maintain essential stakeholder relationships (Englefield et al, 2019), and help ensure stakeholders are well informed about pertinent facts and issues (Lauber et al, 2012). Englefield et al (2019) have identified core leadership competencies that are central in helping land managers achieve this goal. The authors indicate that "Trust, in particular, is widely recognized as essential when establishing conservation initiatives, especially regarding stakeholder relationships." (Englefield et al, 2019, p.19). From this research ten themes have been identified as having the greatest effectiveness in conservation leadership, specifically,

> *"1) collaboration and stakeholders, 2) direction and motivation of others, 3) decision making and empowerment, 4) team culture, 5) public outreach and culturally relevant community engagement, 6) vision, 7) adaptive management and hands-on leadership, 8) sense of the bigger picture, 9) networks and relationships, 10) value knowledge including experience, traditions, science and learning."* (2019)

This study highlights the importance of outreach in creating positive stakeholder relations, and the ability of managers to have open communication to encourage trust between mangers and the community.

Outreach is an effective strategy for managers to create positive relationships with community stakeholders, include collaborating with the public, government agencies, NGOs, and private entities to represent their multiple interests (Bruce, 2005). Furthermore, it is beneficial to the manager to participate in collaborative action to achieve agency goals, as stakeholder participation will increase trust between partners and agency managers (Englefield et al, 2019), and will create opportunities for education to inform and encourage discussion between stakeholders and management (Lauber et al, 2012). The literature provides overwhelming support that participatory processes involving multiple perspectives are useful for: achieving multifaceted goals (O'Connor et al, 2019), discovering the social values of participants (Miller & Nadeau, 2016), informing decision making in a more equitable way (Armatas et al, 2018), creating a structured systems for individual participation (Hoffman, 2020), decreasing misunderstanding between land managers and stakeholders (Kilgore & Snyder, 2016), uncovering participants' perspectives (Lauber et al, 2012; Stidham & Simon-Brown, 2010), reducing conflict, and supporting decisions with a backbone of legitimacy and democracy (Raitio, 2012). Support for stakeholder engagement, including community outreach, cannot be denied. O'Connor (2019) indicates that one of the techniques for meaningful community participation is clear communication from landowners while Lauber et al (2012) describe one way to participate in stakeholder engagement is through strategic planning. More authoritarian top-down approaches are not recommended as stakeholder groups can be diverse, representing a variety of values (Lauber et al, 2012), additionally unfavorable management discussions are

difficult to implement (Stidham & Simon-Brown, 2010), and stakeholder participation is seen as a way to build trust between agencies and participants that can lead to significate outcomes (Miller & Nadeau, 2020; Stern, 2006).

The literature reveals that one of the techniques for meaningful community participation is clear communication from land managers, where stakeholders are exchanging information with managers (O'Connor et al, 2019). O'Connor et al state that "public participation or public engagement with science (PES) is also a model of science communication" (2019, p.2). In their study O'Connor et al (2019) found that interactive communication prompt "cognitive processing and learning" (p. 4). Perhaps one of the most interesting findings of their research was that a dialogue between engaged participants (peer to peer communication), motivated some of the participants to "critically engage with content, who may not otherwise have done so" (p. 4). This study also found that decisions-makers valuing participant input tended to legitimize decisions, created support for management decisions, and meaningfully engagement, and that the outcomes of such communication was beneficial (O'Connor et al, 2019).

While O'Connor et al (2019) found that meaningful communication was beneficial to land managers, Chiapella, Nielsen-Pincus and Strecker (2018) found that land policies and specific federal wilderness acts can have vague language causing conflict and confusion for users of that management area. Through their research Chiapella et al (2018) also discovered that the lack of communication from managers to park visitors has left the feelings and perceptions of park visitors unknown (2018). "In national parks, visitor perspectives are important, as parks strive to maintain management practices that incorporate the needs and desires of visitors for their public lands" (Chiapella, 2018, p. 170). Raitio (2013) indicates that while clear communication may not resolve all conflicts for participants, the way the public is addressed can

help promote trust between participants and managers. The literature is clear: when managers value the feelings, attitudes and perspective of forest and park visitors, conflict between land managers and participants may be reduced (Referowski-Chodak, 2019). Further, one method to engage park visitors and stakeholders in a meaningful way is through two-way dialogue and information exchange, which will help to build trust between managers and engaged participants (Chiapella, 2018). Consequently, in the event communication and public participation are lacking, the community may have misunderstandings regarding management plans and outcomes, which can create conflict between land managers and stakeholders (O'Connor et al, 2019). Therefore, the purpose of this research is to examine the outreach currently practiced at university forests, specifically this research will examine how outreach is defined at nine university forests, what current evidence-based outreach are being practiced at those forests and what perceived benefits are achieved through their outreach efforts.

BACKGROUND AND CASE STUDY

Clemson College began in 1889 at the bequest of Thomas Green Clemson, with the federally passed Morrill Act and later Hatch Act creating a land grant university. (Clemson.edu, 2022) In total, there are 50 land grant universities in the United States. Land grant universities were created by the U.S. Congress to provide a large segment of the population with an education related to their daily lives, specifically the agricultural, mechanical, and business education needed in an agrarian economy (McDowell, 2003). Many of these land grant universities have a forest used for research, teaching and demonstration. Some of these forests are adjacent to the university, some area short distance, and others are a day's drive. Most of the forests are in rural areas embedded within a community of neighbors.

The CEF was initially nearly 30,000 acres of worn-out farmland. But after the creation of Lake Hartwell by the Army Corp of Engineers in the 1950's, the size of the CEF has been a consistent 17,500 acres since (Clemson.edu, 2022). Within and surrounding the forest are neighborhoods, schools, Clemson University, commerce, and Lake Hartwell. The forest used for many recreation activities, educational purposes and timber harvesting (Clemson.edu, 2022). The CEF is a member of the American Tree Farm System and certified under the Sustainable Forest Initiative (Clemson.edu, 2022), and is a working forest which means it is actively managed to generate revenue by harvesting sustainably produced timber. It was established with the prime directive "to be a well-managed, self-sustaining, ecologically healthy, living laboratory, classroom and recreational resource for the benefit of the university, commerce and citizenry of South Carolina. The forest is managed strictly for perpetual sustained or improved yield of these products." (Clesmon.edu, 2022). Timber harvests are often in unseen or remote parts of the forest, however, in July of 2020 a 34-acre tract of loblolly pine was harvested directly adjacent to

a local middle school (Figure 1) in a highly visible corridor using a clearcut method, typical for loblolly pine forestry. Since the harvest of these trees, many in the community have expressed concern about the clear-cut method used to harvest, and frustration at the lack of outreach and communication from forest management regarding why the trees needed to be harvested. The trees harvested were planted over 70 years ago for the sole purpose of being harvested. For commercial harvesting purposes, loblolly pines are typically harvested anywhere from 25 to 40 years of age (Davis et al., 2017). These trees were in a state of declining economic value as they had begun to die and fall. Previously, this stand of trees had not been harvested as it is in a high visibility corridor and forest managers were concerned that such a harvest would likely be a point of contention with the local community. Floress et al (2019) suggests that when citizens see tree stands being harvested, they become concerned of what might happen after the trees are cut, and that a lack of outreach and education with the community regarding harvest management decisions can cause stakeholders to have misunderstanding and can create conflict between the two groups. If the goal is to be a "benefit to the citizenry of South Carolina" as the CEF mission states, then the model of outreach and education could be used to reduce misunderstandings. These efforts will strengthen the level of trust (Stern, 2006), create a system of communication between land managers and local stakeholders, and to lessen misunderstandings that arise throughout the process (O'Connor et al, 2019).

Through this research, we have examined the outreach employed by the CEF as a specific site, and as a system. We also examined outreach efforts from eight other university forest systems in the hope that we may understand how outreach is defined broadly, what the evidence-based practices of outreach are among university forest managers, and perceived benefits to utilizing effective outreach techniques. This multi-scale approach allows for understandings and

questions rooted in experience with outreach needs and expands out to the system at large and then to the practice in similar systems (Mandarano, 2015).

Early inquiry data via informal conversations with key stakeholders at two local schools, and members of the public, had revealed misunderstanding about management decisions to harvest the tract of forest previously mentioned adjacent to the schools. They are also uncertain of the outcome of such plans, as they have no knowledge regarding what harvesting means, what might come after the harvest is over and why it is necessary. O'Connor et al (2019) would suggest that through participatory outreach processes where managers are clearly communicating in open dialogue about management decisions with stakeholders, their goals of harvesting can be achieved, and conflict may be minimized. Trust between the CEF manager and the local community can be built through such a process (Miller & Nadeau, 2020).

PURPOSE OF RESEARCH

The purpose of this research is to examine university forest outreach practices generally and examine outreach through the lens of a single university forest. Practices from many forests will allow for an understanding of how information is exchanged from university forests to the surrounding community, and the examination of a single forest event, a clear-cut harvest, will allow the intrinsic focus needed to identify information exchange stakeholders. It is often the case that transformational events, such as a clear-cut harvest, causing a change to a system, which may create conditions for misunderstanding and uncertainties. These can surface more readily when there is a lack of clarity and understanding. A timber harvest is a way to examine these threads to look at the potential for outreach to mitigate future misunderstanding and grow the practice of outreach to model evidence and evidence-based outreach as dialog practice. The aim of this research is to identify common themes in university forest's outreach, current evidence-based outreach activities, identify a method for creating a dialogue through outreach, and create a conversation about the evolution of information exchange. Specifically, we would like to address the following research questions:

1.   How is outreach defined at a university forest?

2.   What evidence-based outreach is currently practiced and how do they affect university forests?

3.   What outcomes can be identified through the use of these evidence-based outreach activities in a university forest setting?

Figure 3: Research Objectives

Aim	Activity
Identify common themes in university forest outreach	Conduct informal interviews with university forest managers and experts in the field
Analysis of current outreach	Data collection and analysis utilizing literature and secondary data
Distinguish methods for creating dialogue through outreach	Recognize evidence-based practices and document strategies
Create a conversation about information exchange as a form of outreach	Invite key stakeholders to the table in order to open a participatory process
Document all lessoned learned through this research	Perform an in-depth qualitative study to categorize all themes

Chapter 2

METHODS

A qualitative approach utilizing both primary and secondary data was chosen for this study which can help explain the underlying reasoning, attitudes and preferences of interview participants (Maxwell, 2013). The sample size interviewed was eleven, which included 9 university forests and 2 experts in the field. The university forests interviewed were based on a willingness to participate after email solicitation. Interviewees were selected based on their leadership / management position, knowledge of outreach activities, or proximity to CEF harvesting activities. Figure 5 maps the nine university forests used for primary and secondary data collection.

Figure 4. Map of University Forests Examined (n = 9)
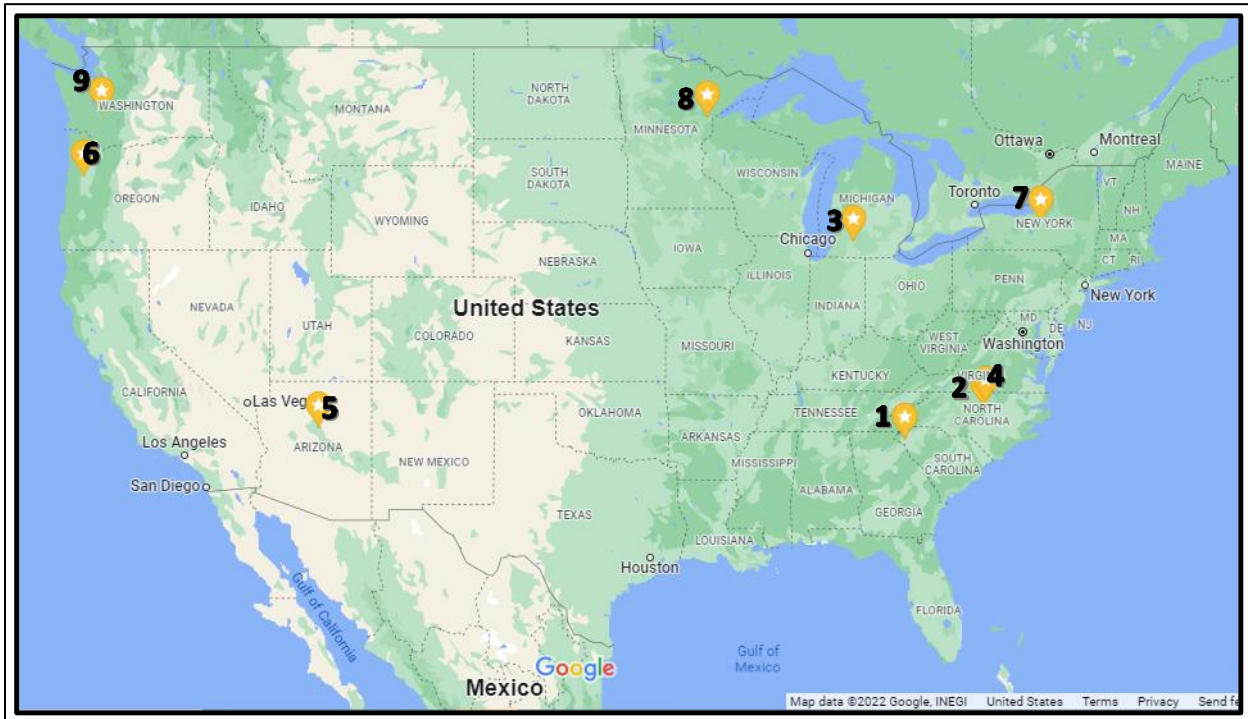
	University Name	Primary Data (Interview)	Secondary Data (Website)
1	Clemson University	X	X
2	Duke University	X	X
3	Michigan State University	X	X
4	North Carolina State University	X	X
5	Northern Arizona University	X	X
6	Oregon State University	X	X
7	The State University of New York (SUNY)	X	X
8	University of Minnesota	X	X
9	University of Washington	X	X

This study used a multi-scale case study framework (Figure 4) to examine an event while it is unfolding (the harvesting of 34-acres), the system surrounding the event (the CEF), and the network to which the event is a part (other university forests; Yin, 2009). The multi-scale case study framework was used to understand outreach in a university forest at the particular scale of a single forest and all the way out to other university forests for context, and to develop an understanding of the nuances of outreach in a university forest system (Mandarano, (2015).

Figure 5. Multiscale Framework of Outreach Study (N = 11)

In this study we examined the outreach currently being conducted at the CEF and eight other university forests to better understand outreach and the role it plays in the management of a university forest system.

Data Collection

Data collection occurred in a multi-step process which included factfinding, eleven semi-structured interviews and secondary data gathering from nine university forests websites. Initial factfinding produced artifacts, notes and an abundance of literature which was sorted, organized and stored in spreadsheets. The early factfinding process was part of an undergraduate school project. The undergraduate project was designed in collaboration with the CEF forest manager as an outreach and fact-finding effort to understand the local response and perceptions of the planned 34-acre harvest across from the local middle school. The undergraduate project initiated meetings with local school representatives which produced questions and areas of further study

which gave direction and opened communication lines with local stakeholders. Notes were taken from these first conversations and were analyzed to discover themes. It became clear through these early conversations were research needed to be focused, outreach. The questions generated through initial factfinding was the foundation for the literature review which provided a framework to stabilize ideas and solidify study intent. These findings also informed later interview questions.

Later, eleven semi-structured interviews were conducted between January 2022 and February 2022, by phone, zoom and email with forest representatives and experts in the field. Some of the interviews were recorded and transcribed, and notes were generated throughout the interview process. Interviews on average were 40 minutes in length and were carried out individually. In total nine forest representatives and 2 experts in the field were interviewed. Interview participants were staff from the CEF, representatives from eight other university forests mapped in Figure 5, and experts in the field of forestry and recreation. All interviewees were initially contact via email solicitation. The primary objective of each interview was to gain specific knowledge regarding current evidence-based practices being used, expert opinion, and perceptions. Open-ended questions were prepared in advance to ensure each interviewee received the same base questions and were designed to identify past and current outreach activities of university forests, the attitudes and feelings toward recent harvest activities in the CEF and identify any potential outreach outcomes. Notes and transcriptions were analyzed, and themes were identified. Many themes agreed with each other and built upon ideas of evidence-based practices. All like-minded data was organized into categories. Throughout the interview process many of the participants knew of each other and had contact with each other separate from the interview process.

The final step of data collection was gathering secondary data. This was collected using university forest website, external links provided by through the university forest website and partner organization websites. This data was analyzed to have a greater understanding of the forest land mass, management practices, allow for conclusions to be drawn about specific partnership groups, recreation activities, and activities the forest organizes as outreach opportunities. Secondary data was accumulated and organized into spreadsheets. This organizational system made comparison easier and hosted data from multiple sources in one location. Figure 6 below illustrates how this study was initiated, developed and progressed, and is described as a methods map.

Figure 6. Methods Map
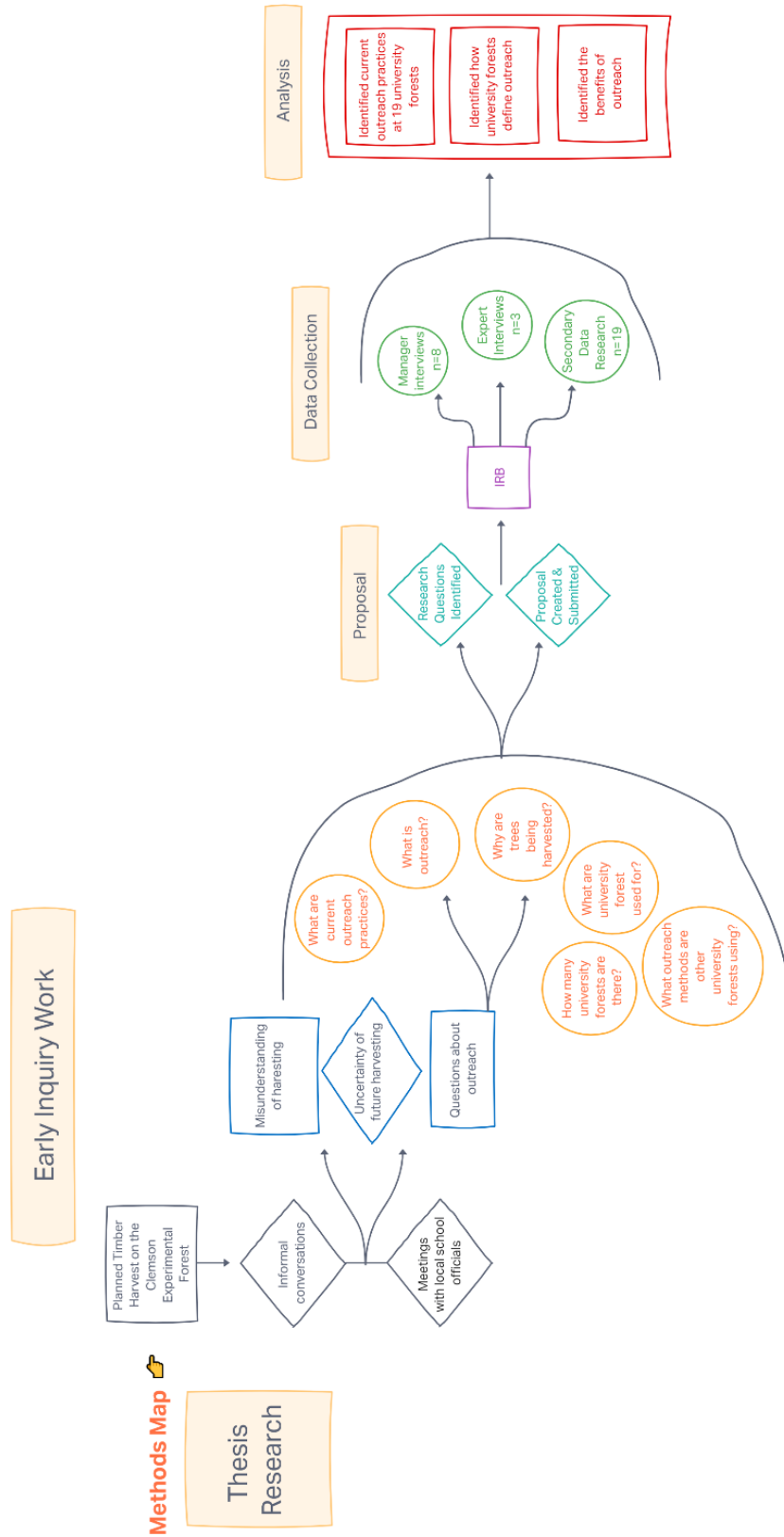
Data Analysis

This multi-scale case study was analyzed from the inside out; we first analyzed data for the specific harvest site in the CEF, then data related to the CEF as a system, and finally, the data from university forest representatives regarding the practice of outreach and the perceived importance and role of it was analyzed from a micro scale to a macro scale. Each forest was unto itself different from every other, so to generalize about all university forests could be considered a threat to validity. As a result, the current outreach practices of university forests are reported as evidence-base practices. This analysis of the multi-step data collection has produced a working definition of university forest outreach, categories of outreach connectivity, current evidence-based practices among university forests, and benefits / outcomes of effective outreach.

Chapter 3

RESULTS

What is outreach in a university forest?

The question of what outreach is developed early in the factfinding process. Many likeminded definitions have summarized outreach as an educational opportunity (Baumgart-Getz, Prokopy & Floress 2012; Bruns et al, 2003; Lutter et al, 2018; Jacobson et al. 2017). While this research study has identified education as a category of outreach practices, current mangers of university forest reveal that outreach is more complex. Through this study a working definition of outreach has been defined as any way of connecting to the community, stakeholders and participants of your forest. This was discovered as the common theme among forest managers, that outreach is a connection made with forest participants. This definition also gives understand to the underlying goal and why outreach is practiced, in order to connect. When interviewees were asked what outreach means at their forests, these were some responses:

"Communication and connection to tell what the forest does."

"Outreach shares the value of resources as it benefits our lives."

"Gets people outside."

"Allows me to invite people to the table."

"Tells of this space as a community asset."

"Outreach is a way of protecting the forest from the inside and outside."

"Outreach is a way to be part of the community. To go beyond the gate. To develop deeper relationships with people."

"If you're not doing outreach you're missing developmental opportunities, missing out on donations and you're missing out on connections."

"Providing outreach is a collaboration to experience nature."

The forest representatives interviewed for this study all expressed how outreach was the method for connecting. This connectivity became the theme and definition of what outreach is and why it occurs.

Connectivity

Under this definition through data collection many activities were acknowledged as outreach being practiced in order to facilitate connectedness. These activities have been organized into categories of how forests connect, connection categories (Figure 7). Figure 7 organizes the connection categories that emerged through interviews and secondary data collection, and lists examples of specific activities university forests are engaged in.

Figure 7. Connection Categories (organized by alphabetical order)

How do forests connect?	
Connection Category	**Activity Example**
Education	➢ Availability of rental space for teaching (conferences, classes) ➢ Bird watching ➢ Elementary school programs and school tours ➢ Faculty and student research ➢ Forest ranger school ➢ Forestry school ➢ Internships ➢ Interpretive talks, programs, and group tours (non-school related) ➢ University classes and teaching at the university level
Engagement / Events	➢ Annual Festivals ➢ Availability of cabins and lodging for visitation ➢ Dining / food service availability ➢ Forest days / visitor days ➢ Plant sales ➢ Sale of various permits, including: hunting, boating, horseback riding, day use, camping, and fishing permits,
None	➢ Lack of funding / Lack of staffing
Messaging	➢ Communication / PR ➢ Interpretive content ➢ How information is presented ➢ Newsletters: could include stories, research, updates, education, events ➢ Posting: updates, hunting activities, harvesting activities, research information and forest closers ➢ Social media content ➢ Website information
Partnerships	➢ "Friends of ..." groups ➢ Forest membership program ➢ Government (Local, state and federal) ➢ Non-profits ➢ Schools ➢ Tribes
Planning	➢ Advisory committee meetings ➢ Communication plan ➢ Recreation management plan ➢ Strategic plan ➢ Timber management plan
Visuals	➢ Accessibility ➢ Aesthetics ➢ Parking lots ➢ Signage - clearly communicated kiosks and signs ➢ Staff presents / presentation

Through the analysis process some activities came up more frequently, and during the interview process more emphasis was placed on the importance and benefits of such activities. Four activities emerged as the most common connection activities among university forests, those included, clear communication, signage, engagement and planning.

Clear communication was acknowledged by many interviewees and throughout the collected data as the single most important way to achieve outreach. The ways in which each forest facilitated their communication was different. Some stressed the significance of clear communication through their website or social media. For example, one study participant stated:

"What you post and how much you say [on social media] can make a huge difference."

Yet another interviewee described their online presence as:

"The key word is social; it's not just a website."

Clear communication is at the utmost importance for university forests, as other interviewees described their new communication initiatives:

"I've developed a communications plan to be able to share forest management activities…"

"Recently we have been working on improving our webpages to make the information about each property more readily accessible."

 And yet another went on to described how after identifying communication as a lead objective in their strategic plan they hired a communication specialist to guide their web and social media presences. Repeatedly communication was emphasized as the key connection point for forest participants and stakeholders.

Another example of communication that was mentioned numerous times was signage within the forest (e.g., kiosks, update bullets, interpretive signs, or trail markers). Signage was stated as being important because it gave forest visitors a sense of place, of knowing where they were, of providing safety, of representing a welcoming "face" at a trailhead or parking lot, a way to inform visitors of current forest activities like harvesting, hunting or management decisions, and as a means of invite visitors into the space. Throughout the interview process signage was one of the most frequently mentioned ways a forest can do outreach.

After communication and signage, the next most frequently described outreach activity was engaging stakeholders and participants. Engagement was described in numerous ways and was said to be achieved through educational programing, events, online forest tours, or in-person forest tours, just to name a few. Engaging was described by interviewees as a way to invite visitors to the forest, connect to the forest community, and educated participants about forest activities. While not all the university forests interviewed participate in programming opportunities, those that do participant said the benefits of these activities greatly outweighed the cost of producing them. Some interviewees stated the following regarding engagement:

"You've got to reach out to your neighbors."

"We connect people to places."

"This is a collaboration to experience nature."

"We hold a threshold to experience something."

Each interviewee would describe how they engage forest participants differently, but those that participated in differing engagement activities would all emphasize the reason they provided these activities, which are for the long-term benefit of the forest.

The final connection activity that was the most frequently mentioned activity among university forest was *planning. strategic plans, recreation management plans, timber management plans, master plans, and communication plans* were all mentioned as a method to facilitate outreach. While some may not consider planning as an outreach activity, this study has indicated it to be of great significance. Through these planning processes university forests are able to consider the needs of stakeholders and forest participants, strategize for the future, and come to understanding about the good of the forest. When asked about planning, interviewees shared these responses:

> *"We need to be strategic in our planning. What is it we value?"*

> *"Planning can be a gateway that promotes advocacy."*

> *"Part of good outreach is being strategic. You have to have a long-term desired result."*

> *"We have to look at why the land is here in the first place and plan accordingly."*

> *"What is our mission? Are we living up to that?"*

Data analysis of planning revealed it to be a frequently used method to facilitate outreach, and an opportunity for university forest to connect to the original intend of their land and strategize about how best to steward it.

Perceived Benefits – what do you get from outreach?

The benefits of outreach are widely documented in the literature, and this research study has given a better understand to the benefits of outreach as it pertains to a university forest. The five perceived benefits of outreach that were reiterated throughout the analysis were an increase in funding, advocacy, partnerships understanding, and influence.

Funding

The financial side of a university forest is a tricky subject. Some forests are self-sustaining and rely on their own earnings to exist, while others are funded by grants, university budges, endowments or even donations, to name a few. The complicated topic of how university forests are funded was not covered in this research, however a common theme emerged through this study that university forests are often in need of funding. In fact, some forests that were examined did not participant in outreach at all because of a lack of funding or staffing shortages. Thus, it is no surprise that a forest may be motivated to practice outreach activities if the result is additional funding. For university forests, outreach is a major opportunity to secure funding. Some examples of how this is achieved is through fundraising programs, membership programs, merchandise sales, rental fees, permit fees, parking fees, friends' groups, naming rights, sponsorship opportunities, and program fees.

Advocacy

Advocacy happens for a university forest when participants and stakeholders show support or recommend the forest, its management decisions, or its research. Many who were interviewed cited that doing outreach was a way to increase their advocacy base. When asked why they participated in outreach one interviewee stated:

"To raise a village of people who love and appreciate the forest."

When discussing why advocacy was an essential benefit of outreach another interviewee stated:

"The more people who use [the forest] the safer it is. That's more advocates for natural resource use."

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These "villages" of supporters act as an army to help fight university forest causes and help achieve the mission of each forest. These advocates also help by volunteering, donating, sharing the message of the forest and bring others to experience the forest for themselves, adding to the advocate pool. This snowball effect helps to ensure that university forests have generations of stewards that share a common goal of protecting this valuable resource.

Partnerships

The partnerships of university forests are widespread in some instances and bring many players to the table. For example, some forests engage in partnerships on a local level with their neighbors and community, and some participate on a larger scale involving federal and state government agencies, and still some seek partnerships with different businesses, corporations, tribal entities or nonprofits. No matter the different types of partnerships, university forests participating in partnerships all cited outreach as the goal. Partnerships were described as having the ability to: bridge the gap of knowledge or expertise, provide for more funding opportunities, be a cost savings for certain tasks, create business opportunities, provide support and advocacy, provided new perception or bring new awareness, or have the potential to provide tax benefits.

Understanding

Creating a common understanding of why and how a university forest is managed was a shared theme relate to the perceived benefits of participating in outreach. Through education, interpretation, providing facilities, internships, events, signage, websites, social media, or utilizing any of the connecting activities a forest may participates in, a university forest seeks to share what they are doing and why. This goal of providing understanding is at the forefront of this research. So many of the activities a forest participates in, whether it is harvesting, research, recreation management or even some partnerships, are questioned by stakeholders, community

members, neighbors, and even some at the university. Not because these activities are not in line with the mission of their forest, but because there is uncertainty about what these activities mean and why they are done. The literature examined showed that uncertainty and misunderstandings can cause conflict between land managers and the public (Kilgore & Snyder, 2016), but this study has discovered that through outreach public understanding can be achieved. When asked about how outreach reduces conflict one interviewee stated it this way:

> *"[The public] want to be heard, but they also want to hear from you. They want to understand what's going on."*

Easing uncertainty, lessening misunderstandings, and creating a system of transparency were all expressed to be outcomes of outreach, which creates a common understanding of knowledge between university forests and the community around them.

Influence

In our "influencer" society, the word influence can seem like a bad thing, or even that there is a negative connotation. However, interviews with university forest representatives suggests that there is a benefit to having influence. For a university forest to have an effect on a place, or, in some cases, be the affect, a forest must influence the community around it. Some interviewees expressed that the forest needs for people to see beyond the green and understand how the forest is affecting more than just the university, the neighborhood or even the state where it resides. A university forest, like all natural places, can influence our water supply, our air quality, and our quality of life. A university forest can completely change the landscape; for example, when one goes from a treed to a clear-cut area, the influence of that transition can change how people connect to it. One interviewee described their university forest as not just trees at all, but as living laboratories, ecosystems, multicultural habitats, spaces of life and

oxygen that provide respite and calm that is not just here for human gratification and use. These are described in the literature as ecosystem services (Pascual et al, 2017) and are often overlooked and not mentioned. But many interviewees did understand and acknowledge these benefits as a reason to manage their university forest well. One interviewee put it this way:

> *"It's unseen what the forest does, clean air, clean water, carbon mitigation, providing needed timber that we all use, these are all eco system services. It's having a wooded area in the middle of a city, just the aesthetics of being a woodland. What people don't understand the forest is doing for them, they just don't know it."*

This research has emphasized the importance of a university forest's influence on the community around them. And while this knowledge may not be commonly understood, it is none the less important. The qualitative research conducted through this study would suggest that outreach is effective for the sustainability of university forest, and an evidence-best practice among US university forests.

What we learned

The implications of this research suggest that when university forests are faced with implementing management activities which have the potential for misunderstanding and concern, outreach can be used as a way to reduce tension. And further associations could be made at sites in the CEF where harvesting is being carried out, like the 34-acres site previously mentioned, educational outreach could have been utilized to lessen questions and concern over clearcut harvesting methods. This research study sought to understand what outreach is, but in the process discovered how outreach may affect a university forest. This study would suggest that outreach may be used for the purpose of minimizing misunderstanding, concern and even conflict when university forests are implementing contentious management activities, like the harvested

34-acres in the CEF. The forest representatives interviewed suggested that outreach, as they defined it, can be a way to connect to the community around their university forest, and can be beneficial when effectively facilitated.

DISCUSSION

This research examined a case study of a single timber harvest at the CEF. Through this case we were able to focus questions related to the practice of outreach and narrow down to what outreach is generally and what methods are used at university forests to facilitate it. By examining the harvest of 34-acres at the CEF we were able to identify concerns with this timber harvest. One concern that emerged was the lack of information from the CEF to the local community about harvesting generally. In looking at outreach at the CEF, and generally at other university forests we were able to identify what evidence-based outreach practices are being used and what their outcomes can be. The literature had revealed that the use of outreach may increasing community knowledge and engagement (O'Connor et al, 2019), lessen misunderstandings that may arise from a lack of communication (Chiapella et al, 2018; Referowski-Chodak, 2019), and build trust between managers and participants (Englefield et al, 2019; Stern, 2006). This research utilizing a multi-scale case study uncovered how outreach is connecting with community, neighbors, stakeholders and forest participants, and currently the four most practiced connection activities identified to facilitate effective outreach within a university forest are clear communication, signage, engagement and planning. This study has also discovered that outreach has common perceived benefits across many university forest systems. We have learned that the five common perceived benefits are an increase funding, advocacy, partnerships, understanding, and influence. This research has determined that outreach may be an effective strategy for managers to create positive relationships through community collaboration, by partnering with forest participants, government agencies, NGOs, and private businesses, in order to achieve the forest's mission. These partnerships increase stakeholder participation and may increase trust between partners and university forests (Englefield et al, 2019). The literature examined provides overwhelming support that participatory processes

involving multiple perspectives are useful for: achieving multifaceted goals (O'Connor et al, 2019), discovering the social values of participants (Miller & Nadeau, 2016), informing decision making in a more equitable way (Armatas et al, 2018), creating a structured systems for individual participation (Hoffman, 2020), decreasing misunderstanding between land managers and stakeholders (Kilgore & Snyder, 2016), uncovering participants' perspectives (Lauber, 2012; Stidham & Simon-Brown, 2010), reducing conflict, and supporting decisions with a backbone of legitimacy and democracy (Raitio, 2012).

Countless articles, books and journals have been published that tout the benefits or teach outreach and education skills. Jacobson, McDuff and Monroe (2017) write that, "Effective outreach and education are essential for promoting conservation policy, creating knowledgeable citizens, changing people's behaviors, gathering funds, and recruiting volunteers." (p. 6). There is a significate amount of support for outreach, that includes using clear communication, engagement, signage and planning as part of the strategic planning process. The literature has cited what many university forests confirmed through this study that unfavorable or misunderstood management discussions are difficult to implement (Stidham & Simon-Brown, 2010) as stakeholders may not trust or understand the management processes or implementation. However, outreach utilizing clear communication may provide education and understand, building trust between university forests and participants that may lead to beneficial outcomes (Miller & Nadeau, 2020). The importance of trust cannot be understated. Stern (2006) writes that the trustworthiness of land managers is a predictor to opposition of management decisions from community members.

Additionally, the benefit of having influence and increasing advocacy is one that should not be taken for granted. Outreach has the ability to recruit advocates and volunteers, which may

help sustain the influence university forests have over time (Lutter et al, 2018). It is the advocates that are affected by forest closers, management decisions, timber harvesting, and programming, or lack of programming. These same people can be the voice of university forests, but the messaging they receive from university forest management influences what they say about the forest. What many forest participants do not know or understand is that they receive many benefits from a university forest which may not be quantifiable but are no less important (King et al, 2015). The intrinsic benefits university forests have is also the way it influences everyone and everything around it. The literature documents the benefits of forests as ecosystem services (Pascual et al, 2017), but without effective interpretation and educational outreach about these services, there is a lack of understanding (Kilgore & Snyder, 2016).

CONCLUSION

Through this research we have found how university forest define outreach, which is to connect to people through their forests. These are not just the woods we drive by every day. They are spaces for research, education, classrooms, a free space for free thinking, a recreation opportunity for physical and mental health, a workplace for some but a respite for all who seek to participate with them. Outreach is a tool to connect the community around each university forest and to reach those that connect via technology from afar. A university forest is not a silo unto itself that cannot interact with those that seek to participant with it. One interviewee said:

> *"It's not, 'if we build it, they will come'. It's, they're here, now what do we do with them."*

People choose to participate with university forests. But how do university forests choose to participate with people? Outreach is the way. Through this study we have learned that connectional activities can facilitate effective outreach. By utilizing clear communication, signage, engagement and planning a university forest might increase advocacy, funding, influence, partnerships and understanding.

Limitations

There were many limitations to this study, particularly time constraints regarding delays in IRB approval and needing to finish the research within a specific time frame. This study was also directly impacted by the COVID19 pandemic which impacted our ability to conduct the specific research that was initially outlined.

Another limitation to this study is that not all the forest examined are created equal. Some are strictly research forests, some are open to recreation, some are not. Some forests have sophisticate interpretive centers with rental facilities, and some have rental cabins or a lodge. There are many different kinds of forests in this study and that makes comparison difficult and, in some cases, unfair. The differences of each forest were also evident in their websites. The secondary data for this study was collected from each university forest website and each website has high variability. Some websites have an abundance of information in terms of quality and quantity, and some do not. There is a great disparity to the information from one to another.

Additionally, through the analysis processes this study discovered that each forest is managed under a different school, college, department or was self-governing. The differing methodologies of managing each university forest resulted in diverse management directives, forest specialties, research, recreation opportunities and facilities. All of these differences are pointed out to knowledge that not all the forest examined are equal but are all considered university forests.

Future Research

There is still more to learn about outreach in the context of university forests. Future studies could focus on interviewing forest participants and stakeholders to see how they define outreach and how they perceive outreach. Additionally, an in-depth study could be initiated to create a thorough catalog of university forest systems that organizes each forest based on the disparities listed above: website, facilities, acreage, recreational opportunities, etc., in order to compare forests that are more alike. Currently there is no database of university forests, or information about them all in one place. Many opportunities for future research exist that would allow for a greater understanding of this topic.

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