EXPLORING STUDENT IMPRESSIONS OF CONSERVATION PHOTOGRAPHS: A POTENTIAL STRATEGY FOR CLASSROOM ENVIRONMENTAL EDUCATION

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ABSTRACT

Little research has been conducted on student impressions of conservation photographs, or if viewing photographs can motivate students to environmental action. This study examined responses of sixth-graders using a qualitative grounded theory-based written questionnaire. Students examined six conservation photographs, wrote their impressions of the photographs, and answered if the photographs prompted them to action. Significant response themes included descriptions of nature, thoughts on society and community, and creating narratives. Significant responses associated with action were helping animals, going outside, and helping the environment. Findings of this study indicated respondents were potentially motivated to understanding the impact conservation photographs can have on students and connections between goals of conservation photography and environmental education. Results of this study could benefit educators in using conservation photographs in the classroom as tools for connecting students to the environment, possibly inspiring them to environmental action.

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CHAPTER 1.

INTRODUCTION

Public concern for environmental issues is on the rise, and it is becoming increasingly important to find ways for people to connect to the environment and seek solutions (Sobel, 1996; Ward, 2008). In some cases, the more people feel a connection to the environment, the more likely they are to exhibit pro-environmental behavior (Kollmuss & Agyeman, 2002). Young people have been identified as critical to finding solutions to today's environmental issues (Kola-Olusanya, 2008; LaFromboise & Marivic, 2003). Yet, some professionals (Louv, 2005; Sobel, 2008; Twenge, Campbell & Freeman, 2012) have suggested that concern for the environment is diminishing in young people.

Studies suggest promoting conservation through art may reach a broader audience than other traditional education methods (Capra, 1994; Celedonia & Rosenthal, 2012; Kellen-Taylor, 1998; Jacobson, McDuff, & Monroe, 2007; Seppänen & Väliverronen, 2003). Conservation photography seeks to promote conservation through art (Farnsworth, 2011; Mittermeir, 2005; Ward, 2008). By promoting conservation through art, conservation photography seeks to help raise awareness about environmental issues and empower people to take pro-environmental action (Mittermeir, 2005; Ward, 2008). Similarly, environmental education aims to increase public awareness and knowledge about environmental issues and motivate behavioral change to action (United States Environmental Protection Agency, 2016). Both environmental education and conservation photography share a similar goal; to increases public awareness and knowledge about environmental issues to better equip people to seek solutions. In addition, environmental education and conservation photography have an ultimate goal of encouraging people to take responsible action for environmental protection.

There is a growing desire for student involvement in quality environmental education experiences, yet questions still exist about the most effective teaching strategies for that involvement (Celedonia & Rosenthal, 2012). Quality environmental education can help equip students with the necessary knowledge, skills, and commitment for understanding the environment and their place in it (Archie & McCrea, 1996). In exploring solutions to a lack of student involvement, the idea of building connections to the environment through art has gained attention (Celedonia & Rosenthal, 2012; Kellen-Taylor, 1998; Jacobson et al., 2007; Mittermeir, 2005). As an artistic outlet, conservation photography has emerged at a time when scientists and educators are realizing the power of art in creating connections between people and the environment (Celedonia & Rosenthal, 2012; Mittermeir, 2005). The profession of conservation photography provides an avenue for environmental professionals and conservation-minded photographers to engage people with the environment (Farnsworth, 2011; Mittermeier, 2005; Ward, 2008). As students' connection to the environment continues to decline (Charles & Louv, 2009), better ways to connect students to the environment are being continually evaluated.

Multiple studies have asserted the capability of art to effectively engage students with the environment (Celedonia & Rosenthal, 2012; Farnsworth, 2011; Kellen-Taylor, 1998; Udall Foundation, 1992). The act of creating conservation photographs, as in physically taking photographs, has also been shown to positively engage students with the environment (Udall Foundation, 1992). However, not all students have the opportunity or ability to take photographs. Therefore, another form on interaction with conservation photographs could be

used to engage students with the environment. Sharing conservation photographs with students in the classroom, exploring their resulting impressions, and gauging the potential for photographs to be used in classroom environmental education are areas of inquiry yet to be explored.

Purpose of Study

Multiple studies have validated the capability of art in helping connect students to the environment (Celedonia & Rosenthal, 2012; Farnsworth, 2011; Kellen-Taylor, 1998; Udall Foundation, 1992) and the significant place visual media has been shown to hold in young people's lives (Hofferth & Sandberg, 2001; Rideout, Foehr, & Roberts, 2010). However, based on the literature reviewed in this study, a research gap exists regarding the potential impact that viewing conservation photographs can have on students, or the potential outcomes of using conservation photographs in a classroom setting to connect students to the environment. Therefore, the purpose of this study is to explore sixth-grade student impressions of conservation photographs in a classroom setting. The hope is that the resulting data may better inform educators in using conservation photographs as a methodology for promoting connections between students and the environment in a classroom setting and to potentially motivate students toward environmental action.

Research Questions

This study aims to contribute to environmental education literature by describing the impact of conservation photographs on students' impressions of and connection to the environment, and potentially unveiling a new method for motivating students to environmental action. This was accomplished by sharing conservation photographs with students in the classroom, examining their resulting impressions, and gauging the potential for photographs to

be used to connect students to the environment in a classroom. The primary research question guiding this study is: what impressions do sixth-graders have after viewing conservation photographs? The secondary question is: can viewing conservation photographs lead sixthgraders to want to take action based on what they see?

Key Terms

- Environmental education: a subset of education that aids people in becoming environmentally knowledgeable citizens willing to work toward creating an equal balance between quality of life and quality of the environment (Hungerford, Peyton, & Wilke, 1980).
- Conservation photography: photography that promotes conservation (Farnsworth, 2011; Mittermeier, 2005; Ward, 2008).
- Impression: a [thought], feeling, or opinion about something or someone, especially one formed without...substantial evidence (Simpson, 1884).
- Middle school student: an individual in any grade from fifth to ninth (Marcinkowski, Volk, & Hungerford, 1990).
- Grounded theory: a qualitative strategy in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study (Glaser & Strauss, 1967).
- Conservation science: to understand patterns of biodiversity and ecosystem change, pressures that are driving loss or degradation, and what the most effective and efficient responses are, at every scale from local land management to international convention (Salafsky, Margoluis, Redford & Robinson, 2002).
- Biophilia: human affiliation with life and lifelike processes (Kahn, 1997).

CHAPTER 2.

LITERATURE REVIEW

This literature review will present a synthesized understanding of what current research says regarding the identification of middle school students as a target group for effective environmental education strategies. The review will then discuss why middle school students are a key group to examine with respect to how visual media can aid in environmental connectedness. This review will also examine how art helps promote connections between students and the environment, the field of conservation photography, and how conservation photographs connect to environmental education. Finally, this review will examine existing research in the field of conservation photography and where gaps in the literature still exist.

Environmental Education and Middle School Students

Environmental education is an area of education that aids people in becoming environmentally knowledgeable citizens willing to work toward creating an equal balance between quality of life and quality of the environment (Hungerford et al., 1980). Environmental education increases public awareness and knowledge about environmental issues or problems (United States EPA, 2016). In increasing awareness and knowledge, environmental education provides people with the necessary skills to make informed decisions and take responsible action for the benefit of the environment (United States EPA, 2016). Furthermore, environmental education seeks to promote awareness of environmental issues and show pathways to actions that are essential to resolve problems concerning the natural world (Knapp, 2000). Environmental education allows people the opportunity to learn about and explore the environment in hopes that they will begin to make intelligent, informed decisions about how they can care for the natural world (NAAEE, 2010).

Environmental education programs can be developed and implemented for a wide variety of audiences or learners (Ohio EE 2000, 2000). Programs can be formal or non-formal, with traditional or non-traditional audiences (Ham, 1992). They may be conducted by an instructor who is present during the learning activity, or may take place without the physical presence of an instructor (Ohio EE 2000, 2000). Programs may occur in classrooms, meeting rooms, museum galleries, outdoors, in front of a television, or virtually anywhere (Ohio EE 2000, 2000). Some of the more common types of environmental education are teacher-led classes, lectures, workshops and seminars (Ohio EE 2000, 2000). Though much environmental education takes place outside, many people lack opportunities to participate in outdoor environmental education opportunities (Gordon, 2011). While outdoor environmental education has been shown to have many positive benefits, there is a lack of opportunity for it, particularly for middle school youth (Gordon, 2011).

Middle school-aged students are developing into active citizens with the ability to think in abstract terms (Meuth, 2010). This makes middle schoolers an ideal group to engage in conversations about the environment (Meuth, 2010). Regarding environmental education in middle school classrooms, current areas of inquiry have mostly investigated factors contributing to student environmental literacy (Meuth, 2010). Though the impacts of visual and auditory media on children and adolescents are being researched (Hofferth & Sandberg, 2001; Rideout et al., 2010), there appears to be a gap in the literature pertaining to the use of visual media in classroom environmental education.

Media and Learning

Understanding the role of media in young people's lives is important for those concerned with promoting the healthy development of children and adolescents (Rideout et al., 2010). Visual media is one the most powerful forces in young people's lives today (Hofferth & Sandberg, 2001; Rideout et al., 2010). American children ages three to twelve (range containing most middle schoolers) spend, on average, 27% of their time each week watching television (Hofferth & Sandberg, 2001) while children ages eight to eighteen were shown to spend over seven hours on media time (e.g., watching TV, listening to music, using the Internet/computer, playing video games) each day (Rideout et al., 2010). Visual media, like photographs, videos and other visuals, as part of classroom environmental education could present a new pathway to engage middle schoolers in environmental learning.

Making Connections to Nature through Art

There is increasing interest in using art to educate people about nature and their connection to the environment (Capra, 1994; Kellen-Taylor, 1998). Celedonia and Rosenthal (2012) used various art techniques and nature-focused experiences to help participants begin to move outside their comfort zones and make connections between their existence, their behavior, and the well-being of the environment. Visual arts have been shown to potentially affect the perceptions and understandings people have about the environment (Farnsworth, 2011; Mittermeier, 2005). The idea of engaging people with the environment through the creation and viewing of art continues to gain credibility (Celedonia & Rosenthal, 2012; Kellen-Taylor, 1998; Jacobson et al., 2007).

Promoting conservation through art may reach a more diverse audience than other more traditional avenues of education (Capra, 1994; Celedonia & Rosenthal, 2012; Kellen-Taylor, 1998; Jacobson et al., 2007; Seppänen & Väliverronen, 2003). As educators' desire for student involvement in quality environmental education experiences grows (Celedonia & Rosenthal, 2012; Mittermeier, 2005), the best methods for engaging students with the environment are being continually evaluated. A handful of studies have examined the capability of visual arts (painting, drawing, photography) to engage students more effectively with the environment (Celedonia & Rosenthal, 2012; Kellen-Taylor, 1998; Udall Foundation, 1992). One researcher noted, "promoting conservation through the arts may reach a more diverse audience and reach them more successfully by engaging their hearts as well as minds" (Jacobson et al., 2007, p.7). Jacobson et al. (2007) later stated, "if we are going to have a new connection to the environment it will have to happen in individual hearts and souls…the artist can help us fall in love with the earth again." (p. 7).

Conservation Photography

The field of conservation photography has emerged at a time when scientists and educators are realizing the power of art in creating connections between people and the environment (Celedonia & Rosenthal, 2012; Mittermeir, 2005). Conservation photography was only designated as a professional field in 2005 with the founding of the International League of Conservation Photographers by photographer Cristina Mittermeier, during the 8th World Wilderness Congress in Anchorage, Alaska (Ward, 2008). Photographs have been used to connect people to the environment dating back to the 1860's (Ward, 2008) with Carleton Watkin's influential photographs and the creation of Yosemite National Park. Conservation photography aims to create an intersection between the scientific and artistic worlds (Farnsworth, 2011).

The disciplines of conservation science and photography differ substantially when separate (Ward, 2008), but have now been used in combination to create this new interdisciplinary field (Mittermeir, 2005; Ward, 2008). Experiencing photographs has been shown to enhance a person's ability to understand the environment, form emotional ties to the subjects being portrayed, and take appropriate actions towards the subject's protection (Farnsworth, 2011).

Conservation photography, in its simplest definition, is photography that empowers conservation (Farnsworth, 2011; Mittermeier, 2005; Ward, 2008). It is the result of photographic talent combined with environmental understanding and conservation commitment (Mittermeier, 2005). There are important differences between nature photography and conservation photography (Mittermeier, 2005). Nature photographs are often beautiful images of environments that portray a nature in an ideal light (Mittermeier, 2005). Nature photographers most often utilize their photographic skills to highlight beautiful subjects within the natural world, from wildlife to landscapes, as gallery-quality pieces of fine art (Mittermeier, 2005). They create realistic or composite images, showcasing nature in a predominantly appealing way (Mittermeier, 2005).

Conservation photographers, however, not only produce fine-art imagery, but also leverage their art to highlight flora, fauna and ecosystems in need of public attention with the overarching mission of inspiring protection efforts (Mittermeier, 2005; Ward, 2008). Conservation photographs showcase imperiled nature, with the images being put to work for the greater goal of promoting conservation (Mittermeier, 2005). Often, conservation photographs share unpleasant, even graphic images in order to tell a story (Farnsworth, 2011). Conservation photographs tell the story of damaged ecosystems, disappearing cultures, or endangered species; images often far from idyllic or beautiful nature (Farnsworth, 2011). Conservation photographs seek to help connect people to the environment, often through only the medium of the photograph itself (Farnsworth, 2011). Photographs produced by conservation photographers could be tools for educators to use for connecting people to the environment (Farnsworth, 2011).

Connecting Environmental Education and Conservation Photography

Findings of a small-scale study of conservation photojournalists have suggested that conservation photographers distinguish themselves as environmental educators in multiple areas (Farnsworth, 2011). Conservation photographers exhibit an understanding of complex ecological issues in their work and a clear ability to interpret and conceptualize expansive environmental issues (Farnsworth, 2011; Ward, 2008). From their research and collaborations, they hold a collective body of expertise in their respective fields (Farnsworth, 2011). Conservation photographers also show an inclination toward stewardship that highlights both the environmental impacts on and contributions of the communities they photograph (Farnsworth, 2011). In other words, conservation photographers seek to become good stewards of nature by showing how people are both impacting and protecting the environment, in the hopes of ultimately inspiring greater environmental and cultural protection efforts (Farnsworth, 2011).

Photographs first began serving a purpose in the field of conservation in the 1860's and have gained recognition as effective tools in conservation efforts into the twenty-first century (Farnsworth, 2011; Seppänen & Väliverronen, 2013; Ward, 2008). As a profession and useful tool for environmental education, however, conservation photography has only gained acknowledgment in the past few decades (Farnsworth, 2011). Farnsworth (2011) highlighted the educational potential of photographs, concluding that conservation photography can offer a model for increased environmental awareness, resources for student engagement, and new paths for community-based ecological education to take place. Other researchers have continued to assert the need for visually-centered learning in the classroom to further engage people in environmental learning (Mittermeier, 2005; Seppänen & Väliverronen, 2013; Sobel, 1996). The educational potential of photographs to encourage people's connection to the environment has begun to be explored, but more studies are needed to examine their true potential (Farnsworth, 2011).

As educators seek new ways to connect students to the environment (Farnsworth, 2011; Mittermeier, 2005), conservation photographs could become a unique option. Conservationminded photographers worldwide are appealing to and educating students, scientists, policy makers, government officials, lawyers, writers, indigenous leaders, and others to help create local and global conservation solutions (Mittermeier, 2005). People are growing increasingly distant from nature and further relying on visual media for information about the world (Charles & Louv, 2009; Ward, 2008). Because of this, conservation photographs that directly showcase the natural world have a unique opportunity to help connect people to the environment and may help inspire them to take environmental action (Ward, 2008).

Environmental education and conservation photography share similar goals; to increase public awareness and knowledge about environmental issues and encourage people to take

responsible action for environmental protection (Mittermeir, 2005; United States EPA, 2016). Conservation photographers as environmental educators have been shown to exhibit four areas of expertise in teaching: understanding of ecology, interpretation of complex concepts, collaborative knowledge and an aptitude for stewardship (Farnsworth, 2011). This means they have a firm foundation in ecological knowledge, can explain ecological concepts, act as interpreters, and work collaboratively with other educators and photographers to promote stewardship of critical environments through their profession (Farnsworth, 2011). These four themes demonstrate the potential power of photographs produced by these conservation photographers as teaching tools (Farnsworth, 2011). These proficiencies are also largely in line with the NAAEE Guidelines for Excellence in Environmental Education: Guidelines for Learning (K-12) (NAAEE, 2010). When the photographer and the environmental educator are knowledgeable in the same areas of science and both leverage their work for increased environmental protection, the products of their work could be comparably beneficial in connecting people to nature (Farnsworth, 2011). Conservation photographers have an inherent ethic toward environmental protection that emphasizes contributions of local communities to their greater environment (Farnsworth, 2011), and their photographs may help connect people to the environment in meaningful ways.

Existing Research in Conservation Photography

To date, much of the research examining the connection between environmental education and conservation photography has been from a pedagogical standpoint; how the photographers themselves act as educators through the creation of their photographs (Farnsworth, 2011) or how participating in creating photographs can create environmental connection (Udall Foundation, 2012). This researcher has been unable to identify studies to date examining student responses to conservation photographs in a classroom setting, or if viewing conservation photographs could inspire action in students. Even with the impact media has been shown to have on youth (Hofferth & Sandberg, 2001; Rideout et al., 2010), the researcher has been unable to find any research examining the outcomes of using visual media like conservation photographs as part of classroom environmental education. Therefore, the purpose of this study is to explore sixth-grade student impressions of conservation photographs in the classroom. The hope is that the resulting data will better inform environmental educators in using conservation photographs to connect students to the environment in the classroom.

CHAPTER 3.

METHODOLOGY

The primary research question guiding this study was: what impressions do sixth-graders have after viewing conservation photographs? The secondary question was: can viewing conservation photographs lead sixth-graders to want to take action based on what they see? These questions were first explored with a pilot study using a qualitative approach to determine the best methodology to gather impressions. After the pilot study, the primary study was conducted. A qualitative research design was chosen for this study because of its flexibility. This design allowed the researcher to interact with participants in their natural setting to best examine their impressions (Creswell, 2014). Furthermore, it allows patterns, categories, and themes to emerge inductively from the data, creating a complex, holistic picture of the issue under study (Creswell, 2014).

A qualitative approach was most appropriate because of the exploratory nature of the research (Creswell, 2014). Because of the lack of research concerning student impressions of conservation photographs, an exploratory approach that allowed for more discerning, contextual data to emerge was used to better provide important information in directing future research. Qualitative data can inform the design of tools for further collecting quantitative data in future studies. Gathering contextual data was necessary because "impressions" can be affected by a variety of interacting components such as upbringing and previous educational experience. Qualitative research can shed light on dynamics like these.

An impression is an idea, feeling, or opinion about something or someone, especially one formed without substantial evidence (Simpson, 1884). Current impression research focuses

primarily on the factors impacting "first impressions" and impressions gained from the viewing of various social media enterprises (Ambady & Skowronski, 2008; Gosling, Gaddis, & Vazire, 2007; Nauert, 2011). Methodologies employed to gather impressions have primarily been interviews or the completion of surveys by research subjects created by the researchers (Gosling et al., 2007).

As for why impressions were important to examine when exploring what students thought and felt about conservation photographs, the researcher was interested in the authentic reactions students had to the images they were seeing. The researcher wanted to know what thoughts, feelings, opinions or potential motivations to action were formed in the minds of the study participants as they first saw the photographs. This would help to better understand how the photographs impacted them.

Grounded Theory Research

Grounded theory research is a qualitative strategy in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study (Creswell, 2014). In other words, the theory emerges from the data. The researcher does not go into the study with pre-conceived notions about what information will come from the data, they simply allow the ideas to come forth and reveal themselves. A study using grounded theory is likely to begin with a question, or even just with the collection of qualitative data (Creswell, 2014). The researcher was unable to identify any previous research involving an investigation of student impressions of conservation photographs in a classroom setting. Therefore, a grounded theory approach to collecting data was optimal for this groundwork-setting study.

Participants and Sample

South Florida sixth-grade middle school students were selected as the subjects of this study. Middle school students have been shown to be developing abilities connected to the goals of environmental education and represent the seemingly best stage for influencing how students become active in society as environmentally-conscious citizens and decision makers (McBeth Hungerford, Marcinkowski, Volk, & Meyers, 2008). Florida students were chosen as the subjects of this study because the photographs represent Florida and the researchers' residence and work were in Florida.

According to the National Center for Education Statistics (2012), the average size of a middle school classroom is between 17 and 26 students. The researcher engaged with two classrooms (57 students) in the primary study. Of those 57, only 39 students received parental consent for their responses to be used in this study (n=39). Six separate students participated in the pilot study (n=6). The pilot study and primary study students were analyzed separately. Gender and age of each student was requested, but no race-based selection of students was made. The participants were restricted to those students enrolled in a sixth-grade middle school in the 2017-2018 school year. Participation by the students in both the interviews and questionnaires was purely elective.

Research Design

The researcher developed questions used in individual interviews and a written questionnaire pertaining specifically to a curated group of six conservation photographs. The exhibit was developed using the professional conservation photographs of Carlton Ward Jr., a Florida-based conservation photographer, award-winning author and National Geographic Explorer. Ward was selected as the photographer for this exhibit because of his extensive documentation and exploration of wild Florida, as well as his mission to inspire the protection of land, water and wildlife throughout Florida. Each photograph was enlarged to the same dimensions (16 x 24 inches), mounted on sturdy foam core board, and displayed on easels. Uniformity of the photographs was important to insure a cohesive viewing experience for all participants, and to express equal validity of all images.

Ward's photographs highlighted Florida's wild lands, waters and animals with the goal of educating the public and ultimately inspiring protection efforts for wild Florida. The six photographs chosen for this study represented the story of the Florida black bear (*Ursus americanus floridanus*). The first two images began with an intimate portrait of the bear and an aerial view of pine woodlands at sunrise. The photographs that followed depicted the urban sprawl threatening Florida black bear habitat across the state, wildlife research conducted with Florida black bears, and finally, two Florida black bears harvested as a result of the 2015 black bear hunt in Florida. The researcher obtained permission to use these six photographs from Ward. The images used in the exhibit are included in Appendix C, and the signed consent form for their use is in Appendix D.

The order of the photographs was chosen specifically to tell a well-rounded story of the Florida black bear. The images were not chosen to illicit any specific responses from students, but they were curated in a way that the photographer and researcher decided would best tell the holistic story of life, management, conservation and issues of black bears in Florida. The researcher recognized that the order of the photographs may have played a role in how the

students responded, and that altering the order of the photographs could have changed the way they responded.

Before data collection began, the researcher submitted a proposal to and obtained written approval from the Montreat College Institutional Review Board, as well as written approval from each individual institution where data was collected. Consent forms were then distributed to each student in the approved classrooms or groups prior to the researcher's involvement with the students. Classroom teachers distributed and collected consent forms from the parent or guardian of each primary study participant, while the researcher gathered consent forms from the parents of the pilot study participants herself. Students participating in the primary study took their consent forms home to be signed and returned by their parent or guardian, while pilot study parents signed the consent forms on site and handed them to the researcher. Students were asked to put their names on the consent forms and questionnaires for the sole purpose of matching the consent forms with questionnaires. The researcher also asked for student names on the interview scripts. Students who did not receive signed consent from their parents or guardians were still able to participate in viewing the exhibit and answering the written questionnaires, but their questionnaires were excluded from the data. Once all consent forms were matched to interviews and questionnaires, all names were removed from the forms (n=39). The researcher was the only one to see the student names.

Pilot study. Because research on student impressions of conservation photographs is a relatively unstudied area, the researcher conducted a pilot study to compare two different data collection methods; a written questionnaire or an individual interview. The written questionnaire and individual interview contained the exact same question divided into three sections; 'before

exhibit,' 'during exhibit,' and 'after exhibit' questions. Both methods were conducted while the students were viewing the exhibit, apart from the 'before exhibit' questions, which were answered prior to viewing the exhibit. The pilot study included six students; three answered the written questionnaire and three were individually interviewed. The pilot study took place in a pseudo-classroom setting in the youth room of a church. The six pilot study students did not participate in the primary study. This pilot study helped determine the best course of action to use for data collection in the primary study. The researcher ultimately decided to use the written questionnaire as the mode of data collection over the individual interviews. This decision was based primarily on limited time availability during the primary study data collection sessions, which were limited to 50 minutes with each classroom. No assistant was available to help with the primary study, further solidifying the researcher's decision not to interact with the students through interviews.

Written questionnaire. A written questionnaire was administered by the researcher or research assistant in each data collection setting directly prior to the students viewing of the exhibit. The researcher was unable to find a qualitative inquiry tool examining impressions aimed at middle school students that fit the study parameters, so an instrument was created, reviewed and approved by the Montreat Institutional Review Board (see Appendix C). The introduction and written questionnaire are included in Appendixes A and B.

The written questionnaire consisted of three sections; 'before exhibit,' 'during exhibit,' and 'after exhibit' questions. Students were asked open-ended questions in each section relating to their impressions of the photographs and of the exhibit in general. The purpose of the 'before exhibit' questions was to establish a base understanding of the students' thoughts about the

exhibit and its purpose. The 'during exhibit' questions were to generally allow participants to offer their impressions; thoughts, feeling, opinions, and potential motivations to action of the photographs. The 'after exhibit' questions gauged the student's impressions about the exhibit as a whole. Examining the 'before' and 'after exhibit' responses were key in determining what the student's impressions were going into the exhibit and if any of their impressions changed as a result of experiencing the exhibit. Sixth-grade students from Berkeley Preparatory School and St. John's Episcopal Parish Day School participated in the primary study, while sixth grade youth group students from Palma Ceia Presbyterian Church participated in the pilot study.

Individual interview. The second strategy for data collection was an individual interview. Interviews are used in qualitative research to seek the views and opinions of the participants (Creswell, 2014). This method involved a one-on-one interview with three of the pilot students as they viewed the photographs. A research assistant conducted the interviews using the script to help reduce potential bias. The introduction and interview scripts are included in Appendixes C and D.

The purpose of the interview questions was to prompt conversation about the student's impressions of the photographs. Questions asked pertained specifically to the curated group of photographs on display. The interviews consisted of questions for 'before exhibit,' 'during exhibit,' and 'after exhibit.' Students were asked open-ended questions relating to their impressions of the photographs and of the exhibit in general. Their responses were recorded using an audio recording device with consent from the students and parents to be recorded.

Role of Researcher

Knowledge of the researcher's personal and professional background are helpful to understanding the results of this study. The primary researcher is a seventh-generation Floridian who has worked for many years on bringing awareness to protection needs for natural Florida. Though she worked for several years with students in the natural science field, she has never previously worked with middle school students. This lack of prior experience could affect her interpretation of the results, but it could also give her a unique perspective into the collected data. Professionally, she has worked as a teacher naturalist, assistant to conservation photographer Carlton Ward Jr., and professional photographer herself for several years. This could have brought inherent bias to this study due to her high valuing of environmental education and conservation photography. In order to counter this, the researcher used an assistant when interviewing and interacting with pilot study students. She also used inter-coders to code 20% of her primary study data.

The researcher's direct involvement in the study and interaction with the students could potentially impact student responses. It is possible that some students responded to the photographs based on what they thought the researcher wanted to hear. The researcher guarded against this by carefully phrasing open-ended questions without leading wording. She also refrained from directly interacting with students during the pilot study by using a research assistant. However, an assistant was unavailable to help during the primary study.

Data Collection

Pilot study: questionnaire and interview. Six students (three males and three females) were chosen at random from a group of approximately 20 middle school youth group students

from Palma Ceia Presbyterian. Three of the pilot study students (one male and two females) were invited to the classroom where the exhibit was already in place. These students were chosen at random by the research assistant to take the written questionnaire. The photographs were facing backwards so the students could not see them upon entering the research space. The location for research was determined by the church and the researcher to best reflect a traditional classroom setting. The room had four windows, which were shaded to decrease possible bias from students viewing the outdoors through the window, which could potentially lead to increased environmental connectedness. All students received parent consent to participate.

After the students gathered in the exhibit location, the research assistant introduced the students to the study by reading the questionnaire introduction. The students were first asked to complete the 'before exhibit' section of the questionnaire. Then, each photograph was turned around individually for the students to view silently and give their responses. To standardize each student's time with the photographs, the researcher let the students examine each photograph for two minutes. This standardization ensured that each student had an equal amount of time to examine the photographs and form their responses. Students quietly examined each photograph in their curated order and wrote down their responses. If a student required more time, or wished to return to a previous photograph for closer examination or to finish a response, more time was allotted. At the end of the questionnaire, all photographs were turned forward, so the students could answer the final four 'after exhibit' questions while observing the entire exhibit. Upon completion of the questionnaires, the research assistant collected the responses from the students, thanked them for their time, and the data collection session ended.

Next, the three remaining pilot study students (two males and one female) were invited to the same classroom. These remaining three students were surveyed using the individual interview method. The same conditions applied to the interview scenario as the questionnaire scenario. One student at a time was brought into the exhibit location. The research assistant introduced the students to the study by reading the interview introduction. The students were first asked the 'before exhibit' questions. Then, each photograph was turned around individually for the student to view silently and say their responses. To standardize each student's time with the photographs, the researcher let the students examine each photograph for two minutes. They quietly examined each photograph in their curated order and spoke their responses. If students required more time or wished to return to a previous photograph for closer examination or to finish a response, more time was allotted. At the end of the interview, all photographs were turned forward, so the students could answer the final four 'after exhibit' questions while viewing the entire exhibit. Upon completion of the interview, the research assistant thanked them for their time, and the data collection session ended. All three interviews were recorded by the research assistant and transcribed by the researcher. All students had received parental consent to participate.

Primary study: written questionnaires. The researcher invited multiple middle schools in the Tampa Bay area to participate in this study. Two schools agreed to participate; Berkeley Preparatory School and St. John's Episcopal Day School. The researcher visited three total classrooms; one classroom from Berkeley and two classrooms from St. John's. The researcher had 50 minutes to interact with each class. For each of the three classrooms, the students were invited to the classroom where the exhibit was already in place. The photographs were facing backwards so the students could not see them. Each location (one room for Berkeley, one room for St. John's) was determined by each school to afford the greatest convenience to the teachers. After the students gathered in the classroom, the researcher introduced the students to herself and the study by reading the questionnaire introduction. From there, the data collection process operated in the same manner as the questionnaire session from the pilot study. Upon completion of the questionnaires, the researcher collected them from the students, thanked them for their time, and the data collection session ended. No research assistant was available to assist with the primary study data collection sessions.

Data Analysis

Written questionnaire. The final collection of primary study written questionnaires were analyzed through a coding process. The primary researcher first read over all questionnaires to get a sense of the big ideas, then created a code list of recurring ideas developed from the responses (Creswell, 2014). Once an initial code list was created, two outside researchers previously unfamiliar with the data were given the code list and definitions of codes. They acted as inter-coders for 20% of the data (eight questionnaires) to increase the trustworthiness of the results and to reduce potential bias (Creswell, 2014). The code list was negotiated between the researcher and the inter-coders to resolve any discrepancies. After negotiating, the researcher and inter-coders were able to reach 100% agreement in codes, helping to ensure the trustworthiness of the analysis (Creswell, 2014). The final negotiated code list was then analyzed, reported out as responses, and further collapsed into themes. These responses and themes were representative of the patterns that emerged from the data. The three pilot study questionnaires were only reviewed by the primary researcher.

Individual interviews. The final transcribed interviews were analyzed first to help determine the best course of action for the primary study methodology. They were then analyzed in the same manner as the written questionnaires. The three interviews were only reviewed and analyzed by the primary researcher.

CHAPTER 4.

RESULTS

This study explored student impressions of conservation photographs and if viewing conservation photographs could potentially indicate motivation to action. Participants selected for this study were enrolled in the sixth-grade in Hillsborough County, Florida private schools during the 2017-2018 school year. The participating schools and church youth group were contacted directly by the researcher, who obtained permission to engage with students from each school and church. Six students participated in the pilot study and 57 students participated in the primary study. Though all primary study students were given the questionnaire and allowed to participate, only 39 students (n=39) received consent for their responses to be used in this study. Each student was asked to answer two questions before viewing the photographs, three questions at each of the six photographs in the exhibit, and four questions at the end of the exhibit, totaling 24 questions in all. Some of the pilot study and primary study students elected not to answer certain questions, as they were told this was a voluntary survey and they were not required to answer all the questions.

Demographics

Pilot study. The pilot study was conducted with six sixth-graders from the youth group of Palma Ceia Presbyterian Church in Tampa, Florida to help determine the best methodology for gathering student impressions of conservation photographs. Three students were given a written questionnaire, while three students were individually interviewed using the same questions. The genders and age ranges of the pilot study participants are represented in Tables 1 and 2, respectively. Table 1

Demographics of Pilot Study Respondents

Gender	No. of Respondents	
Male	3 (50%)	
Female	3 (50%)	

Note. n=6

Table 2

Age Range of Pilot Study Respondents

Age	No. of Respondents	
11	3 (50%)	
12	3 (50%)	

Note. n=6

Primary study. For the primary study, sixth-grade classrooms across the Tampa area were invited to participate. The researcher initially intended to conduct the primary study with public middle school students. However, numerous circumstances prevented data collection at public schools. Because private schools are more autonomous with fewer restrictions on interacting with students for research purposes, middle school students in private school became the focus of the study. Two private schools accepted the invitation; Berkeley Preparatory School and St. John's Episcopal Parish Day School. The genders and age ranges of the final 39 primary study participants are represented in Tables 3 and 4, respectively.

Table 3

Demographics	of Primary	Study	Respondents
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Gender	No. of Respondents (%)	
Male	21 (53%)	
Female	18 (47%)	
Note. n=39		

Table 4

Age Range of Primary Study Respondents

Age	No. of Respondents (%)	
11	26 (66%)	
12	13 (34%)	

Note. n=39

Pilot Study Responses

Before exhibit. Both written questionnaire and interview responses showed extensive overlap in the types of responses, so the research reported the questionnaire and interview responses together. Before viewing the photographs, student participants were asked why they thought the researcher wanted them to see the photographs. In response to the first question, which asked why the students thought they were viewing the exhibit, five students (83%) responded that they were looking at the photographs to 'help the researcher,' meaning the researcher wanted or needed their reactions to the photographs. One student did not answer the question. In response to the second question, which asked if the students thought they could learn anything from seeing photographs, three students (50%) responded that they could learn something from looking at photographs, two students (33%) said they could maybe learn something, and one student chose not to respond. The results of the 'before exhibit' responses from the pilot study are shown in Table 5.
Pilot, Before Exhibit: Why do you think I want you to see these photographs?

Codes	No. of Respondents (%)	Representative Quotes
Help the Researcher	5 (83%)	"To get our responses" (Male, 12 years old).
No Answer	1 (17%)	
Note. n=6		

During exhibit. While viewing the six photographs in the exhibit, student participants were asked three questions:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

In response to what the photographs made them think about, four students (84%) shared nature descriptions of one or more photographs, shared social/community thoughts, personal life reflections, and also mentioned hunting. The results of the 'thoughts on photographs' responses from the pilot study are shown in Table 6.

Codes	No. of Respondents (%)	Representative Quotes
Nature Descriptions	4 (66%)	"A rainforest with lots of trees" (Female, 11 years old).
Social/Community	4 (66%)	"Buildings" (Male, 12 years old).
Personal Life	4 (66%)	"It makes me want to fly to Cali" (Female, 11 years old).
Hunting	4 (66%)	"Hunting" (Male, 12 years old).
Animal Wellbeing	3 (50%)	"It makes me think about hurt animals" (Male, 12 years old).
Negative Human Impacts	2 (33%)	"It makes me think about destruction and how most people don't see things like this because we take down too many trees" (Female, 11 years old).
Provoking Questions	2 (33%)	"Is it a dead bear or an alive bear?" (Male, 11 years old)
Creating Narratives	1 (17%)	"That bears should not have a family right by the road" (Female, 11 years old).
Death	1 (17%)	"Death, murder, crying kids" (Female, 11 years old).

Pilot, Combined Photographs 1-6, Thoughts on Photographs

Note. n=6. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to how the photographs made them feel, six students (100%) gave a negative emotional response (NER) to one or more of the photographs. This means that they responded to how the photograph made them feel with phrases like mad, sad, angry, depressed, bad, scared, and so on. The results of the 'feelings about photographs' responses from the pilot study are shown in Table 7.

Pilot, Combined Photographs 1-6, Feelings About Photographs

Codes	No. of Respondents	(%) Descriptors
Negative Emotional Response (NER) 6 (100%)	Sad, mad, angry, depressed, bad, devastated, scared, annoyed, deserted
Positive Emotional Response (PER)	4 (66%)	Happy, joyful, glad, peaceful, brave, courageous, giddy, smile, pleased
Neutral Emotional Response (NUER) 3 (33%)	Bored, interested, curious, dizzy, bland, weird

Note. n=6. Percentages may not equal 100% due to multiple or no responses per respondent.

In answering if viewing one or more of the photographs made the students want to do anything, six students (100%) said viewing one or more of the photographs made them want to help animals in some capacity. This means they responded by specifically saying they wanted to save, help, protect, or care for bears, wildlife, and other animals. The results of the 'actions based on viewing photographs' responses from the pilot study are included below in Table 8.

Pilot, Combined Photographs 1-6, Action Ideas Based On Photographs

Codes	No. of Respondents (%)	Descriptors/Rep. Quotes
Help Animals	6 (100%)	"Help animals" (Female, 11 years old).
Go Outside	4 (66%)	"It makes me want to go outside a little more to connect with nature" (Female, 11 years old).
Help Environment	4 (66%)	"Maybe tell the people they are taking up too much land" (Female, 12 years old).
Anti-hunting	4 (66%)	"Stop hunting" (Male, 12 years old).
Do Nothing	3 (33%)	Nothing, no, nope, do nothing
Fly	3 (33%)	"Fly" (Male, 11 years old).
Interact with Animals	1 (17%)	"It makes me want to hug the bear" (Male, 11 years old).
Negative Actions Against Hun	nans 1 (17%)	"I want to hurt that man!" (Female, 11 years old).
Eat	1 (17%)	"I want to eat broccoli now" (Female, 11 years old).

Note. n=6. Percentages may not equal 100% due to multiple or no responses per respondent.

After exhibit. After viewing all six photographs and completing the main section of the questionnaire, participants were asked four final questions. They were asked, again, why they thought the researcher wanted them to see the photographs, if they learned anything from viewing the photographs, how the photographs made them feel overall, and if they had any final thoughts in general to share that were not specifically prompted. In response to why they thought, after viewing the exhibit, the researcher wanted them to view the photographs, two

students (33%) responded that they viewed the photographs so they, the students, could learn or gain something from their experience with the exhibit. Two students said they viewed the photographs to help the researcher. Five students (83%) said they learned something from viewing the photographs. Three students (50%) reported a positive overall emotional response to the photographs. The results of the 'after exhibit' responses from the pilot study are shown in Table 9.

Table 9

Pilot, After Exhibit: Why do you think I want you to see these photographs?

Codes	No. of Respondents (%)	Representative Quotes
Students Can Learn	2 (33%)	"Show me about wildlife" (Male, 12 years old).
Help with Research	2 (33%)	"So it can help you with your research" (Female, 12 years old).
Researcher Can Learn	1 (17%)	"She wanted our input" (Female, 11 years old).
Motivate to Action	1 (17%)	"I think she wanted us to see them to help inspire us to do good" (Male, 11 years old).

Note. n=6. Percentages may not equal 100% due to multiple or no responses per respondent.

Primary Study Responses

Before exhibit. Before viewing the photographs, student participants were asked why they thought the researcher wanted them to see the photographs. They were also asked if they thought they could learn anything from looking at photographs. In response to the first question, 18 students (46%) responded said they were looking at the photographs to "help the researcher," meaning the researcher wanted or needed their reactions to the photographs. In response to the second question, 34 students (87%) responded that they could learn something from looking at

photographs. The results of the 'before exhibit' responses from the primary study are shown in Table 10.

Table 10

Primary Study, Before Exhibit: Why do you think I want you to see these photographs?

Codes	No. of Respondents (%)	Representative Quotes
Help the Researcher	18 (46%)	"I think that Alex wants me to see these photographs because she wants to see my response to the pictures to help with her thesis topic" (Female, 11 years old).
Share Thoughts/Feelings/Opin	iions 16 (41%)	"Alex wants us to see these photographs so we can express how we feel and what we want to do" (Female, 11 years old).
Students Can Learn	4 (10%)	"To learn/see things from the environment" (Male, 11 years old).
"I don't know"	1 (2%)	

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

During exhibit: by photograph. To gain a better understanding of the impacts of individual photographs, the student responses to each individual photograph were compiled. This sorting allowed for a more nuanced look at how the photographs were being perceived by each student. At each photograph, students were asked what the photograph made them think about, how the photograph made them feel, and whether the photograph made them want to do anything. Photographs included in Appendix F. Responses to individual photographs are shown in Tables 11 through 16.

Primary Study, Responses to Photograph 1: Portrait of a Florida Black Bear

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Nature Descriptions (24, 64%)	PER (26, 69%)	Do Nothing (9, 25%)
Personal Life (6, 17%)	NUER (6, 17%)	Interact with Animals (8, 23%)
Beauty of Nature (3, 7%)	NER (3, 7%)	Go Outside (8, 23%)
Provoking Questions (3, 7%)	"I don't know" (2, 5%)	Help Animals (5, 15%)
Creating Narratives (2, 5%)		Help Environment (2, 5%)
Social/Community (2, 5%)		Eat (1, 2%)
Negative Human Impacts (1, 2%)		

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 1 (portrait of a Florida black bear), 64% of students gave nature description, 69% of students had a positive emotional response (PER), and 68% of students indicated motivation to do something as opposed to 25% who indicated no motivation to action.

Primary Study, Responses to Photograph 2: Aerial of Longleaf Pine Flatwoods at Sunrise

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Nature Descriptions (21, 56%)	PER (23, 61%)	Go Outside (17, 46%)
Beauty of Nature (6, 17%)	NUER (5, 15%)	Help Environment (6, 17%)
Personal Life (4, 10%)	NER (4, 10%)	Do Nothing (5, 15%)
Negative Human Impacts (4, 10%)		Fly (3, 7%)
Social/Community (2, 5%)		Help Animals (1, 2%)
Provoking Questions (1, 2%)		
Flying (1, 2%)		

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 2 (aerial of longleaf flatwoods at sunrise), 56% of students gave nature descriptions, 61% had a positive emotional response (PER), and 72% of students indicated motivation to do something as opposed to 15% of students who indicated no motivation to action.

Primary Study, Responses to Photograph 3: Aerial of Urban Sprawl Overtaking Forest

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Social/Community (23, 61%)	NER (11, 30%)	Do Nothing (9, 25%)
Personal Life (12, 33%)	NUER (8, 23%)	Help Environment (8, 23%)
Negative Human Impacts (10, 28%)	PER (5, 15%)	Go Outside (2, 5%)
Provoking Questions (2, 5%)	"I don't know (4, 10%)	Fly (1, 2%)
Nature Descriptions (1, 2%)		Help Animals (1, 2%)

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 3 (aerial of urban sprawl overtaking forest), 61% of students had social/community centered thoughts, 30% had a negative emotional response (NER), and 32% of students indicated motivation to do something as opposed to 25% of students who indicated no motivation to action.

Primary Study, Responses to Photograph 4: Wildlife Biologist Radio Collaring Sedated Bear

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Concern for Animals Wellbeing (9, 25%)	NER (33, 87%)	Help Animals (19, 51%)
Creating Narratives (7, 20%)	PER (3, 7%)	Interact with Animals (6, 17%)
Negative Human Impacts (5, 15%)	NUER (2, 5%)	Do Nothing (5, 15%)
Death (4, 10%)		Anti-Hunting (3, 7%)
Provoking Questions (4, 10%)		Negative Actions Against Humans (2, 5%)
Wildlife Research (2, 5%)		Help Environment (1, 2%)
Personal Life (2, 5%)		
Nature Descriptions (2, 5%)		

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 4 (wildlife biologist radio collaring sedated bear), 25% of students indicated concern for the animal's wellbeing, 87% had a negative emotional response (NER), and 82% of students indicated motivation to do something as opposed to 15% of students who indicated no motivation to action.

Primary Study, Responses to Photograph 5: Bear Crossing Under I-75 Underpass

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Negative Human Impacts (18, 48%)	NER (21, 56%)	Help Animals (14, 38%)
Creating Narratives (28%)	PER (4, 10%)	Do Nothing (5, 15%)
Nature Descriptions (5, 15%)	NUER (4, 10%)	Help Environment (4, 10%)
Personal Life (4, 10%)	"I don't know" (4, 10%)	Go Outside (2, 5%)
Social/Community (4, 10%)		Interact with Animals $(1, 2^{9})$
Concern for Animal Wellbeing (3, 7%)		(1, 270)
Death (2, 5%)		
Provoking Questions (2, 5%)		

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 5 (bear crossing under I-75 underpass), 48% of students thought about negative human impacts on animals and the environment, 56% had a negative emotional response (NER), and 55% of students indicated motivation to do something as opposed to 15% of students who indicated no motivation to action.

Primary Study, Responses to Photograph 6: Hunter with Deceased Bears in Truck Bed

Thoughts (#, % of respondents)	Feelings (#, %)	Actions (#, %)
Death (15, 41%)	NER (33, 87%)	Help Animals (18, 48%)
Hunting (10, 28%)	PER (2, 5%)	Anti-Hunting (9, 25%)
Negative Human Impacts (6, 17%)	"I don't know" (2, 5%)	Do Nothing (4, 10%)
Nature Descriptions (4, 10%)		Go Outside (1, 2%)
Personal Life (3, 7%)		
Creating Narratives (3, 7%)		
Concern for Animal Wellbeing (2, 5%)		
Provoking Questions (2, 5%)		
Social/Community (1, 2%)		

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to Photograph 6 (hunter with deceased bears in truck bed), 41% of students thought about death, dying or killing, 87% had a negative emotional response (NER), and 75% of students indicated motivation to do something as opposed to 10% of students who indicated no motivation to action.

During exhibit: combined photographs. Below are the combined total responses to all photographs in each impression category given during the exhibit viewing. In response to sharing what the photographs made them think about, 33 students (84%) shared nature descriptions of one or more photographs. This means they thought about wildlife, forests, trees, and land. The results of the 'thoughts on photographs' responses are below in Table 17.

Trinary Sudy, Combined Tholographs 1-0, Thoughts on Tholographs			
Codes	No. of Respondents (%)	Representative Quotes	
Nature Descriptions	33 (84%)	"It makes me think about the	

Primary Study, Combined Photographs 1-6, Thoughts on Photographs

Nature Descriptions	33 (84%)	"It makes me think about the wilderness and the wildlife" (Female, 11 years old).
Negative Human Impacts	27 (69%)	"People clearing land and destroying animal homes" (Female, 11 years old).
Social/Community	25 (64%)	"It make me think about Pocahontas because they lived in the woods and walked in the woods" (Male, 11 years old).
Animal Wellbeing	20 (51%)	"The animals with almost nowhere to live or go" (Male, 12 years old).
Personal Life	18 (46%)	"Work hard to make an achievement" (Female, 11 years old).
Creating Narratives	17 (43%)	"It makes me think about a baby bear in the forest who can't find its family" (Female, 11 years old).
Death	11 (28%)	"People killing animals" (Female, 11 years old).
Beauty of Nature	11 (28%)	"All of the beauty" (Female, 11 years old).
Provoking Questions	10 (15%)	"Where its located? What the bear is doing? Is the bear scared with loud vehicles passing by?" (Female, 11 years old).
Hunting	6 (15%)	"That hunting and killing animals is wrong" (Female, 11 years old).
Wildlife Research	2 (5%)	"People researching about wildlife" (Female, 11 years old).

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In response to how the photographs made them feel, 34 students (87%) gave a positive emotional response (PER) to one or more of the photographs. This means that they responded to how the photograph made them feel with phrases like happy, joyful, glad, excited, interested, intrigued, and so on. The results of the 'feelings about photographs' responses from the primary study are included below in Table 18.

Table 18

Codes	No. of Respondents	(%) Descriptors/Rep. Quotes
Positive Emotional Response (PER)	34 (87%)	Happy, joyful, glad, peaceful, brave, courageous, giddy, smile, pleased
Negative Emotional Response (NER) 33 (84%)	Sad, mad, angry, depressed, bad, devastated, scared, annoyed, deserted
Neutral Emotional Response (NUER	.) 8 (20%)	Bored, interested, curious, dizzy, bland, weird
Confusion	7 (17%)	Confused, unsure
Conflicted	4 (10%)	Both sad and happy, excited and scared, mixed emotions, listing of positive/negative emotions

Primary Study, Combined Photographs 1-6, Feelings About Photographs

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

In answering if viewing the photograph made the students want to do anything, 34 students (87%) said viewing one or more of the photographs made them want to help animals in some capacity. This means they responded by specifically saying they wanted to save, help, protect, or care for bears, wildlife, and other animals. The results of the 'action ideas based on viewing photographs' responses from the primary study are included below in Table 19.

Codes	No. of Respondents (%)	Representative Quotes
Help Animals	34 (87%)	"Save the bear" (Male, 11 years old).
Go Outside	21 (53%)	"Go to the Everglades" (Male, 11 years old).
Help Environment	17 (43%)	"Grow more trees in rural places" (Male, 11 years old).
Do Nothing	17 (43%)	Nothing, no, nope, do nothing
Anti-hunting	13 (33%)	"Stop hunting certain things that could cause extinction" (Male, 11 years old).
Interact with Animals	14 (35%)	"Find a real bear and look at it" (Male, 11 years old).
Negative Actions Against Hun	nans 6 (15%)	"Hurt that guy the same way he hurt them" (Female, 11 years old).
Fly	6 (15%)	"Sit in an airplane and look down at houses" (Female, 11 years old).
Eat	1 (2%)	"Eat salmon" (Female, 11 years old).

Primary Study, Combined Photographs 1-6, Action Ideas Based On Photographs

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

After exhibit. After viewing all six photographs and completing the main section of the questionnaire, participants were asked four final questions. They were asked, again, why they thought the researcher wanted them to see the photographs, if they learned anything from viewing the photographs, how the photographs made them feel overall, and if they had any final thoughts in general to share that were not specifically prompted. In response to why they thought, after viewing the exhibit, the researcher wanted them to view the photographs, 13 students (33%) responded that they viewed the photographs so the researcher could learn or gain

something from their responses. A total 87% of students said they learned something from viewing the photographs. A total 46% of students reported a negative overall emotional response to the photographs. The results of the 'after exhibit' responses from the primary study are included in Tables 20 and 21.

Table 20

Codes	No. of Respondents (%)	Representative Quotes
Researcher Can Learn	13 (33%)	"Let her know what we think for her thesis" (Female, 12 years old).
Students Can Learn	10 (25%)	"What development is doing to Florida's nature" (Male, 12 years old).
Help with Research	8 (20%)	"To help with her research" (Female, 11 years old).
Form Understanding	4 (10%)	"Understand that animals are losing homes" (Male, 11 years old).
Motivate to Action	2 (5%)	"To see what's going on in the environment and how we can change it" (Male, 12 years old).
Spread Awareness	1 (2%)	"Spread awareness that people are killing bears" (Male, 12 years old).
"I don't know"	1 (2%)	

Primary Study, After Exhibit: Why do you think I want you to see these photographs?

Note. n=39. Percentages may not equal 100% due to multiple or no responses per respondent.

Codes	No. of Respondents (%) Descriptors/Rep. Quotes
Negative Emotional Response (PER)	17 (46%)	Sad, mad, angry, depressed, bad, devastated, scared, annoyed, deserted
Conflicted	7 (20%)	Both sad and happy, excited and scared, mixed emotions, listing positive/negative emotions together
Neutral Emotional Response (NUER) 3 (7%)	Bored, interested, curious, dizzy, bland, weird
Positive Emotional Response (PER)	2 (5%)	Happy, joyful, glad, peaceful, brave, courageous, giddy, smile, pleased
Note. n=39. Percentages may not equ	al 100% due to multipl	e or no responses per respondent.

Primary Study, After Exhibit: How did the exhibit make you feel overall?

Results Summary

A strong variance occurred in positive and negative feelings according to the specific photograph being viewed. The first two photographs, which showed a portrait of a healthy looking bear and natural habitat, were responded to with predominantly positive feelings. The other four photographs had the highest percentage of feeling responses categorized as negative. These photographs all depicted an urban-wildlife interface or one kind or another; development encroaching on forest land (photograph 3), a wildlife researcher collaring a sedated bear (photograph 4), a bear walking under a highway (photograph 4), and finally, a hunter with two bears taken as a result of hunting (photograph 6). Students responded to these images of human-animal interaction with mostly negative emotions (sad, angry, afraid) and had thoughts centering on concern for animal wellbeing (photograph 4), negative human impacts on animals (photograph 5), and death (photograph 6).

In comparing the 'before exhibit' and 'after exhibit' questions, the largest percentage of

students (46%) responded before viewing the exhibit that said they were looking at the photographs to 'help the researcher.' After viewing the exhibit, the largest percentage (33%) responded that they viewed the photographs so that the researcher could learn or gain something from their responses. Before viewing the exhibit, 34 students (87%) responded that they could learn something from looking at photographs. After the exhibit, the same percentage (87%) of students said they did learn something from viewing the photographs. When asked at the end how the exhibit made them feel overall, 46% of students reported a negative overall emotional response to the exhibit. The other 54% were divided between positive emotional and neutral emotional responses.

CHAPTER 5.

DISCUSSION

The purpose of this study was to explore sixth-grade student impressions of conservation photographs in the classroom and examine whether those impressions indicated any motivation towards action. The primary research question guiding this study was: what impressions do sixth-graders have after viewing conservation photographs? The secondary question was: can viewing conservation photographs lead sixth-graders to want to take action? This study indicated that viewing conservation photographs in a classroom setting can create impressions that convey student connection to the environment. Subsequently, this study also indicated that viewing photographs in a classroom setting can lead to possible motivations to environmental action in sixth-grade students. Viewing conservation photographs in a classroom setting brought forth a variety of environmentally conscious impressions, strong positive and negative feelings specifically associated with the subject matter of the individual photograph, and prompted environmental action-oriented responses from the students. This study provides insight into how viewing conservation photographs in a classroom setting can contribute to student connection to the environment and potential motivation to environmental action in sixth-graders. Additionally, this study provides new clarity into how conservation photographs could be used as tools for environmental education in the classroom.

Themes from Viewing Conservation Photographs

After creating and synthesizing the code lists generated from the student responses, themes were developed to best represent the overarching ideas brought forth from the data. Below are the six themes that emerged from the data. **Nature components.** The majority of student responses to what the photographs made them think about can be categorized as "biophilic." Biophilia is an affiliation with life and lifelike processes (Kahn, 1997). Synthesized down to "nature components," the first set of responses in this theme centered on wilderness, environment, the Everglades, forests, trees, wildlife, plants, animals, and endangered species in general. A total 84% of primary study respondents commented that one or more of the photographs made them think in some way about various components of the natural world.

- "The forest is living and growing" (Female, 11 years old).
- "It makes me think about a forest with animals" (Male, 11 years old).

According to Lawrence (1993) in her exploration into various aspects of biophilia, humans have a deeply grounded affiliation with animals. Sixty-nine percent of students said that one or more of the photographs made them think about negative human impacts on animals and nature. This meant they wrote about the destruction of nature, deforestation, habitat loss, animals losing space, people living where wilderness was, or tearing down trees. They talked about humans doing bad things, hurting animals, destroying land, road kill, animals in trouble, and endangered wildlife.

- "People clearing land and destroying animal homes" (Male, 11 years old).
- "It makes me think about how mankind is not leaving space for animals. They are building hotels, highways, and more" (Male, 11 years old).

Similarly, 51% of students responded that one or more of the photographs made them think about the wellbeing of animals. They expressed worry about the animals, how the bears were feeling, and if the bear was ok.

- "All the innocent animals who haven't gotten a REAL chance to live" (Female, 11 years old).
- "How bears are being treated poorly" (Male, 11 years old).

These findings are consistent with the Farnsworth (2011) statement that seeing photographs has been shown to enhance a person's ability to form emotional ties to the subjects being portrayed.

Social and community. Sixty-four percent of students responded with thoughts that centered around human related subjects, society and communities. These thoughts presented as comments about suburbs, homes, communities, and buildings. They also mentioned peoplerelated topics, like movie references, characters from popular culture. They mentioned humanrelated issues like homelessness, and "everyone needs a home"

- "It makes me want to put a red roofed house there" (Male, 11 years old).
- "It makes me think about a nice friendly neighborhood with lots of nice neighbors" (Male, 12 years old).

The large percentage of human-centered responses recorded during the viewing of Photograph Three, the aerial of urban sprawl overtaking forest, could have been a result of students literally interpreting what they saw.

Personal life and creating narratives. The findings of this study support the assertion made by Meuth (2010) that middle school-aged students are developing the ability to think in abstract terms. Many of the students responded to the photographs by creating their own narratives about the bears being represented. Some students created scenarios where the different bears shown were actually only one bear facing the many trials and tribulations a wild animal may face in an increasingly urban environment, while others personified what the bear

could be thinking or feeling. A total of 43% of students responded in this narrative fashion.

- "I think that the bear is better now and the mom nursed him back to normal health" (Male, 12 years old).
- "Help the bear find its way back to his parents in the forest" (Male, 12 years old).

Some of the responses also took on a personal tone, where the students reflected on their own lives and experiences while viewing the photograph. These responses looked like "me" in forest, "face my fears," visit friends. 46% of students responded in this personal way.

- "I want to listen to natural sounds and sleep" (Male, 12 years old).
- "It makes me want to see my family" (Male, 12 years old).

Positive and negative emotions. The second question asked at each photograph was how the photograph made the students feel. At one or more of the photographs, 87% of students responded with a positive emotional response; happy, joyful, glad, peaceful, brave, courageous, giddy, smile, or pleased. At one or more of the photographs, 84% responded with a negative emotional response; sad, mad, bad, angry, depressed, devastated, scared, deserted, or annoyed. Emotional responses varied widely by individual photograph, and some students would give positive and negative responses to the same photograph associated with different thoughts. These findings are consistent with Kahn (1997) who noted that people have a need to affiliate with nature, and that such affiliations can be both positive and negative.

- "Happy for beautiful scenery" (Male, 11 years old).
- "Sad, because the bear looks alone and hungry" (Male, 12 years old).

At the end of the questionnaire, the students were asked how the exhibit made them feel overall. In regards to the exhibit as a whole, 46% of students reported a negative overall emotional response to the photographs, 20% reported feeling conflicted, 7% reported feeling neutral, and 5% felt an overall positive feeling from the exhibit. This predominantly negative response at the end of the exhibit could be linked to the order of the photographs. The order of the photographs in general move from what could be considered "happy" to "sad" content. The last photograph in the exhibit is of two dead bears, killed by a hunter. This is the last image students viewed at the completion of the exhibit, potentially leading to a negative overall response to the exhibit. If the exhibit had been ordered differently, and a more uplifting image shown at the end, it is possible that the overall feeling students took away from the exhibit would have been more positive. The significance of ordering photographs in an exhibit should be explored in further studies.

A large percentage (87%) of emotions associated with photograph 3, that of the wildlife biologist collaring a sedated bear, were negative. Impressions, as defined in this study, are ideas, feelings, or opinions about something or someone, formed without substantial evidence (Simpson, 1884). The strong negative response to this photograph could be attributed to a lack of understanding on the part of the students as to what was happening in the image because of a lack of contextual evidence.

Motivation to action. The third questioned asked at each photograph was if the image made the student want to do anything. The most common response can be simplified to "help animals", with 87% of students responding with a comment like protect animals, save animals, defend animals, save wildlife, make more homes for animals, and save more land for animals.

- "Help the animal go to a more thriving environment" (Male, 11 years old).
- "It makes me want to help and pet the poor thing" (Female, 11 years old).

The second most common response involved the student being motivated to go outside. Many diverse responses were given for going outside, such as connect to nature, explore, swim, wander, hike, run, travel, and ride bikes. Fifty-three of students gave this response.

- "It might make me want to explore the forest" (Male, 11 years old).
- "It makes me want to explore a river, like go fishing there. Also, know the fish that live there" (Male, 11 years old).

Students also responded with a desire to help the environment as a whole, outside of specifically helping animals. A total 43% of students responded at one or more of the photographs that they were motivated to save the earth, save land, protect land, save trees, restore, save forests, stop destruction, stop pollution, tear down houses, roads, and tell people to stop the destruction of land and forests.

- "It makes me want to stop destroying the wilderness" (Male, 11 years old).
- "It makes me want to give more space to animals" (Male, 11 years old).

These findings align with the observations of Farnsworth (2011) that photographs have been shown to enhance a person's ability to understand the environment and take appropriate actions towards the subject's protection.

No motivations. When asked if the photographs made them want to do anything, 43% of students indicated, at one or more of the photographs, no motivation to action. There were also several students who chose not to answer this question throughout the exhibit.

Conservation Photographs' Potential Use in Classroom Environmental Education

Purpose of photographs. Before and after students viewed the exhibit, they were asked why they thought the researcher wanted them to see the photographs. The responses before the

students viewed the exhibit can be broken down into several themes; for the researcher's needs, so students can learn something, and so students can share thoughts, feelings, and opinions. Responses for 'researcher's needs' ranged from "Alex wants my input, answers, responses, reactions, or feedback" to "Alex can gather information for her research, thesis, project, study, survey, or science." Responses for 'students can learn' ranged from, "I can learn about about Florida, about environment, nature, wildlife, life around us, about my own thoughts/emotions, or about something I've never seen before." Responses for 'share thoughts, feelings, or opinions' ranged from, "to see what we think or feel about photographs, to express how we think, feel, what we want to do."

After students viewed the exhibit and were asked the same question, the 'before exhibit' themes were again echoed, but other themes emerged. Students again said they viewed the photographs so the 'researcher could learn,' 'students could learn,' and students could 'help with research.' Along with those repeated ideas, students also shared that they thought they viewed the exhibit to form an "understanding," be motivated to "help," and "spread awareness."

- "I think she wants us to see these to help bears" (Male, 11 years old).
- "So we understand about all the endangered animals" (Female, 11 years old).
- "To spread awareness that people are killing bears" (Male, 12 years old).

These findings echo the thought lifted up by Farnsworth (2011), Mittermeier (2005), and Ward (2008), that visuals have been shown to potentially affect the perceptions and understandings people have of the environment. Also, that by promoting conservation through art, conservation photographs seek to help raise awareness about environmental issues and empower people to take pro-environmental action (Mittermeir, 2005; Ward, 2008).

Learned from photographs. The second question asked both before and after the exhibit centered on the students learning from the photographs. First, students were asked if they thought they could learn anything from looking at photographs. The majority of students (87%) responded they could learn something from viewing photographs. At the end of the questionnaire, after viewing all of the photographs, students were asked if they did indeed learn anything from the photographs. Again, 87% responded that they did learn something from photographs. Not all of the same students who said they could learn from looking at the photographs indicated that they did learn something from looking at the photographs. These quotes are what the students learned after viewing the exhibit:

- "To look at all types of Florida and how protection of wildlife is so amazing because of the beauty of nature" (Male, 12 years old).
- "Yes. The environment changed drastically when humans came" (Female, 11 years old).
- "Habitat loss is spreading extremely quickly" (Male, 12 years old).

In accordance with Celedonia & Rosenthal (2012), Farnsworth (2011), Kellen-Taylor (1998), and Udall Foundation (1992), this study found that art has the capacity to effectively engage students with environmental learning. Farnsworth (2011) examined the educational potential of photography, showing how photography can offer a model for increased environmental awareness and resources for student engagement. This study indicates support for that model. **Limitations**

This study indicated that conservation photographs could be a tool used for connecting students to the environment in a middle school classroom setting, and viewing photographs can potentially motivate sixth-grade students to environmental action. However, there are several

limitations to this study.

The research was conducted with a limited sample size of only three sixth-grade private school classrooms in Tampa, Florida. Another study surveying students from more schools across the state, including public schools, could produce more comprehensive results. Each classroom interaction was limited to the 50-minute class time period. That time constraint was one reason the researcher chose to interact with the students through a written questionnaire. The length of the written questionnaire could have led to questionnaire fatigue and impacted the student's responses.

The researcher chose to sequence the six study photographs in a specific way. The sequence of the photographs could have directly impacted the students' responses to them. Altering the order of the photographs could have changed how the students responded. Students could have also given responses they felt the researcher would want to hear as opposed to their true impressions. This could have biased the researcher's interpretation of the data. The researcher was able to use an assistant to interact with students during the pilot study, but not the primary study. This could have potentially biased student responses by putting them in direct contact with the researcher. Lastly, the researcher has close ties to Florida, the conservation photography community, and the photographer who created the photographs used in her exhibit. She could bring her inherent bias to this study.

Recommendations for Future Research

More research is needed on student impressions of conservation photographs and their potential to motivate students to action. The following are potential areas of study for future research.

1. Researchers could examine a larger sample of students and students from public as well as private schools, as well as other age groups to form a more well-rounded look at student impressions of conservation photographs.

2. This study points to a need for a well-established survey instrument that addresses student impressions of conservation photographs.

3. This study did not include any responses from the classroom teachers regarding their own environmental understandings or what material they teach in the classroom. This type of information could provide a better understanding of how student responses could be influenced by their teachers.

4. No information was taken on the student backgrounds, or any potential outside influences they may have brought to their experience with the exhibit. More demographic information may be helpful to future studies.

5. The predominantly negative responses at the end of the exhibit could be linked to the order of the photographs. If the exhibit had been ordered differently, the overall response from the students could change. The significance of ordering photographs in an exhibit should be explored in future studies.

6. Some misunderstanding occurred in regard to the students' comprehension of the subject matter of several photographs. This could have been because of a lack of captions. In future educational uses of conservation photographs in classrooms, captions should be included with each photograph to ensure their message is property understood.

Recommendations for Practice

Based on the results of this study and student responses, several ideas emerged about the

connection between viewing conservation photographs, student connection to the environment and the potential of photographs to motivate students to action.

1. Conservation photographs could be additional tools educators use to connect their students to the environment in the classroom and potentially motivate them to environmental action.

2. Emotional and personal connections have been shown to be impactful for connecting students to the environment. Educators could begin encouraging more personal connections and creative opportunities related to the environment for their students to explore in the classroom.

3. Conservation photographs could begin serving a purpose in interpretive centers as a way for interpreters to share nature with their students and interact with students about the environment.

Conclusion

This study found that viewing conservation photographs in a classroom setting can produce strong emotional responses to the subject matter shown, create environmentally conscious impressions in sixth-grade students, and indicate potential motivation to environmental action. The majority of students expressed impressions associated with being connected to the environment and potential motivation to environmental actions based on their experience viewing the conservation photographs in the classroom. These thoughts and feelings were expressed through descriptions of nature components, considerations of negative human impacts on nature, wanting to help animals, and wanting to go outside. While the mission of conservation photography and environmental education is to shed light on environmental issues and motivate people to take pro-environmental action, it is unclear to what extent that mission is being fulfilled by conservation photographs on their own. This study provides greater insight into the potential for conservation photographs to be used in the classroom to connect students (and potentially adults) to the environment and inspire action.

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APPENDIX A

QUESTIONNAIRE INTRODUCTION
QUESTIONNAIRE INTRODUCTION

Hello everyone! My name is Alex Morrison.

I am a graduate student working on a project in partnership with your school. My project is looking at what sixth grade students in Florida think about and feel when they see this series of photographs. Thank you for taking time today to participate in this project!

It is important for you to know that everything you write will be confidential. I will not be using your names for anything other than to see who received parental consent and who did not. Anything you write that I may include in my research will be completely anonymous. Your responses will be providing valuable information for the photography and scientific community, and for that I thank you again.

Viewing the photographs and writing your responses to seeing them should take about 20-30 minutes, but if you need more time please let me know. You will be asked various questions about what you see, think, and feel about the photographs. At the bottom of the questionnaire, there will be a space to write down anything I may not have specifically asked you about with the other questions. Please feel free to write down any other thoughts you may have about the photographs.

Thank you all again or your time today. Remember, you may choose not to participate or may choose to not answer a specific question. If possible, it would be great if each of you could try and answer each question. Also, remember there is no right or wrong answer to any of these questions; I simply want to gather your impressions of the photographs you see.

APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

Name:_____

Age: _____

Grade: _____

Gender: M/F (circle one)

Directions:

Thank you for participating in my study! All of the images you will be viewing were taken in Florida. It is important for you to remember that everything you write will be confidential. Anything you write that I may include in my research will be anonymous. Remember, you may choose not to participate or may choose to not answer a specific question. Also, remember there is no right or wrong answer to any of these questions; the purpose of this study is simply to gather your impressions of the photographs you see.

Before You Begin the Exhibit:

- 1. Why do you think I (Alex, the researcher) want you to see these photographs?
- 2. Do you think you can learn anything from looking at photographs?

Please <u>Thoughtfully</u> Answer the Following at <u>Each</u> Photograph (remember there are no right or wrong answers):

Photograph 1:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?

3. Does this photograph make you want to do anything?

Photograph 2:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

Photograph 3:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

Photograph 4:

1. What does this photograph make you think about?

- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

Photograph 5:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

Photograph 6:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

After Viewing <u>All</u> Photographs, Please Answer the Following:

1. Why do you think I (Alex, the researcher) wanted you to see these photographs?

2. Do you think you learned anything from the photographs?

3. How did the group of photographs make you feel overall?

4. Is there anything else you would like to say about the photographs that I did not ask? Please feel free to write anything you think or feel about the photographs.

Thank you for your time today! Your answers are very important and appreciated.

APPENDIX C

INTERVIEW INTRODUCTION

INTERVIEW INTRODUCTION

Hello everyone! My name is Alex Morrison.

I am a graduate student working on a project in partnership with your school. My project is looking at what sixth grade students in Florida think about and feel when they see this series of photographs. Thank you for taking time today to participate in this project!

It is important for you to know that everything you say will be confidential. I will not be using your names for anything other than to see who received parental consent and who did not. Anything you say that I may include in my research will be completely anonymous. Your responses will be providing valuable information for the photography and scientific community, and for that I thank you again.

Viewing the photographs and responding to seeing them should take about 20-30 minutes, but if you need more time please let me know. You will be asked various questions about what you see, think, and feel about the photographs. You can also say anything I may not have specifically asked you about with the other questions. Please feel free to say any other thoughts you may have about the photographs.

Thank you all again or your time today. Remember, you may choose not to participate or may choose to not answer a specific question. If possible, it would be great if each of you could try and answer each question. Also, remember there is no right or wrong answer to any of these questions; I simply want to gather your impressions of the photographs you see.

APPENDIX D

INTERVIEW SCRIPT

INTERVIEW SCRIPT

Name:_____

Age: _____

Grade: _____

Gender: M/F

Thank you for participating in my study! All of the images you will be viewing were taken in Florida. It is important for you to remember that everything you say will be confidential. Anything you say that I may include in my research will be anonymous. Remember, you may choose not to participate or may choose to not answer a specific question. Also, remember there is no right or wrong answer to any of these questions; the purpose of this study is simply to gather your impressions of the photographs you see.

Before we look at the photographs, I have a few questions I would like to ask you:

1. Why do you think Alex; the researcher, wants you to see these photographs?

2. Do you think looking at photographs can teach you anything?

I am now going to ask you a series of four questions about each of these photographs. Remember, there are no right or wrong answers:

This is Photograph 1. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

This is Photograph 2. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

This is Photograph 3. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

This is Photograph 4. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

This is Photograph 5. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

This is Photograph 6. Take a few minutes to examine it:

- 1. What does this photograph make you think about?
- 2. How does this photograph make you feel?
- 3. Does this photograph make you want to do anything?

You have now seen all of the photographs. I have just a few more follow-up questions to ask you about the exhibit:

1. Now that you've seen all of the photographs, why do you think Alex, the researcher wanted you to see these photographs?

- 2. Do you think you learned anything from the photographs?
- 3. How did the group of photographs make you feel overall?

4. Is there anything else you would like to say about the photographs that I did not ask? Please feel free to say anything you think or feel about the photographs.

Thank you so much for your time today! Your answers are very important and appreciated.

APPENDIX E

PHOTOGRAPHY USE PERMIT

Alexandra Morrison 4407 W. Watrous Ave. Tampa, FL, 33629 813-215-4192 Carlton Ward Jr. 520 E. Davis Blvd. Tampa, FL, 33606 727-542-4052

I, <u>Carlton Ward Jr.</u>, herby give the researcher; <u>Alexandra Morrison</u>, permission to use the six selected photographs as part of a conservation photography exhibit, to be used only in the partial fulfilment of their Masters' of Science in Environmental Education thesis research through Montreat College.

Carlton Ward Jr.

Artist Signature

15 April, 2017

Date

APPENDIX F

PARENT/GUARDIAN CONSENT FORM

PARENTAL/LEGAL GUARDIAN PERMISSION FORM FOR CHILD'S RESEARCH PARTICIPATION

Study Title:

EXPLORING STUDENT IMPRESSIONS OF CONSERVATION PHOTOGRAPHS: A POTENTIAL STRATEGY FOR CLASSROOM ENVIRONMENTAL EDUCATION

Principal Investigator:

Alex Morrison, a graduate student completing part of the requirements for the Master of Science in Environmental Education degree from Montreat College.

Your child is being asked to take part in a research study. This form has important information about the reason for doing this study, what we will ask your child to do, and the way we would like to use information about your child if you choose to allow your child to be in the study.

What will this study involve and what is the purpose of this study?

Your child is being asked to participate in a research study aimed at gauging sixth grade student impressions of conservation photographs. Conservation photography is a field dedicated to promoting conservation through photography. These photographs are the result of a professional's photographic talent combined with environmental understanding and conservation commitment. The exhibit consists of six photographs showcasing wild Florida, in particular a series following the story of the Florida black bear. All photographs were taken by professional Florida-based conservation photographer Carlton Ward Jr.

The purpose of the study is to explore student impressions of conservation photographs in hopes that the resulting data will better inform environmental educators in using photographs to promote environmental learning in the classroom.

What will my child be asked to do if he/she participates in this study?

Your child will be asked to complete a questionnaire pertaining to their impressions of the photographic exhibit. General demographic information will be requested from your child, which includes name, age and gender. Names are requested on the surveys only to connect the consent forms to the questionnaires to ensure all study participants have parental consent. Participation should take a maximum of 25 minutes' time. All children participating will have the opportunity to view the photographs and answer the questions, but if you should desire your child's answers not be included in the study or your child does not return a signed consent form, their questionnaire will be discarded.

What are the possible risks or discomforts to my child?

Your child's participation in this study may involve some risk. Of the six photographs included in the exhibit, the final photograph depicts two bears killed as a part of the 2015 Florida bear hunt. This image does not contain gore, weapons, or any violent imagery, but may be disturbing to some students. The primary researcher and classroom teacher will be in the room the entire time during the viewing of the photographs should students have questions or concerns about the images.

What are the possible benefits for my child?

The possible benefits to your child from this study include the experience of exploring an exhibit of professional photographs and the opportunity to see images of wild places and animals across Florida that may be interesting to your child.

How will the information collected about my child be protected and shared?

Results of this study may be used in publications and presentations, however your child's name or personal information will never be used. All questionnaires will be secured in a locked drawer and names will be omitted from the questionnaires as soon as a unique identifier can be applied to them. The primary researcher will be the only person with access to the questionnaires containing names before they are omitted.

Financial Information

Participation in this study will involve no cost to you or your child. Your child will not be paid for participating in this study.

What are my child's rights as a research participant?

Participation in this study is voluntary. Your child may withdraw from this study at any time you and your child will not be penalized in any way or lose any sort of benefits for deciding to stop participation. If you and your child decide not to participate in this study, this will not affect the relationship you and your child have with your child's school in any way. Your child's grades will not be affected if you choose not to let your child participate in this study. If your child decides to withdraw from this study, the researcher will not use any information already collected from your child.

Who can I contact if I have questions or concerns about this research study?

If you or your child have any questions, you may contact the researcher, Alex Morrison at <u>amorrison@montreat.edu</u> (813) 215-4192, or the Faculty Advisor for this study, Dr. Brad Daniel at <u>bdaniel@montreat.edu</u>.

If you have any questions about your child's rights as a participant in this research, you can contact the following office at Montreat College:

Montreat College Outdoor Education P.O. Box 809 310 Gaither Circle Montreat, NC 28757

Or email Dr. Brad Daniel at bdaniel@montreat.edu

Parent/Legal Guardian Permission for Child's Participation in Research

I have read this form, and the research study has been explained in writing to me. I have been given the means to ask questions and I have been told whom to contact. By signing this form, I give permission for my child to participate in the research study described above and will receive a copy of this Parental Permission form after I sign it.

Parent/Legal Guardian's Name (printed) and Signature

Date

Child's Name

Parents, please be aware that under the Protection of Pupils Rights Act (20 U.S.C. Section 1232(c)(1)(A)), you have the right to review a copy of the questions asked or materials that will be used with students. If you would like to do so, you should contact Alex Morrison at amorrison@montreat.edu to obtain a copy of the questions or materials.

APPENDIX G

PHOTOGRAPHY EXHIBIT



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6