

**Why Do Wildlife Matter: Transforming Interview Information into Music and Video to Advance Environmental Conservation**

by

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## ABSTRACT

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As the human population rapidly increases, the pressures on wildlife to adapt to the changing landscape and to coexist with humans is also increasing. Understanding why wildlife matter to humans is critical in helping plan and execute conservation strategies as we move into the future. This research investigates why wildlife matter to a cohort of environmental professionals including retired and practicing wildlife biologists, as well as post-secondary students studying environmental science and studies, and explores the perspectives of Indigenous peoples on why wildlife matter to them and their culture. The qualitative research data was artistically transformed into video and song to showcase the research in diverse media. Study methods include conducting interviews, completing a literature review, as well as creating audio/visual tools to display the results of the data found within the study. This unique research initiative identified several significant findings, to conclude that wildlife matter to biologists, students, and Indigenous peoples for a variety of reasons. For example, personal perspectives on how wildlife play a direct role in their life, as well as the role wildlife play as part of the world's ecosystems in providing balance and stability to nature's processes. Inductive coding thematic analysis identified 5 themes within the data of why wildlife matter which includes 1) Ecosystem Importance 2) Resource for Humans 3) Personal Value – Happiness and Wellbeing 4) Recreational Purposes 5) Existential Purposes – Coexistence. The findings of the research were created into a video titled “Why Do Wildlife Matter?” and song “We Decide.” The creative works were awarded the 2020 Conservation Education Award through The Wildlife Society in recognition of outstanding media and audio-visual work which effectively conveys sound conservation concepts to the public. As a songwriter, musician, and wildlife biologist, this multidisciplinary research bridges several disciplines to better understand human motivations toward environmental conservation.

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*Dedicated to the flora and fauna species that do not have a voice to speak for themselves*

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## ABBREVIATION

TWS: The Wildlife Society

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# 1 INTRODUCTION

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## 1.1 General Introduction

Always remember the “why.” Whatever you choose to do in life, it’s important to remember and think about why you are doing what you’re doing and why it matters to you. The “why” can help provide inspiration, focus, motivation, and clarity, among many other benefits to your mindset. Earth currently has a human population of just over 8 billion people and is predicted to reach 9.7 billion by the year 2050 (United Nations, 2023.) As the human population increases, pressure is being put on wildlife species, both flora (plants) and fauna (animals) across the planet to coexist with humans and to adapt to the changing environment (Mekonen, 2020). Earth is currently facing a mass extinction of wildlife (Cowie et al., 2022). The 2022 Living Planet Report revealed an average decline of 69% in populations of mammals, birds, fish, reptiles, and amphibians since 1970 (World Wildlife Fund, 2022). Wildlife are affected by changes to the environment such as habitat loss and degradation, climate change, pollution of the air, land, and water, noise and light pollution, the increase in the human population and through urbanization. As well as through overexploitation of wildlife species, illegal wildlife trade and poaching, disease, and invasive species (World Wildlife Fund, 2022). As the human population increases, human wildlife conflict is also predicted to increase across the planet (Mekonen, 2020). All the issues when combined together create more or less a chaotic world. So how do we as humans best move forward coexisting on the planet with wildlife? Stopping and thinking about the “why” will provide some clarity in all the chaos.

### *Why do wildlife matter?*

The term wildlife has many definitions, some people think of wildlife as just fauna, while others consider wildlife to be both flora and fauna. The Cambridge Dictionary (2023) defines wildlife as “animals and plants that grow independently of people, usually in natural conditions.” Whereas The Merriam-Webster Dictionary (2023) defines wildlife as “living things and especially

mammals, birds, and fishes neither human nor domesticated.” This dictionary identifies that the first known use of the word *wildlife* was in 1879. A study by Maclean (2023) identified that there are inconsistencies and gaps within the understanding of the term wildness in Canada, which in turn impacts conservation efforts by the fact that there is no universally agreed upon understanding of wildness (Maclean, 2023). For this thesis, it’s important to note that we define wildlife as both flora and fauna species. But why do they matter? Everyone has their own opinion and perspective of what wildlife are and why wildlife matter to them. No matter where you are in the world, wildlife are around you. The problems that are impacting wildlife populations are on a global scale, and most importantly many of the problems wildlife face, we as humans also face along with them. As Dr. Wini Kessler, a well-respected and acclaimed wildlife biologist from British Columbia, Canada states, “*We are not separate from the natural world. We are a part of the natural world as are wildlife, so the fates of humans and wildlife are closely tied.*” This thesis investigates why wildlife matter to environmental professionals which include retired and practicing wildlife biologists, post-secondary students studying environmental science and studies, and to Indigenous peoples. This thesis is built upon the foundation of scientific and cultural perspectives. There is significance in asking the people who have dedicated their lives to protecting and conserving wildlife why wildlife matter to them. Wildlife biologists take on diverse job responsibilities depending on which species they study, such as wake up at the break of dawn to study the circadian rhythm of songbirds (Greives et al., 2015), stay awake all night catching bats to record variables such as body condition and health, collect hair or tissue samples for genetic analysis or attach tags to help identify individuals (C. Willis, personal communication, July 11, 2023), or study the changes within the Arctic ecosystem such as the decline in sea ice and how it is affecting the population of polar bears (Pagano et al., 2021). Wildlife biologists are the people trying to understand wildlife species and solve the complex issues that are impacting species on the planet and working to find ways to help protect, preserve, understand, and manage wildlife species. Post-Secondary students studying environmental science and studies are the next generation of environmental professionals, the next generation of decision makers on wildlife management and practices. Indigenous peoples and their culture are known to be keepers of the land and peoples who have respected the land, wildlife and resources for centuries (Datta, 2017). All these perspectives not only deserve to be documented but also deserve to be shared with the rest of the world. The public need access to their research, to their knowledge and passion for wildlife they

have to share. Historically, scientists have documented and shared their research through written text such as through books or scientific journals. There is no single approach to communication that will provide the greatest success (Weigold, 2001) as communication is highly dependent on the audience you are trying to reach. If stakeholders, policymakers, or the general public are the targeted audiences for sharing the knowledge of why wildlife matter, accepting the diversity within the audience is critical (Weigold, 2001). The audience will consist of a majority of non-scientists, which means that the wording and the methods that are used to communicate will be critical to the overall communication process. Presently, common communication media that are being used to promote wildlife conservation include the use of video, visual art/photography, performance art/music, infographics, social media, speaking/public outreach, press/popular media, blog, and curriculum (Cooke et al., 2017). (Burns et al., 2003) state that “science communication is most powerful when it causes participants to reflect on, and form, reform or affirm their attitudes to science and society.” Continuing to provide diverse communication tools and creative ways of sharing the importance of wildlife are critical to getting more people involved in wildlife conservation. As we continue learning about communication methods and practices, adapting our ways of communicating to help the audience comprehend the information and care about wildlife will be a critical piece of the conservation puzzle.

## **1.2 Background to the Study**

Within this thesis we investigate the question, ‘Why Do Wildlife Matter?’ An important question to ask that has the ability to inspire those who come across it. The theme of ‘Why Do Wildlife Matter’ originated during the 2015 annual conference of The Wildlife Society (TWS) that took place in Winnipeg, Manitoba, Canada. TWS is an international non-profit organization involved in wildlife stewardship through science and education. The organization, which was founded in 1937 by Aldo Leopold has grown over the years to become an international network of over 11,000 leaders in wildlife science, management and conservation who are dedicated to excellence in wildlife stewardship (The Wildlife Society, 2023a). TWS has hosted an Annual Conference since 1975, which brings together retired and practicing wildlife professionals, as well as student members who are the up-and-coming emerging biologists. The annual event provides networking opportunities through meetings, receptions, and working groups as well as nearly 1,000 educational opportunities to attendees that encourage discussion and collaboration

(The Wildlife Society, 2023b). Dr. Rick Baydack who is a Certified Wildlife Biologist, Past-President, and Fellow of TWS came up with the theme of ‘Why Do Wildlife Matter’ for the 2015 conference during his TWS presidency. I, Emily Thoroski, started this project as I had the passion to explore the theme of ‘Why Do Wildlife Matter’ further. In 2018, I had the opportunity to travel to the 25<sup>th</sup> Annual Conference of TWS in Cleveland, Ohio where I conducted and video-taped interviews with wildlife biologists, asking why wildlife matter to them. Since then, I have traveled across 4 provinces and 9 states in North America gathering my research data. The original idea to interview wildlife biologists grew to include incorporating the perspectives of environmental professionals, post-secondary students studying environmental science and studies, as well as Indigenous peoples. Interviews took place at various wildlife related events across the city of Winnipeg, Manitoba, as well as locations in southern Manitoba, Canmore, Alberta, Cleveland, Ohio, and Reno, Nevada. Events where wildlife biologists and students gathered to network and learn were the locations chosen to collect the interview data for this research. Such events included a mentored waterfowl hunt hosted by the non-profit organization Delta Waterfowl Foundation which took place at Delta Marsh in south central Manitoba in 2018, the 25th Annual Conference of TWS in Cleveland, Ohio in 2018, the Winter Getaway for the Manitoba Chapter of TWS in Pinawa, Manitoba in 2019, the Joint Conference of the Canadian Section of TWS and the Alberta Chapter of TWS in Canmore, Alberta in 2019, the 26th Annual Conference of TWS in Reno, Nevada in 2019, a white-tailed deer necropsy for University of Manitoba environmental science and studies students at TRAMP Farms in St. Adolphe, Manitoba in 2019, and at a Manitoba Environmental Industries Association (MEIA) Conference in Winnipeg, Manitoba in 2019. In 2019 the project continued growing and became my Master of Environment thesis topic. Data from the interviews was then analyzed and transformed into a video “Why Do Wildlife Matter?” and a song titled “We Decide.” I have performed “We Decide” and presented my research online and in-person at various locations across North America, specifically many within my community in Manitoba to elementary and high school students, as well as senior citizens. A list of publications is available to view in the publications section of this thesis.

### **1.3 Study Objectives**

The two main objectives of this study were to:

- 1) investigate and document the perspectives of why wildlife matter to environmental professionals, including retired and practicing wildlife biologists, as well as post-secondary students studying environmental science and studies, and explore perspectives of why wildlife matter to Indigenous peoples and their culture
- 2) transform the data gathered from the interviews into audio/visual tools to artistically showcase the findings of the research

### **1.4 Contribution to Knowledge**

My research has made a contribution to wildlife management and conservation as I have investigated and documented a sample of the perspectives of environmental professionals, students and Indigenous peoples in the early 21st century asking them why wildlife matter. Documenting the perspectives of human's opinions is significant to our history as a species living on this planet. Learning the perspectives of others can help present and future generations manage and conserve wildlife populations. This project investigated the question 'Why Do Wildlife Matter?' which is an important question that I found many of the participants within this study were intrigued by and agree with its significance. As wildlife do not have a voice to speak for themselves, this research takes the perspectives of the people who have dedicated their lives to educating the public and protecting wildlife species; a way of giving a voice to wildlife, giving a voice to the voiceless. Lastly, this unique research study took qualitative data and transformed it into video and song which received the 2020 Conservation Education Award through TWS for the artistic creation of the video "Why Do Wildlife Matter?" and the song "We Decide" (Photo 1.1).



Photo 1.1: Emily Thoroski holding up the ‘Conservation Education Award’ Certificate for her work in creating the video “Why Do Wildlife Matter?” and song “We Decide.” Photo taken by Kate Thoroski in Winnipeg, Manitoba in the Fall of 2020.

## 1.5 Combining Music and Science – How this Thesis Came to Be

I believe that mentioning my personal background is significant to this thesis and will help the reader understand why it turned out the way it did. I’ve always been a scientist and an artist at heart. At a young age, I became interested and passionate about nature and music. As I aged, my passion only grew stronger, but it wasn’t until age 19 when I started *appreciating* wildlife. My perspective changed from viewing wildlife as something that I love and care about into something that I want to dedicate my life to learning about, understanding, and protecting. As I entered university and learned about the issues wildlife are facing today, I knew this was something I had to do and wanted to pursue. Within the years of completing this project, I realized how significant the environment and music are to my purpose in life. As well as learn how music and science can be combined to help communicate scientific information to the general public. I learned about a term called sonification, which is a process that translates data into sound (Hook, 2017). Scientists use sonification to turn molecules into music by converting

DNA sequences and particle vibrations into notes that allow researchers to recognize unseen patterns within their research and create songs for outreach. A project led by Mark Temple, a molecular scientist at Western Sydney University who researches new drugs for cancer therapy wanted to showcase the data of his research for others to be able to hear. His method consisted of assigning each individual DNA “base” – the four building blocks of human DNA, labeled A, C, T, G to a musical note. The songs that were created were shared with the general public on music sharing platforms for them to have access to and be able to hear the research within the music. Another study involved composer Glenn McClure teaming up with researchers at UC San Diego’s Scripps Institution of Oceanography and Birch Aquarium at Scripps to transform seismic data from sensors placed on the Ross Ice Shelf in Antarctic into musical arrangements. The musical compositions were turned into an exhibit for the general public which featured videos, photos and music. The music was a way to “give a voice to the ice” (Hook, 2017). These projects inspired me as scientist and as a musician as I could see how other scientists were combining music and science to communicate their research to the general public.

In 2019, I gave myself the title ‘The Environmental Musician.’ Since 2020, I have taken part in programs within my community in Manitoba, Canada to spread the message of wildlife importance and to get more people involved in our mission of conserving the environment and the species within it. In 2022 I registered my business as a sole proprietorship and have started performing at various locations across Manitoba and posting my songs for others to hear on music sharing platforms such as YouTube, Spotify, Apple Music, and iTunes. As well, in 2022, I received funding from the Jane Goodall Institute of Canada to turn one of my ideas into a project which I titled ‘Music for Conservation.’ This project provided the opportunity for 4 musicians and 3 wildlife biologists from across Manitoba to present their music and their research to the general public, which included children, adults and seniors within the audience. There were three presentations that took place, two online and one in person at Oak Hammock Marsh in Manitoba. The project was a great success as we raised money for conservation and had over 200 attendees at our presentations. My objective is to share my passion of the environment and wildlife with those who will listen. I am applying for my Associate Wildlife Biologist Certification through TWS this year, so I look forward to furthering my career as a biologist and working alongside my fellow wildlife conservation friends and leaders. In the years to come, I plan to continue creating music, studying wildlife and doing what I love.

## **1.6 Why Wildlife Matter to Me**

To answer this question, it helps to close my eyes and picture a world without wildlife. Imagine walking out your front door in the morning and not seeing the squirrels scurry from tree to tree or not hearing the birds sing, not smelling the leaves as they fall off the trees in autumn or watching species adapt to the changing climate. Can you imagine a world such as this? I can imagine it, that's what scares me most and makes me want to wake up every morning and do what I can to help save our biodiverse world. A planet without wildlife would be like taking the colour out of the world and only seeing in black and white. Much like how the writers of "The Wizard of Oz" artistically captured the difference between Kansas and the Land of Oz (Vidor et al., 1939). As humans we have the ability to think, decide and act. I think we all have the responsibility to do what we can to conserve and protect the species we live on this planet with. This involves understanding the needs of wildlife and adapting our behaviour/lifestyle to coexist with the species that are here with us. In 2020, my research was featured in an article published by TWS. Below is a quote from the article on why wildlife matter to me.

"I have to stand up and speak for wildlife because they cannot speak for themselves," Thoroski said. "I try to creatively find ways to get the public involved in wildlife conservation, because I know that it is absolutely critical for humans moving forward as a species on this planet. Most importantly, we should protect and conserve this natural world and the species within it, not because we have to but because we want to" (Kobilinsky, 2020).

## **1.7 Thesis Organization**

This thesis contains five chapters. Chapter 1 is an introductory chapter that includes a general introduction, description of the study, study objectives, contribution to knowledge, combining music and science – how this thesis came to be, why wildlife matter to me, and concludes with the thesis organization. Chapter 2 provides a description of the methodologies used in the research such as the data collection methods, informed consent, the interview process, recording and storing the data, as well as a section on the supporting references and the methods used in creating "Why Do Wildlife Matter?" and "We Decide". Chapter 3 contains the results of the study which include the results from the interview process as well as the creations

of the video and song. Chapter 4 provides the analyses of the study which compares and contrasts the findings from the literature review to the findings from the interviews and explores the interview information further, as well as “Why Do Wildlife Matter?” and “We Decide”. Lastly, Chapter 5 contains the summary, conclusions, and future research recommendations.

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## 2 METHODOLOGIES

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### 2.1 Supporting References

Saint Mary's University (2022) states that a literature review examines existing knowledge on a given area of study and can provide a summary and insight on what has been investigated, argued, and established about a topic. By conducting a review, the reviewer can identify certain weaknesses or gaps that are missing in the existing literature and help to fill in the missing information in the research. Literature reviews can also assist the research in providing support to its importance and validity. Researchers can use literature reviews as a method while conducting their own studies to help identify previous and current research in their topic of study (Saint Mary's University, 2022). A literature review was completed for this study to provide credibility and compile research that has been done on investigating why wildlife matter, as well as looking at how video and music are being used as tools to showcase scientific research. Online resources as well as textbooks were used to gather data to complete the literature review. The method of analyzing the information collected for the literature review was done by reading the material and adding information that centralized around themes of this research and added information that was required to bring pieces of this study together to build upon its strength and credibility.

Video and music were used within this thesis as communication tools to showcase the data from the interviews. Video is an electronic medium for the recording, reproducing, copying, playback, and broadcasting of moving visual images (Terra, 2023). Researchers use video as a method to showcase and document their research. A study by Walker and Boyer (2018) identified that the use of video as a tool for collecting data and capturing reflection from participants is often used in mixed methods research. Video can be effective in helping to share the research findings to a broad audience. Within their study they found that previous research has used video as a tool mostly for data collection and analysis, but they identify that there are opportunities to use video that many researchers haven't taken advantage of in the past, such as

to disseminate the results of the research. Using video can effectively assist researchers in communicating their work to an audience within academia as well as to the public. Walker and Boyer state that incorporating effective storytelling techniques, documentary filmmaking and staying true to the original analytical methods of the research design is critical in the process of using video to present the results of a study. Many wildlife conservation organizations use video as a way to communicate to the general public and create awareness and support for their mission and the work that they do. For example, Ducks Unlimited is a non-profit organization that works to conserve, restore and manage wetlands and associated habitats for North America's waterfowl (Ducks Unlimited, 2020). The environmental organization uses video as a tool to help promote their work and conservation message to the public. Using video as a promotional technique has its advantages as it is a quick and visual way for an audience to learn about a topic, as well as helping in fundraising initiatives for an organization (Terra, 2023). TWS began a project in 1999 called Capturing Our Wildlife Conservation Heritage (COWCH) with the objective of preserving the history and evolution of the wildlife profession by interviewing influential and pioneering wildlife biologists, educators, and managers. To date, over 150 interviews have been completed which were videotaped to help conserve and document the perspectives of wildlife professionals (D. Svedarsky, personal communication, February 4, 2021).

(Ezquerria, 2020) states that music is vocal or instrumental sounds (or both) combined to produce beauty and expression of emotion through rhythm, melody, and harmony. Music can be written and/or produced for many purposes such as for expressing oneself and their emotions, providing people with the opportunity to be creative, communicating a message, providing entertainment, and it plays a significant role in culture (Ezquerria, 2020). Music is a universal communication tool that many cultures and people across the planet listen to during their daily lives (Jäncke, 2008). From the earliest of times, humans have used music as a method of communication (Meill et al., 2005). Many indigenous cultures use music as a method to communicate, socialize, and celebrate within the community. Traditional drumming and singing takes place during ceremonial practices (James, 2018). A Stanford study by (Baker, 2015) showed that music engages sections of the brain which are involved with paying attention, making predictions and helping memory functions. Music has proven to show benefits in the process of learning such as increased focus in listeners. A study at John Hopkins University

showed that incorporating music into a classroom environment created a positive learning experience and improved memory while increasing attention (Riotta, 2016). A study by (Särkämö et al., 2008) identified that “music helps brain cells process information and facilitate the brain’s ability to adapt.”

Songwriting is a technique musicians use to communicate their art. Musicians can write their songs in a variety of ways such as by using inward reflection or outward messaging (Jäncke, 2008). Inward reflection involves writing lyrics that are personal feelings or stories from the artist that they want to express to their audience. Outward messaging involves the artist sending a message through the lyrics that can be in the form of information and/or a hidden meaning behind the lyrics (Jäncke, 2008). The environment has been an inspiration to musicians across the planet as they have written and performed environmental songs. Music and lyrics can be written on the topic of the environment or environmental conservation through inward reflection identifying the artists personal feelings toward the environment or by outward messaging where the artist uses the lyrics as a method of sending an environmental message. Musicians such as Johnny Cash, Neil Young, Joni Mitchell, and Eagles have incorporated environmental issues into their lyrics within their songs. Johnny Cash discusses the issues we face around water pollution in his song “Don’t Go Near the Water” (Cash, 1974). Neil Young discusses environmental issues that humans are causing on Earth in his song “Who’s Gonna Stand Up,” stating that we all need to stand up for nature and do our part to conserve the environment (Young, 2014). Joni Mitchell discusses the use of DDT as a pesticide in the 20<sup>th</sup> Century and how human activity is destroying the natural world in her song “Big Yellow Taxi” (Mitchell, 1970). The band Eagles released a song called “The Last Resort” in their 1976 Album *Hotel California*. Don Henley who co-wrote the song along with his bandmate Glenn Frey stated that “the song is about that when humans find something good, they destroy it — by the very fact that man is the only animal on earth that is capable of destroying his environment” (Rolling Stone, 2015). The above noted songs provide an example of how music, as well as musicians can act as a voice for the environment. Musicians are also great advocates for the environment as many have been raising awareness and addressing publicly that they support initiatives in helping reduce impacts to the environment from issues such as global warming, climate change, and environmental destruction. In 2019, the musical group Coldplay stated, “Our next tour will be the best possible version of an eco-friendly tour”, while other artists also ban plastic straws at

their shows, encourage fans to bring refillable water bottles and reduce greenhouse gas emissions by biking or busing to their shows (Mia, 2020). Music Declares Emergency is a group of artists, music industry professionals and organizations that work together to demand systemic changes to the way humans treat the Earth and our resources (Music Declares Emergency, 2023). They believe that music along with the music industry has the power to “promote the necessary cultural changes to create a greener, fairer, and better future”. The group formed in July 2019 in the UK and has quickly grown to include 6847 organizations, artists, and individuals across the planet. A few members of the group include Billie Eilish, The New York Times and BBC Radio (Music Declares Emergency, 2023). Music can also be a great communication tool to create awareness for an environmental issue. Most recently on February 16<sup>th</sup>, 2020, an event called ‘Fire Fight Australia’ took place to raise funds to help efforts involving the wildfires that burned in Australia from September of 2019 to February 2020. The event raised 9.5 million US and featured artists such as Alice Cooper, Michael Bublé, as well as Queen and Adam Lambert (Brandle, 2020).

Music also contributes to the way people view wildlife species. A study by (Nosal et al., 2016) identified that background music within a video can affect viewers’ attitudes towards sharks. Their research showed that participants rated sharks more negatively after viewing a 60-second video of swimming sharks set to ominous background music, compared to participants who watched the same video clip set to uplifting background music, or silence. (Nosal et al., 2016) identify the importance of music choice in popular movies or documentaries and note that documentary filmmakers, as well as viewers need to be aware of how the soundtrack can affect the interpretation of the educational content. After the film “Jaws” was released in 1975, the number of large sharks in the waters east of North America declined by about 50 percent (Germain, 2022). The well-known ominous background music used in the film helped to create the terrifying killer shark to scare audiences around the world, which in turn created a fear of sharks and contributed to a massive decline in their populations. There are many ways people view environmental music. During the 1980s, a Japanese genre of music was introduced as a response to the rapid urbanization and economic development (Goldstein Music Limited, 2022). The genre of music is called Kankyō Ongaku, or “environmental music”, and consists of minimalist electronica infused with ambient sounds of nature (Goldstein Music Limited, 2022). Tarun Nayar, a musician from Montreal, Canada is quite creative in his methods of creating

music from nature as he uses “various techniques to harness the bioelectricity of the plants and Earth’s natural resonance that is beyond the audible spectrum of the human ear” (Khan, 2022). Nayar has gone viral on social media platforms as he releases videos of mushrooms singing. He accomplishes this by connecting cables to various leaves and mushrooms within a forest environment. Nayar states, “The plants are not creating any music themselves. I use the movement of water inside these plants as electrical resistance. When I plug circuit cables to them, even small changes in the said resistance due to the plant’s natural bioelectric charge manifest as notes of music” (Khan, 2022).

A project led by PAMS Foundation identified that a great way to engage people is to use the specific cultural tools that culture offers. In Tanzania, Africa for example music accompanies all phases of life, and it is always present in the daily life. Within that culture, music and songs are very powerful tools for conveying messages. In 2018, farmers in Tanzania were having issues with elephants entering and disturbing their crops (Sustersic, 2019). PAMS Foundation which is a non-profit organization that works towards empowering the people who protect wildlife suggested putting up chili fences around the crops as research has proven that chili fences have been a successful technique used to keep elephants out of agricultural crops as elephants get irritated from chili powder. A song was created by local artists in Tanzania with the purpose of encouraging farmers to put chili fences around their crops. The results of the project were successful and showed that after the song was released on local radio there was an increase in farmers putting up chili fences in the area (Sustersic, 2019). Radio was an effective communication tool as it is the most popular way of communication in rural areas of Tanzania. Many of the local people used the song as ringtones for their phones and the song was enjoyed by the community at large (Sustersic, 2019). This example identifies how music has been used as a tool to send a message within a community. The local artists wrote the song knowing that the farmers were their intended audience. Proving that it is important to keep in mind the targeted audience while communicating a message and that it fits with the purpose of the initiative.

In 2011, the David Suzuki Foundation which is a Canadian non-governmental organization dedicated to environmental advocacy and education released a project called *Playlist for the Planet*, which brought together songs of Canadian musicians that have environmental themes. A nation-wide contest was held to gather songs from musicians that have

incorporated lyrics about the value of nature and the environment. The project was initiated to showcase the creative tool music plays in identifying and creating awareness for environmental issues and to bring together the songs into an album (David Suzuki Foundation, 2014). A study by Publicover (2016) explores how music can be used to encourage environmental-friendly behaviour. Publicover interviewed the musicians who contributed songs to the David Suzuki Foundation Playlist for the Planet to investigate their inspiration for writing and producing the environmental themed songs, as well as what they recommend to other musicians when creating songs about the environment. The results of the study show the musicians recommend “to avoid preaching, recognize the many creative musical “hooks” with which to captivate audiences, make high-quality music, use the music in a way that is relevant and meaningful to the audience, and ensure that any environmental sentiments expressed through the art are sincerely and authentically held” (Publicover, 2016). The study shows that the participants feel that an important part of singing about the environment is being true to your musicianship, writing from the heart and using your personal knowledge, experience, and beliefs.

### **2.1.1 Creating the Video “Why Do Wildlife Matter?”**

I reviewed and studied the video clips of each interview and created a short film called “Why Do Wildlife Matter?” As I watched each video clip, I made notes on important quotes and findings from the participants' views on why wildlife mattered to them. I then emailed my participants the clip of their video and asked if they could send me photos that I could use as B-roll within the short film. A storyboard for “Why Do Wildlife Matter?” was created and the selected clips were edited together with the photos provided to create the short film using the video editing software Adobe Premiere Pro. A 12-minute version, as well as a 28-minute version of “Why Do Wildlife Matter?” was created. I edited a clip of my song “We Decide” into the ending credits of the 12-minute version. The videos created for this study were uploaded to the video-sharing website, YouTube.

### **2.1.2 Creating the Song “We Decide”**

The songwriting process involved re-watching the interview video clips and identifying key themes to combine into an environmentally themed song, which included music and lyrics. An acoustic guitar was used as the primary instrument to create the melody and vocals were used to create the lyrics. Certain quotes from the interviews inspired lyrics within “We Decide.” The song was analyzed by investigating how other scientists are using music to showcase their scientific research and by exploring the song in detail.

Presenting and performing this research was an important method I used in showcasing the information to the general public and to cohorts of biologists across North America. I took part in various programs and collaborated with organizations to share this research with audiences. The first showing of “Why Do Wildlife Matter?” took place at the 26th Annual Conference of TWS in Reno, Nevada in the fall of 2019. I created and printed a promotional poster (Appendix A) prior to the presentation. Posters were taped up on walls in the Reno-Sparks Convention Centre to promote the presentation one day before it took place. I presented the 15-minute presentation which included the background of the research project, critical findings, and the 12-minute version of the film which includes a clip of “We Decide” within the credits of the film, as well as a Question-and-Answer session to conclude. Interview participants were invited via email to attend the presentation, of which 14 participants showed up to watch. A group photo of the participants that showed up to the presentation was taken following the presentation (Photo 2.1), not all 14 participants were in the photo.



Photo 2.1: A Group Photo at the First Screening of “Why Do Wildlife Matter?” at the 26<sup>th</sup> Annual Conference of TWS in Reno, Nevada, September 2019. Photo taken by Jessica Lang.

## 2.2 Data Collection Methods

Quantitative studies generally depend on larger samples selected randomly whereas qualitative studies typically focus on smaller sample sizes that are selected purposefully (Palinkas et al., 2015). The purpose of each sampling technique in this study is unique and was chosen based on where the purpose of the study lies. Purposeful sampling involves studying information-rich cases which can assist the researcher in investigating the questions under study by learning in depth on the issues of central importance (Patton, 1990). This study takes a Combination Sampling approach that meets multiple interests and needs of the study. The three sampling methods used were snowball sampling, selective sampling, and opportunistic sampling (Patton, 1990). *Snowball or chain sampling* is a method that is used to gain data from information-rich cases by asking informants who is best to ask next to gain more information on the topic. *Opportunistic sampling* involves gaining data when the opportunity arises and to take advantage of opportunities as they unfold for the researcher. *Purposeful or selective sampling* identifies and selects individuals or groups of individuals that are experienced and

knowledgeable in a phenomenon of interest (Cresswell & Plano Clark, 2011). Availability and willingness to participate is critical in purposeful sampling, as well as the ability to communicate experiences and opinions in an articulate, expressive, and insightful manner (Bernard, 2002; Spradley, 1979). Interviews are one of the most used qualitative research methods to collect data and is a method that is used across many fields of academia. The process of interviews involves two or more people exchanging information through a series of questions and answers. In the environmental field in particular, interviews have been used within studies to investigate human perspectives on topics such as environmental disasters, climate change, air pollution, and wildlife management practices (Scammell, 2010). Interviews have the ability for researchers to gain access to a participant's experiences, memories, and feelings. This data can be critically important to environmental researchers in learning what is important to people and using that to manage environmental issues and conserve our resources for the future. This study used semi-structured interviews as a data collection method. Semi-structured interviews involve asking the participant a few consistent questions where the researcher can ask follow-up questions on the topics being discussed (Price et al., 2013). This approach was selected as it creates an organized interview process with a script of questions for the researcher to ask but also allows the interviewer or interviewee to incorporate questions and answers thought of at the time of the interview. This method of data collection was critical to gathering the information needed for this study. Interviews took place outside (Photo 2.2), as well as indoors (Photo 2.3) at various conferences. The methods used to analyze the interview data consisted of video playback, transcription and identifying themes from the interviews. Inductive coding thematic analysis, which is a qualitative analysis method, was used to identify 5 themes within the data that will be stated in the results section. An inductive approach generates themes based on raw data, whereas a deductive approach generates themes based on theory or prior research (Boyatzis, 1998). Video playback helped in the process of transcribing and coding the data, as it gave me the opportunity to watch each recorded interview and directly take quotes from the interview. The inductive coding process allowed me to determine themes by recognizing patterns within the transcribed data. The 5 themes were identified within the data, labeled with a number 1-5 and then were given a name to categorize each theme.



Photo 2.2: Interview at Delta Marsh in Manitoba with Jim Fisher, Biologist, and Director of Conservation Policy at Delta Waterfowl Foundation. Photo taken by Emily Thoroski in the fall of 2018.



Photo 2.3: Interview at the 26<sup>th</sup> Annual Conference of TWS in Reno, Nevada, with Serra Hoagland a Tribal Relations Specialist, Liaison Officer, and Biologist with the U.S. Forest Service. Photo taken by Emily Thoroski in the fall of 2019.

## **2.3 Informed Consent**

Participation in this study was voluntary and no one received compensation. Prior to each interview the interviewee was asked to read and sign the Informed Consent Form (Appendix B), as well as the Photo/Video Release Form (Appendix C). The Informed Consent Form included the following: the reason and objectives of the study, what the information was being gathered for, and an understanding that the participant was releasing their confidentiality. The interview process, questions and forms were submitted, reviewed and approved by the Joint-Faculty Research Ethics Board (JFREB) at the University of Manitoba. The Ethics approval (Appendix D) was granted on December 6th, 2018, and renewed each year until the completion of the study.

## **2.4 The Interview Process**

Interview questions were prepared in advance on the topic of environmental conservation, in particular with a focus on investigating personal perspectives on the topic of wildlife, wildlife management and why wildlife matter (Appendix E). At the beginning of the study, I audited a Filmmaking course at the University of Manitoba in the fall of 2018 to gain experience using filmmaking equipment and to understand the rudiments of cinematography, editing, and lighting. Wildlife related events such as conferences and networking opportunities are where I approached interview participants and asked if they would like to participate in the study. If the answer was yes, we found a quiet place in the area to complete the interview. There were no participants that said no to participating in the study. Prior to each interview the interviewee was asked to read and sign the Informed Consent and Photo Release Forms. The interviews consisted of one-on-one semi-structured interviews and were recorded via video camera. Participants were either asked directly by myself or were referred to me by wildlife biologists or previous interviewees. Participants were asked to participate in the study based on their interest and knowledge in wildlife conservation. This included environmental professionals, retired and practicing wildlife biologists, post-secondary students studying environmental science and studies, as well as Indigenous peoples. The list of interviewees can be found in Appendix F. This study incorporated 48 participants of various ethnicities, such as Asian, Indigenous, and Caucasian.

## **2.5 Recording and Storing the Data**

The interviews were recorded using a VIXIA HF G30 HD Canon Camcorder, a tripod and a Sennheiser EW 100 G3 Wireless Microphone System. Each video clip contains a visual moving image, as well as audio from the interview and surrounding sounds. Interview data was stored on a Secure Digital (SD) card and then downloaded onto my computer hard drive to view and analyze. The video data was not destroyed following the completion of the study.

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## 3 RESULTS

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### 3.1 Introduction

The results of this study are organized to first showcase the interview findings which include the main thesis question ‘Why Do Wildlife Matter?’ and then showcase the results of additional questions that were asked during the interview process such as the topics ‘Hope for the Future of Wildlife’, and ‘Investigating Perspectives of Why Wildlife Matter to Indigenous Peoples’. Lastly the chapter will conclude with a section on the results from transforming the qualitative data from the interviews into audio/visual media.

### 3.2 Interview Findings

#### 3.2.1 Why Do Wildlife Matter?

During each interview, the interviewee was asked the question “Why do Wildlife Matter to you?” Each participant answered the question in a unique way elaborating on why wildlife mattered to them personally. All answers were different from each other, but the answers had common variables that were mentioned. While analyzing the data, 5 themes were identified as the major themes that were mentioned within the responses from the participants. The 5 themes are listed as follows: “Ecosystem Importance”; “Resource for Humans”; “Personal Value - Happiness and Wellbeing”; “Recreational Purposes”; “Existential Purposes - Coexistence”.

#### Ecosystem Importance

Within this study the theme “Ecosystem Importance” identifies how wildlife and wildlife habitat play a vital role in the ecological and biological processes that are essential to life on Earth and are a critical component to functioning ecosystems, as well as to human life. When analyzing the data, this theme was identified when participants stated words and phrases such as “Life cycles”, “Process of growth”, “Interactions”, “Symbol of ecosystem importance”, “Improves the quality of life”, “An indicator of a healthy ecosystem”, “Creates biodiversity”, “Food web”, “Part of a system”, “Creates stability in the environment”, “Helps life function”,

“Sustain the natural world”, and “Balance of nature”. When asked why wildlife matter, 25 of the 48 participants within this study specified that wildlife matter to “Ecosystem Importance,” which is 52.1% of the participants. Many participants described wildlife to be a part of a puzzle within the planet’s overall system. Bill Noble a wildlife biologist from Arizona, United States stated, *“As humans, we forget that we’re one part of the planetary puzzle. Wildlife are a reminder that we live in a system. It’s good to be aware that we may dominate the planet but we’re only a part of it. Each species is a unique living thing.”* Krisha Faw Whiting a wildlife biologist from Georgia, United States also commented stating *“I like to look at the ecosystems as a whole and I know that they are part of a web. A lot of my background is in general natural resources and they’re part of that puzzle piece in there. Without wildlife we wouldn’t have the complete puzzle.”* Participants mentioned that wildlife have needs and we as humans must understand and respect those needs. Our respect and appreciation for wildlife will be critical in helping co-exist with wildlife species on the landscape. A wildlife biologist named Tsuyoshi Yoshida from Sapporo, Japan mentioned how wildlife matter to the Japanese culture because *“wildlife are a part of us, we are not separate, we are all in one system together.”* Tsuyoshi went on stating that biologists need to collaborate and communicate on an international scale to protect and conserve wildlife populations as we all have similar issues and can learn from each other to help manage those issues. Dr. Wini Kessler, a Certified Wildlife Biologist from British Columbia, Canada stated *“Wildlife like us are dependent on the same ecosystems. We have strong connections between us. We’re all in this together. We are not separate from the natural world. We are a part of the natural world as are wildlife, so the fates of humans and wildlife are closely tied.”* When asked why wildlife matter, one of the responses from Dr. Erin McCance, a wildlife biologist from Winnipeg, Canada was *“I see wildlife as a critical component of a system, as much as we are a critical component of that system. Our prosperity depends on that system remaining intact. Wildlife are a critical part of the integrity of that system.”* Many biologists mentioned the fact that wildlife species are indicators of the health of the environment. Gary Potts, a Certified Wildlife Biologist from Illinois, United States commented on this topic stating *“Wildlife are like watching the weather channel and barometer, it’s just knowing if the fish and wildlife populations are healthy that the environment is doing okay. It’s of paramount importance for us to appreciate the health of wildlife populations. Having them for future generations is something we should all strive for.”*

## Resource for Humans

The theme “Resource for Humans” was identified when participants would talk about how wildlife are a resource for humans in terms of food, hunting, fishing, and trapping. It is important to note that hunting, fishing, and trapping are activities that can be a resource for humans as well as a recreational activity. Within this study, there were a few cases where there was no distinction of if the participant does one or the other, or both, therefore when the words “hunting”, “fishing”, or “trapping” were spoken by a participant it falls under both categorical themes “Resource for Humans” as well as “Recreation.” When asked why wildlife matter, 9 of the 48 participants within this study specified that wildlife matter as they are a “Resource for Humans,” which is 18.8% of the participants. Participants mentioned that wildlife are an important food source for humans, especially for many First Nations who still depend on wildlife as a resource to feed their families. Harvesting and gathering of resources from the land were mentioned as an important use of wildlife. Don Barnes, a Certified Wildlife Biologist from Ontario, Canada stated *“it’s important that we realize that we can utilize it and that gives us a chance to manage species. I’m a real proponent of making use of wildlife but doing it in a very wise manner. It’s ingrained in me to teach people about that as long as we use it wisely it should be around forever. A good example is trapping and furbearer management. At one time the populations were dive bombing, in the 1940s the Ministry of Natural Resources in Ontario decided something had to be done. They went to every community across Ontario, and they got a meeting together to discuss which areas everyone traps in, as initially before anyone could trap anywhere. They had this trapline idea, if they had trapping areas for each trapper that would help avoid the conflicts that were going on. Since establishing traplines it’s been fantastic, the beaver population and all the furbearer populations have increased. It’s nice being a part of a success story.”* As well, Dr. John McDonald, a wildlife biologist from Massachusetts, United States commented on how wildlife matters to him, *“I grew up as an only child, I spent a lot of time in the woods - hunting, trapping, and fishing. I’ve always been interested in that. It was later near the end of my high school years when I realized it was an actual profession, that people studied wildlife for a living, it seemed like a natural fit, it was inclined with all my interests in natural history and science and being able to figure out how the world works.”* Within this topic of wildlife being a resource for humans, participants identified the important role that hunting plays in their life. Many participants mentioned how hunting is a great way to

obtain food to cook and eat, as well as the role hunting plays in building and sustaining relationships with friends and family. Jim Fisher, a wildlife biologist from Winnipeg, Manitoba said *“Wildlife and the environment are very important to me as a person, that’s really what drives me, it’s my big passion in life, as a hunter and a conservationist. I think it all started as a kid just getting outdoors and spending time with my family, and now it’s family and friends, that we look forward to being outdoors all year round. Especially for me duck hunting is my big passion. Once the fall comes, I’m just jazzed to be outside and be with all my friends spending time on the Delta Marsh and other great places in Manitoba that have incredible duck hunting opportunities.”* Brandon Leost who was an undergraduate student at the University of Manitoba in Canada states *“Hunting is important to me because it gives me a chance to get outside and get outdoors and connect with Mother Nature. It gives me time to bond with my brother and my father, who taught me at a very young age, I believe I was 8 when I first fired a shotgun. It’s something I believe shapes you into who you are, and I believe that everyone should get a chance to try waterfowl hunting. It’s not just the sportsmanship of going out and taking the bird, it’s the process, it’s the drive there, it’s cleaning the birds, getting your equipment together, it all makes it worthwhile. When you take it feels like you’re giving back by coming out and doing your part.”*

#### Personal Value - Happiness and Wellbeing

This category formed as many participants stated that wildlife are important to their happiness and wellbeing. Participants in the study stated that wildlife matter to them for personal reasons such as the fact that they value wildlife. The words and phrases that were used within this theme were “Joy,” “Love,” “Value,” “Fascinating,” “Comforting,” “Excited,” “Part of who I am,” “Enriches life,” “Curious,” “Passion,” “Peace,” “Enjoy,” “Grounds you,” “Inspiring.” When asked why wildlife matter, 32 of the 48 participants in the study stated that wildlife matter because they contribute to their “Personal Value - Happiness and Wellbeing,” which is 66.7 % of the participants. Participants mentioned that wildlife makes them feel joyful and excited. They are fascinated by wildlife and want to learn more about them. Many participants stated that just being in nature calms them and makes them feel grounded, comfortable, and at peace. Many participants used the word “emotional” when describing how wildlife makes them feel. They wouldn’t want to live in a world without wildlife. Harriet Allen, a wildlife biologist from

Olympia, Washington comments *“Wildlife is a part of my soul. Ever since I was a little kid, I experienced the wonder of wildlife. I have had a connection to wildlife. It brings me joy. I am curious about it. I think wildlife enriches our lives and makes people have an appreciation for something greater than themselves.”* Ed Thompson, who was the Chief Executive Officer of TWS from 2017-2021 commented *“Technology has removed us from nature and wildlife. There’s something about seeing wildlife in a natural setting that grounds you, it takes you to something foundational in your soul that you often forget about in the busyness of the day.”* The word “value” was also one that came up quite often in their responses. Many commented on the important role wildlife plays in their life. Wildlife are a part of their value system and “within their genetic code.” Practicing and retired environmental professionals, as well as post - secondary students noted how they became interested in wildlife at an early age and continued being passionate about nature throughout their life. Joe Youtz, a graduate student from Arkansas State University said *“wildlife matter to me because I come from a family that has been involved in nature, my dad’s a forester so I’ve always been out in nature. I’ve always been fascinated by animals since I was a kid. I’ve always wanted to learn more about animals and do everything I can with animals. Wildlife are engrained in something I really care about and part of who I am. I hope they can be part of the world to come.”* Selma Glasscock, a wildlife biologist from Sinton, Texas, United States commented on how wildlife matter to her stating *“I wouldn’t know life without wildlife. Wildlife and natural resources to me are what makes us human. I don’t know anything different than that.”*

### Recreational Purposes

Many participants in the study discussed how wildlife matter to them for recreational purposes such as bird watching (observing wildlife), hunting, fishing, camping, hiking, and photography. When asked why wildlife matter, 12 of the 48 participants in the study stated that wildlife matter for recreational purposes, which is 25.0 % of the participants. Participants discussed how these outdoor recreational activities would be something they would do with family and friends, an important opportunity for learning and connecting with others, as well as a time to connect with the outdoors and the wildlife around them. Jodie Provost, a wildlife biologist from Minnesota, United States commented that *“Wildlife are what make people care about the environment. Wildlife connect people to the outdoors and the land.”* Participants

discussed how these recreational activities build community and have the ability to bring people together. In many responses, the participant would involve a story when discussing a trip or vacation they took and how they built memories that impacted who they are today; memories they will remember for the rest of their life. Kerrell Dunsmore, a consulting meeting planner for TWS from Phoenix, Arizona, United States stated *“Wildlife has mattered to me my whole life. When I was a kid, I was the only girl in an all-boys fishing club and I was raised in the outdoors, fishing, hiking, camping – that’s how my family spent our vacations every year growing up.”*

### Existential Purposes - Coexistence

Within this theme the responses included the fact that wildlife matter because they exist and exist on this planet with us here at this time. The use of the word “Coexistence” helped form this theme, as well as words and phrases such as “Future generations,” “Want my kids and grandchildren to have,” “Responsibility,” “Respect,” “Protect,” “Conserve,” “Solving problems,” “Extinct,” “Wildlife have rights.” When asked why wildlife matter, 22 of the 48 participants in the study stated that wildlife matter for existential purposes, which is 45.8% of the participants. Participants within the study discussed the importance of human and wildlife coexistence on Earth. Many stated that it is our responsibility to conserve wildlife for generations to come so that the generations to come have the same wildlife resource as past generations. Responses included the fact that humans are the species on Earth that are dominating the ecosystems – in most cases they’re doing what’s best for their species and all other species are of second thought or no conscious thought at all. Therefore, many wildlife biologists answered how they feel the responsibility to share their knowledge with the world. Many biologists and students emphasized the importance of educating the general public. They stated that the proportion of biologists on this planet is very small when compared to the population of 8 billion people. Dan Svedarsky, a retired wildlife biologist from Minnesota, United States comments *“We have to educate everyone because often times its people who know nothing about wildlife that will exert the biggest impact on the habitats that wildlife depend upon. We can’t just do that by educating into their head, we also have to tap into their heart.”* Environmental Education (EE) came up quite often as a topic when participants were asked why wildlife mattered to them. Remi Pattyn, an undergraduate student from Colorado State University studying Zoology, Fish and Wildlife

Conservation Biology said *“The Wildlife field is so relatively small compared to what everyone else does. As much as we really hark on it to each other and the people around us, it will never be enough to make any really big changes. The only way we will be able to change things is if we get the rest of the people involved. Getting people involved and aware is the best way we can start driving change, conservation and protection of species and environments.”* Participants mentioned their families and how it’s important for their kids and grandchildren and future family members to have wildlife in their lives. Harriet Allen stated, *“I want to preserve it. I want my granddaughter to be able to see wildlife. We as humans have a connection with wildlife. It’s something very innate and primal with us. We have the capacity to eliminate wildlife and wildlife habitat, but we also have the capacity to protect it and restore it and be able to hopefully share it with future generations. We look back at what people have done in the past and what’s happened to species that aren’t here anymore, that we don’t get to see anymore. I think we should do everything we can to make sure that future generations have wildlife available to see. We share the planet with wildlife and wildlife habitats. It’s important for us to make sure we do everything we can to protect it and to see that they continue to share the planet with us.”* The topic of wildlife rights came up a few times in the answers of the participants. Many commenting on the fact that wildlife have the same rights as humans do to exist on this planet and are entitled to the natural resources on this planet to be able to exist and thrive within their habitats. Bill Noble states *“Most every species has a right to flourish on this planet and that’s obviously not happening. It’s a reminder at several levels of how incredible life is.”* Sonja Barber, an undergraduate student from Colorado State University studying Zoology, Fish and Wildlife Conservation Biology agrees with this topic by stating *“Wildlife is so important because I think every organism in my opinion has the right to be here. The public involvement is absolutely critical in having any kind of impact in terms of conservation, preservation or sustainability.”*

### **3.2.2 Investigating Perspectives of Why Wildlife Matter to Indigenous Peoples**

One of the objectives of this study was to investigate the perspectives of Indigenous people on why wildlife matter to them and within their culture. Many participants discussed that wildlife are spirit animals within their culture and help guide them through life. Wildlife are important to their storytelling and are within their stories which are passed down by generations.

Participants mentioned how wildlife are within their dreams and are seen as teachers and guides to their people in helping to identify their path through life. Protecting and harvesting from the land is important. If you take from the land, you have to give back to the land and help conserve the natural resources that are here with us. The responses of the participants are stated below.

*“Wildlife matter to me because, from a native perspective, wildlife are seen as our ancestors and things we’re related to. My family is of the Roadrunner Clan and so we’re named after this wildlife species, we have a real tight connection there. A lot of our stories, songs, and prayers are based off of wildlife and their life ecology and their habitat. From a cultural perspective, wildlife matter a lot significantly to our people.”*

- Serra Hoagland (PhD, USDA Forest Service, Tribal Relations Specialist)

*“Hunting and living off the land is extremely important especially to indigenous culture. It’s a way of life for us. Hunting is the most sustainable way of living especially out on the land as indigenous people in our communities. It’s also about our food sovereignty and plays a vital role in health. Before contact, our people never had the same health concerns as they have now such as diabetes and high blood pressure. I think really promoting living off the land and that type of food and hunting and gathering is extremely important to the survival of us as Indigenous people. Wildlife matters to me as an Indigenous person. Wildlife it’s a spirit to Indigenous people, we have spirit animals, our dreams consist of wildlife that help us find our path and journey through life. Our stories all begin as wildlife as teachers, they themselves are all spirits that are here to help humans “the two leggeds” survive and thrive on this planet. It just came naturally to me that I gravitated towards wildlife, and it matters to me because without them this world would not survive, and Mother Earth would be hurting every single day.”*

- Taylor Galvin (Anishinaabekwe, Brokenhead Ojibway Nation, Undergraduate Student, Environmental Science and Studies, University of Manitoba)

*“Protecting the land, protecting the harvest, a lot of First Nations still live off their natural resources which is the wildlife so to make it sustainable, control your hunting, control your environment, protect the environment and have your wildlife healthy is so important to all of us. It doesn’t matter if you’re harvesting or not. You want the balance of nature to stay in tune with the way it’s always been. To upset it artificially and change it is really bad for our environment. Maintaining that, maintaining wildlife populations and protecting them, it’s just as important as protecting our air or our water.”*

- Darrell Brown (Cree entrepreneur and President of Kisik Clean Energy)

*“Wildlife to me as an indigenous person, our wildlife are our spirit animals, they’re our spirit guides, they all hold their own story, they all hold their own importance. With climate change and environmental changes our animals are dying off, one prime example is with the polar bears, the glaciers are melting, and the polar bears are starving to death, that’s a huge red flag for humanity. As a whole, wildlife are so important, as human beings are, they all hold significance. With our indigenous culture, our beliefs, and our ways of life, with our land, we respect the land, what we take we give back, we make offerings, we don’t take too much, and we always keep in mind the respect of Mother Earth. We need to take less and try to repair when we take something. Our respect for Mother Earth has always been there through centuries and it’s still there today.”*

- Natasha Moodie (Cree author, nurse, and singer/songwriter)

### **3.2.3 Hope for the Future of Wildlife**

When participants were asked, “Do you have hope for the future of wildlife?” none of the participants in this study replied no as their response. All participants said yes, they do have hope for the future of wildlife, but many said that it is going to take a lot of hard work and collaboration with the public to help take care of the planet, our species, and the species existing here on Earth with us. Shane Mahoney, a wildlife biologist from Newfoundland, Canada states that *“we are going to have to accept a vastly different future for wildlife than what most of us would prefer to see. We are going to have more human beings; we are escalating our demands*

*upon the natural habitats of this planet in oceans, freshwater systems, and terrestrial systems. We are not going to immediately stop the growth of human populations, nor the growth of economies, nor the demands. The result is that we cannot simply assume that if we keep doing the things that we're doing and do them a little bit better, that we will solve the problems facing conservation. We have to combine realistic options with the view that wildlife may not exist everywhere in the kinds of ways that we would hope. We have to start to develop 25- and 50-year scenarios for what the world is going to look like from a wildlife perspective. If we do that hopefully we can establish standards, approaches, mechanisms that will at least get us there. We cannot afford to stumble our way to a future for wildlife.*

The post-secondary students emphasized how they want to bring a lot to the field of wildlife biology and are excited to help make a difference to help conserve wildlife populations. Jessica Mohlman, a graduate student from the University of Georgia Warnell School of Forestry and Natural Resources states *"It's disheartening when you're in the wildlife field as you keep seeing more and more species become endangered and you see the pollution that we're causing this planet. You wouldn't not have hope being in this field, you're in this field because you have hope for the future, and you hope you can be that person that can help change it."* When the environmental professionals were asked if they have hope for the future of wildlife many paused for a moment and had to best think of how to answer this question. Wini Kessler comments *"I do have hope but it's in the face of so many pressures. The root problem is the number of people on this planet and the pressures that they bring so wildlife is under tremendous pressure from the human population growth but on the other hand humans are very good at solving problems and making things work out when we have a big problem in the environment. It's going to take a lot of work and a lot of dedicated people but most importantly it's going to take better awareness of people who aren't specially trained in environmental education."* Harriet Allen touches on this topic as well by stating *"I know that humans are capable and **have the ability to make choices** to preserve wildlife and to try to restore wildlife where we can. I hope that people will do that. I think having a career in Endangered Species Management means you have to have hope. That you can make things better and create an environment that will see to it that future generations have what we have and are able to see it."*

### **3.3 Audio/Visual Media Creations**

The qualitative data of this thesis was transformed into a video and a song, which contribute to the results of this study. The video contains audio and visual, and is titled “Why Do Wildlife Matter?” The song that was created contains audio and is titled “We Decide.” A performance video was also created for “We Decide,” which contains audio and visual. The two sections below will provide a description of each audio/visual media created for this research. The videos and song are additional components of this study which allows the audience/reader to visually see and hear the responses of the participants.

#### **3.3.1 Video – “Why Do Wildlife Matter?”**

“Why Do Wildlife Matter?” is a video that was created from the video clips that were taken at each interview session with the participants. The original video that was created is 28 minutes in length and contains the results of the study. The video begins with participants identifying the issues wildlife are facing on this planet and the importance of taking an interdisciplinary approach to conserving wildlife. Biologists then discuss the importance of environmental education and getting the public involved in wildlife conservation. The middle section of the video incorporates the responses of why wildlife matter to the participants, also interweaving alternate topics that were mentioned during the interview process such as the importance of having women in wildlife conservation and getting the perspectives of the local community when managing wildlife populations, a discussion of conservation and the importance of getting young people involved in conservation and what emerging biologists want to bring to the field of wildlife science. The video concludes with participants discussing the importance of communication and mentorship, a section on advice for emerging wildlife biologists from professionals, having hope for the future of wildlife, and examples of favourite animals of the participants that were mentioned in the interviews. A 12-minute version of the video was created to showcase and present the results of the study at the 26<sup>th</sup> Annual Conference of TWS in Reno, Nevada (Photo 3.1). Both videos can be found on YouTube at the links below. As of July 1, 2023, the videos of “Why Do Wildlife Matter?” have a total of 920 views on YouTube.

12- minute version: <https://youtu.be/vKkIDXRWBto>

28- minute version: [https://www.youtube.com/watch?v=\\_J8KnHiTFqs](https://www.youtube.com/watch?v=_J8KnHiTFqs)

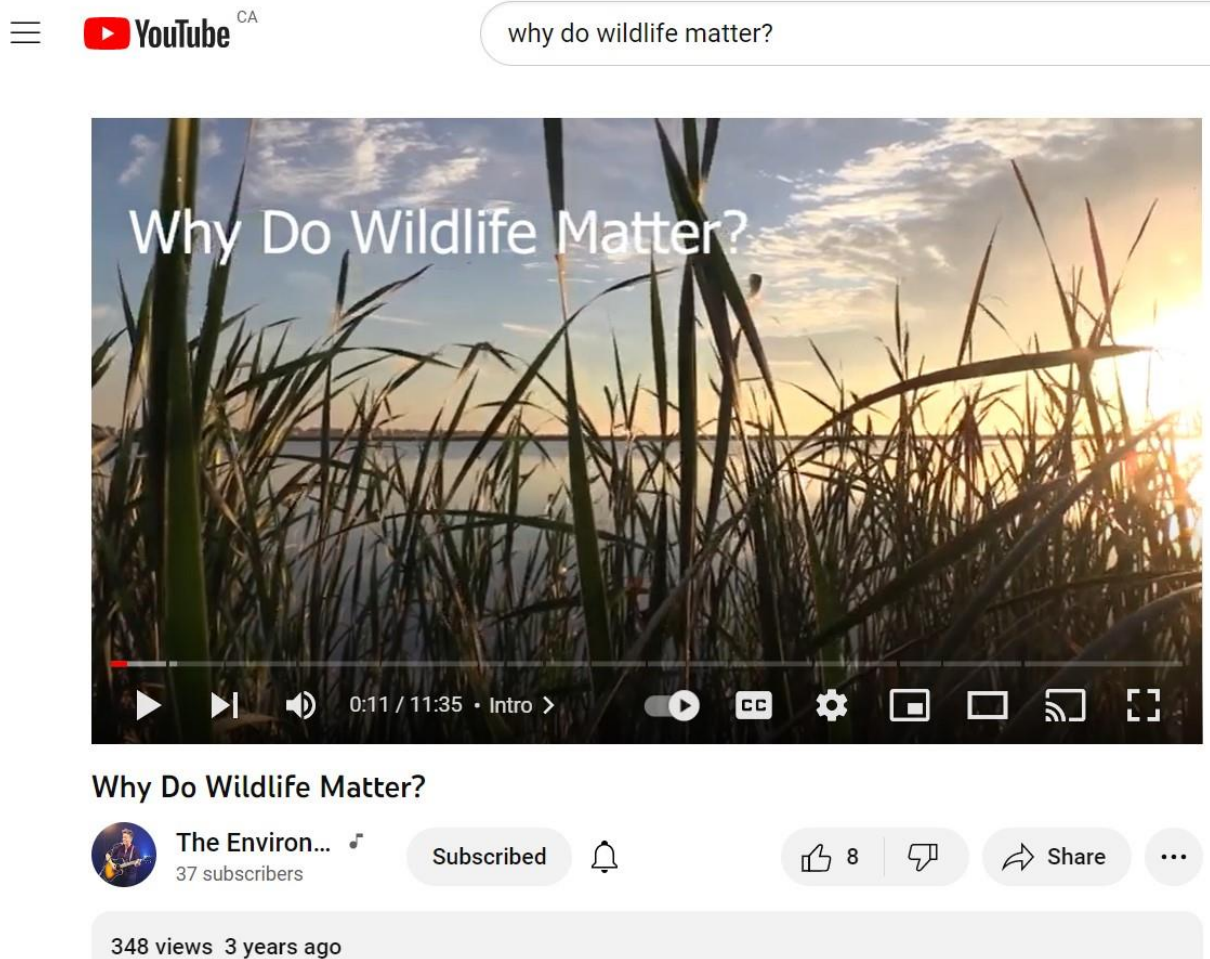


Photo 3.1: A Screenshot of the Video “Why Do Wildlife Matter?” on YouTube.

### 3.3.2 Song – “We Decide”

The song that was created from the qualitative data of this study is called “We Decide.” I wrote the music and lyrics for the song. “We Decide” is 4 minutes and 13 seconds in length and features vocals and acoustic guitar. The message within the lyrics of the song is that we as humans decide how we want to live our lives. We can decide to live more sustainable lives, to care for, protect and conserve wildlife species, and reduce our ecological footprint by thinking about how our actions and decisions will affect wildlife habitat and their populations. The song

was inspired by the results found within the interview process when participants were asked why wildlife matter to them and features the themes that were identified above. The beginning of the song focuses on environmental issues and the impacts humans have on the landscape, then incorporates hope for the future of wildlife, learning from our past and making positive changes, and concludes with how there are challenges, but we can live sustainably as we decide how we want to live. The lyrics of the songs can be viewed in (Appendix G). The performance video of the song can be found on YouTube at the link below (Photo 3.2). As of July 1, 2023, “We Decide” has a total of 2,742 views on YouTube.

<https://www.youtube.com/watch?v=LC9FxEOw49Y>



Photo 3.2: A Screenshot of the Performance Video of “We Decide” on YouTube, which was filmed at Crescent Drive Park in Winnipeg, Manitoba in September of 2019.

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## 4 ANALYSES

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### 4.1 Introduction

The analyses of this study are organized to first compare and contrast the findings from the interviews to the results from the literature review, as well as explore the results of the interviews in detail. The analyses will conclude with a section on examining the video and song “Why Do Wildlife Matter?” and “We Decide”.

### 4.2 Comparing and Contrasting the Interview and Literature Review Findings

While conducting the literature review, I found that there are not many resources that discuss why wildlife matter to specific cohorts or that investigate individual perspectives on the topic. The majority of the resources found that discuss why wildlife matter are online blogs and websites. The resources detail how wildlife matter in general to the planet and to humans, without gaining personal perspectives on why wildlife matter to individuals or groups of people. This thesis investigated personal perspectives, as I see to be a significant finding and contribution to knowledge for this topic. Through the literature review I found that wildlife matter for the following purposes:

- Biodiversity keeps ecosystems functional;
- Benefit to human health – happiness & wellbeing (mental & physical);
- Benefit to human health – fewer diseases;
- Medicinal - Cultural traditional medicine;
- Livelihoods - main source of income for humans;
- Food resource for humans;
- Economy – tourism; and
- Cultural significance (Forgeard, 2022; Qutab, 2020; Methorst et al., 2020)

While comparing the literature review findings to the results I found through conducting the interviews, all the themes were identified as reasons as to why wildlife matter. The themes

identified as 1) Ecosystem Importance 2) Resource for Humans 3) Personal Value – Happiness & Wellbeing 4) Recreational Purposes 5) Existential Purposes – Coexistence. The first 4 are mentioned in many of the website and blog resources, as well as the scientific journal articles, whereas the 5<sup>th</sup> theme, “Existential Purposes” is not identified in many of the website and blog resources available and is primarily mentioned in scientific journal articles.

To elaborate on the literature findings, let’s start by discussing the fact that biodiversity keeps ecosystems functional. Every organism within an ecosystem plays a vital role within that system and if changes are made to the population of that species within that ecosystem, such as an increase or decrease in that species, it will affect the entire system and have a cascading effect on the food web within that ecosystem (Bahlai et al., 2021). Many of the participants within this study described wildlife to be a puzzle piece within a puzzle, if a puzzle piece is lost, the puzzle is no longer complete. I wasn’t surprised to see that many participants had this answer when asked why wildlife matter. The majority of the participants in this study are environmental professionals, therefore they are aware of the important role wildlife play within an ecosystem. This overall theme was categorized within this study as 1) Ecosystem Importance.

The literature review findings also stated that wildlife matter for human health in terms of providing benefits to physical and mental health. Lisa Nisbet, PhD, a psychologist at Trent University in Ontario, Canada, who studies connectedness to nature states *“there is mounting evidence that nature has benefits for physical and psychological human wellbeing. You can boost your mood just by walking in nature. The sense of connection you have with the natural world seems to contribute to happiness even when you’re not physically immersed in nature.”* (Weir, 2020). Participants within this study described nature to be “part of my soul” and something that “keeps me grounded, feeling safe and at peace.” As participants talked about this topic many of them smiled and they looked happy and relaxed in the moment; it seemed that just mentioning the benefits wildlife have to their mental and physical health made them happy. It was very interesting to see the emotional expressions on their faces as they talked. Many participants used the word “value” when describing why wildlife matter to them, elaborating on how wildlife are part of their value system and something they cherish. Since 1992, the Convention of Biological Diversity has identified multiple values for wildlife, specifically intrinsic, social, cultural, genetic, ecological, recreational, educational, scientific, aesthetic, and recreational values

(United Nations, 1992). In North America, programs have existed for years to try and document how many people participate in wildlife-associated recreation, as this economic perspective can help determine how many people value wildlife. This information is then used by corporate and government policymakers to help guide their economic decisions and projects (Chardonnet et al., 2002). A study conducted to investigate the importance of wildlife to Canadians was published by the Canadian Wildlife Service in 1994, the results identified that “the majority of Canadians believe that it is important to maintain abundant wildlife (86% of the population) and to protect endangered or declining wildlife (83%). Activities that depend on fish and wildlife were a popular form of recreation for most Canadians as 91% of the surveyed population, or an estimated 19 million Canadians, were involved in some form of wildlife-related activity or recreational fishing. And most of them (73%) took part in 2 or more activities during the year” (Filion et al., 1994). This overall theme was categorized within this study as 3) Personal Value – Happiness and Wellbeing. The literature review also revealed that wildlife matter as having biodiverse ecosystems have proven to be beneficial to reducing disease. Conserving biodiversity “reduces the risk of zoonotic diseases as it provides additional habitats for species and reduces the potential contact between wildlife, livestock and humans” (Gilbert, 2010). None of the participants within this study discussed the important role wildlife play within an ecosystem to reduce disease and transmission.

Wildlife are beneficial in creating medicinal resources for humans. The World Health Organization estimates that as many as six billion people rely primarily on animal and plant-based medicines (WHO, IUCN and WWF, 1993). Wildlife for the use of medicine has been used for thousands of years (Turner, 2006). (Petrovska, 2012) state that medicinal plants have been an important part of healing traditions since humans’ earliest times within many cultures across the planet. Indigenous peoples have recognized more than 400 species of plants, as well as fungi, algae, and lichens with medicinal properties (Tanner, 2015). Plant medicines are more common than medicines obtained from animals and in many cultures, wildlife species are viewed as healers and containing healing properties that humans rely on to survive (Petrovska, 2012). There was only one participant in this study that mentioned the important role wildlife species have in providing medicinal and therapeutic properties. Wildlife are also important to many cultures across the planet. Within this study, participants mentioned the importance of wildlife to Indigenous culture, as well as to Japanese culture. It was interesting to hear these different and

unique perspectives. When discussing the topic of cultural significance, participants discussed how the Indigenous culture views wildlife as their spirit animals that help provide guidance to them within their life. That they have lived amongst them throughout their history and have adapted to coexist on the landscape while understanding and respecting their needs. Participants also mentioned that wildlife are important to the Japanese culture as within their culture they see wildlife as equals, and that humans and wildlife are all connected within the same system. While investigating the literature I found that wildlife are important to various cultures around the world. Within the Indigenous culture wildlife hold a spiritual significance. The foundation of the Aboriginal way of life is built upon the Seven Sacred Teachings. A study by Kading et al (2019) states that “Each teaching honours one of the basic virtues intrinsic to a full and healthy life” and is represented by an animal “to underscore the point that all actions and decisions made by man are manifest on a physical plain”. The 7 teachings are as follows: Love (eagle), Respect (Buffalo), Courage (Bear), Honesty (Bigfoot), Wisdom (Beaver), Humility (Wolf), and Truth (turtle). From the earliest of times, the “animal world taught man how to live close to the Earth.” This connection to animals grew to respect the natural lifecycles, therefore only what was needed to sustain their families, clans, or tribes was taken from the natural environment by methods such as hunting, trapping, gathering, or fishing (Kading et al., 2019).

The literature review also stated that wildlife matter as flora, fauna and natural resources are important for economic purposes. The United Nations (2019) state “that globally 1.2 billion jobs depend on a stable and healthy environment.” Wildlife and natural environmental processes are a critical component for industries such as fisheries, forestry, agriculture, as well as tourism and pharmaceuticals. As well, the International Labour Organization identifies “that a shift to a greener economy could create 24 million new jobs globally by 2030,” which will be dependent on the policies that are put in place (United Nations, 2019). It was surprising to see that only one participant in the study mentioned that wildlife matter for economic purposes, as to the important role wildlife play within tourism. When analyzing the results from the interviews, it was also surprising to see that the majority of the biologists didn’t mention that wildlife matter to them due to employment or financial income to support their personal lives. There were only a few biologists that mentioned that wildlife matter to them as it is their job, it was not solely their response to the question though as the biologists also elaborated on other themes within their

answer. This helps to verify that wildlife biologists truly care about wildlife and they're not doing what they do for employment or income purposes.

The topic of wildlife being a food resource for humans was one of the themes within this study and is identified as 2) Resource for Humans. Participants mentioned the important role wildlife play in helping put food on the table for many First Nations in North America. When discussing wildlife as a resource many participants elaborated on having wildlife for food specifically. While conducting the literature review, I found that wildlife are important as a resource for humans for a variety of purposes such as for tools, clothing, artisanal crafts, entertainment, and medicinal (Alves, 2016). I had one participant mention that wildlife are important to the media, which I thought was a unique response. If you think about it, can you imagine no Mickey Mouse, Tony the Tiger, Bugs Bunny, Winne the Pooh, Yogi the Bear...etc. Wildlife have played a significant role in the media in creation of characters in cartoons, comic books, commercials, advertisements, logos, movies, stories, novels, television shows. It's an amazing topic to think about and investigate. For years, I personally thought that every company that uses an animal within their media product should be obligated to provide funding to conservation initiatives for that certain animal. It would bring in millions of dollars for conservation that is much needed. On the topic of hunting as a resource for food and recreation, it was interesting to see that many of the participants that I know to be passionate hunters didn't mention that hunting was a reason that wildlife mattered to them. There were participants in the study that mentioned the fact that wildlife matter to them for hunting purposes, but also many hunters that did not bring it up within their response.

The topic of existential purposes within this study I believe to be a topic that is a bit harder to discuss amongst humans, maybe that's why it was not mentioned as much within the literature review resources that I came across. What I mean by the use of the word "harder" is the fact that existentialism is a form of philosophical inquiry, which explores questions related to the meaning, purpose, and value of existence, therefore there are many opinions on the topic that can be thoroughly debated. Within this study, this theme is identified as 5) Existential Purposes – Coexistence. Many of the participants within this study discussed this topic within their response to why wildlife matter to them. One response that I received was "wildlife matter because they matter." I thought this was an interesting response. I had a few participants state that "wildlife

are here for us and we should manage them to make sure they are here for future generations” and other participants state that “wildlife are a part of the overall system and are entitled to rights and resources to exist, the same as humans have.” It was interesting to see the different perspectives the participants have on the existential topic of wildlife. Participants discussed the fact that humans are obviously dominating the planet and are viewed as the superior species. Human wants and needs come first and every other species on Earth comes second. None of the participants within this study stated they viewed humans to be the superior species, but they did state that it was a viewpoint that many humans across the planet have and in turn creates many problems for wildlife species. While conducting the literature review, I found studies that recognize two main value orientations toward wildlife: domination and mutualism. (Manfredo, 2008; Teel and Manfredo, 2010) describe the domination value to have a utilitarian vision “whereby the resource shall be used and managed for the benefit of humans. Whereas mutualism sees wildlife as an extended family, deserving rights like humans.” These two value orientations described agree with the perspectives of the participants within the study, as both were mentioned within discussions. I believe that learning and respecting the perspectives of others will make us stronger individuals and will help our efforts in working together to help protect and conserve wildlife. This following quote was one that stood out to me within the interview process and is one from an undergraduate student at Colorado State University, Remi Pattyn.

*“We all have our own perspectives, plants and animals also have their own perspectives too. I think it’s our duty as we have so much power over everything else around us to recognize, respect, understand, and protect all those other perspectives that animals and plants have. We have the responsibility to conserve those perspectives and keep them there.”*

### **4.3 Exploring the Interview Responses Further**

A word cloud was generated to help visualize common words stated within the interviews when participants were asked why wildlife mattered to them (Figure 4.1). This figure is powerful in showcasing the results of the study in one single image.



Figure 4.1: A Word Cloud that Showcases the Results of Why Wildlife Matter to the Participants of this Study. Created via WordClouds.com.

When asking the question why do wildlife matter, most of the environmental professionals thought it was a great question that they were intrigued by. After the participants were asked the question, many had to pause and think of their answer. I think asking the “why” is significant. I hypothesize that if the general public think about *why* wildlife matter to them it will bring clarity to their actions and decision making in their daily lives and make them think about how their daily decisions are impacting wildlife populations. I also hypothesize that hearing why wildlife matter to biologists, students and Indigenous peoples will provide inspiration to help conserve wildlife. The results of this study clearly identify that wildlife matter and provides reasons as to why they matter. Environmental education was also a major topic of discussion within my interviews. The majority of biologists stated that we need to educate

everyone on the importance of wildlife but most importantly the majority of the population of humans on Earth have to care and work with biologists to conserve wildlife. They need to develop a deep personal connection to wildlife. Dr. Wini Kessler comments, *“Environmental Education is a huge element in it because **people are really only going to take action for things they know about and care about** so we all have a role in spreading the knowledge we have and helping people make those connections that they might not otherwise.”* On the topic of creating a deep personal connection to wildlife, a comment made by Don Yasuda, a wildlife biologist from California, United States, was one that was impactful as he said, *“Wildlife improves the quality of life for everyone. People see wildlife all the time. Maybe wildlife is the **key to attracting the public** to conservation.”* I thought these words were significant as it’s true, the public see wildlife all the time. Creating connections to wildlife could overall create connections to the entire system of ecosystems on Earth, and in turn to conservation. Dr. James Duncan, a wildlife biologist from Manitoba, Canada comments on his perspective of why wildlife matter to him, mentioning the importance of creating personal connections with nature, *“You care about the things you love. And I think there’s a deep seeded love of nature and wildlife. I felt it’s the right thing to do to try and understand those species and systems. And to try and figure out what the most effective ways of implementing conservation are. Research is one of those things. Engaging people so they connect with nature and have personal relationships with nature is important.”* I think creating connections with wildlife or nature is important to conservation. Participants within this study stated they started caring for wildlife and creating connections with them at an early age, which I think is significant. Getting young people into nature and passionate about wildlife species should be a main priority in conservation initiatives. Shane Mahoney, a wildlife biologist from Newfoundland, Canada commented *“I have come to view wildlife as essentially no different than human beings, they are simply another kind of life form on the planet. If we cannot understand them. We will fail to understand ourselves. They taught us to be human, if they disappear, we will miss them, if we disappear none of them will miss us.”* I found these words to be significant to this thesis, as I think the topic of understanding wildlife is critical to conservation. If we don’t put the effort or time into understanding and respecting wildlife, we will fail as a species ourselves. The majority of the public don’t seem to understand that concept in the present time, but we need them to.

It wasn't surprising to me that the participants of this study said they have hope for the future of wildlife. As environmental professionals, they witness and study many of the issues wildlife are experiencing across the planet, which is no easy task. Hearing that the participants do have hope is inspiring. Many stated it's going to be a challenging road ahead that's why I added the lyric within the last verse of "We Decide" to be "the road ahead is a challenging one but believe me, the best is yet to come. What do we want to leave behind, we decide." When answering the question do you have hope for wildlife, Krisha Faw responded stating "*I have a lot of hope for the future of wildlife. I think it stems from making sure that we continue on positive paths, that we're effectively communicating our wildlife research and making sure we're doing that in an effective way. I believe that not only do we currently have the powers capable to do that, but I think that we're empowering our next generation to do that as well.*"

While conducting this study, it identified the importance of community within the wildlife field. The events I chose to conduct my interviews at were at locations where people passionate about the environment gathered. Without knowing me, they would dedicate 20-40 minutes of their time on the spot at a busy event with an abundance of scheduled activities. The importance of networking was absolutely critical to my study. The fact that I was going into a community of people that know each other, respect each other, and stay connected was also critical to obtaining the data for the study. This provided the opportunity for biologists to be interviewed as well as to recommend other biologists to me so I could approach them to be interviewed. The choice to conduct interviews at annual conferences in various locations across North America also allowed me to gain such a rich diversity of perspectives on why wildlife matter. The study also helped verify the importance of community in bringing together wildlife biologists, musicians, and the general public. Building community is critical to the overall process of conservation. We need to create opportunities where people can learn, have fun, and connect with one another.

#### **4.4 Exploring the Video "Why Do Wildlife Matter?"**

Creating the video "Why Do Wildlife Matter?" was important to me as I wanted to be able to showcase the results of the study visually and audibly. Providing the audience/reader with additional learning tools is something I'm proud to have accomplished within this study. The video and song are not only artistic creations that were fun to put together but they both are also

additional resources that provide a variety of methods of learning for the audience/reader to take in and understand the information from the study. The video provides the opportunity to visually see the interviewees discussing their answers – seeing the expression on their faces, the way they move their hands while describing a topic, hearing their tone of voice...etc. All these attributes provide emotion and learning opportunities that one wouldn't get from reading a document or thesis. Specifically in the field of wildlife conservation, many researchers are using video to document their research and showcase the work they're doing to an audience. My research relates to the work of TWS with their project Capturing Our Wildlife Conservation Heritage, which is documenting the history and evolution of the wildlife profession by conducting and videotaping interviews with influential and pioneering wildlife biologists, educators, and managers. I think the fact that TWS is using video as a tool to document their history is significant and provides credibility to my research. Videotaping and documenting the perspectives of others is a way to preserve the information so that future generations can learn from past leaders, as well as to provide an opportunity to take those perspectives and create something from the audio/visual components that were recorded. Technological advancement in the future may also provide other methods of using these documented perspectives to communicate knowledge from past to present generations. The use of video as a resource to communicate the topic of wildlife conservation is increasing, specifically, videos created by environmental non-profit organizations such as Ducks Unlimited, Delta Waterfowl, World Wide Fund for Nature, The Nature Conservancy, and The David Suzuki Foundation. These videos are being created to showcase the work that they do and their mission in helping to conserve wildlife populations, as well as to promote and market their organizations. I think as we move into the future, we will see an increase in the use of video as a tool to communicate a message. It's a great learning tool to help explain complex topics such as scientific research and/or information to an audience.

#### **4.5 Exploring the Song “We Decide”**

The song “We Decide” was inspired by the qualitative results of this research. Attending the wildlife conferences and hearing the participants discuss why wildlife matter to them was so inspiring, it brought so much emotion out of me as a researcher and as an artist. I needed a way to creatively release all the information I gathered. As I am a passionate musician, the lyrics just

flowed out of me. I've been writing parts of songs since I was 15 years old, but it wasn't until age 23 when I wrote my first complete song start to finish. The song was "We Decide." The song contains purpose inspired by, in my eyes, heroes. People who care about wildlife and work hard to protect and conserve them are my heroes. The message that we are all in this together and we have to work as one is so important. After analyzing the interview data, the main message I got from the data and completing this thesis was we decide. Wildlife are under pressure of many issues on this planet and populations are experiencing drastic declines, but with all that happening what humans have the capability of doing is deciding what they can do to help, how they want to live their lives and change the way they live to be more sustainable. Humans are an intelligent species that have the capability to think, decide, make decisions, adapt, and feel. Humans have the capability to mitigate and manage an issue if they choose to. We can either do something about it or watch it happen and do nothing. Albert Einstein, a theoretical physicist widely ranked among the greatest and most influential scientists of all time said, "the world will not be destroyed by those who do evil, but by those who watch them without doing anything" (Kaku, 2023).

I personally chose to incorporate music within this thesis because it is a great communication tool, but I also incorporated music as it helps calm me and provide motivation. I find while I think about and work on environmental issues, it gets very overwhelming. The topic of "Eco-Anxiety" is very much real. Thinking about the problems, what the future of wildlife will look like, what the future of humans will look like...etc. It is a very overwhelming thought process. Writing "We Decide" was important to the process of this thesis as it gave me a way to communicate the research, as well as personally feel good as I worked. Having the ability to play guitar, sing and be creative is so important to my ability to function as a human being. If I didn't have music as a method to ground myself, I personally don't think I would be able to continue working as a biologist. While conducting the literature review, I came across examples in conservation where music is used as a tool to showcase scientific research and to initiate public involvement. The example from Tanzania, where farmers were having issues with elephants entering and disturbing their crops (Sustersic, 2019) and PAMs Foundation initiated the creation of a song to showcase that if farmers put up chili fences, the elephants would stay away. This example helped prove that music can be a powerful communication tool as once the song was broadcasted on local radio, the farmers put up chili fences. This initiative relates to my song "We

Decide” as both involved identifying the issue, researching methods to mitigate the issue based on the results from scientific studies, understanding communication tools within the community, creation of a song, and finally promoting the song. While completing the literature review, I found studies that use sonification to transform research data into sound. Let’s start by discussing the study by Mark Temple, a molecular scientist at Western Sydney University that assigned each individual DNA “base”, A, C, T, G to a musical note with the objective to create a musical composition to be able to hear the data and identify sequence patterns within his data. The musical composition he created with the assistance of Artificial Intelligence made it easier for the scientist to recognize sequence patterns and make decisions within his study. During the COVID-19 lockdown Mark explored the sonification of the coronavirus genome. The songs Temple creates are uploaded to music sharing platforms such as Spotify to provide access to the general public (Western Sydney University, 2023). To compare this research to my study, Temple’s data included transforming DNA into music with the assistance of Artificial Intelligence, whereas my study took qualitative data and transformed it into music via songwriting. Both of our studies included promoting the songs that were created on music sharing platforms for audiences around the world to have access to. The collaboration project by composer Glenn McClure and the UC San Diego’s Scripps Institution of Oceanography and Birch Aquarium at Scripps to transform Antarctic ice shelf vibrations into musical arrangements can compare to my study as we both transformed scientific data into musical compositions. Their project was a way for the music to “give a voice to the ice” (Hook, 2017), whereas my project was a way for the music to “give a voice to wildlife”. Both projects were also showcased to the public, theirs via an exhibit and mine via musical performances and presentations. These examples compare to my study as they identified ways in which other researchers are using music as a tool to showcase their research and to communicate the results to a wide audience. Within the performance video that I created of “We Decide” it showcases my performance of the song so the reader/audience can visually see and hear my emotions as I perform. I think being able to express emotions involving how we feel about wildlife conservation will help create connections with an audience and hopefully make people feel something too. When performing the song “We Decide” live to an audience, as well as my other environmental songs, I try to engage the audience in the song and sing from the heart so that the audience can see the passion I have for the environment and spark the passion they have for the environment as well. To engage

the audience within my performances I give out a tambourine for someone to keep the beat of my song with, I initiate clapping as well as owl hooting during certain sections of the songs. When performing for elementary students in grades 2-5, I found they love participating in the song – clapping and making bird noises as I sing. Many came up to me after my performance to ask for an autograph and to personally tell me how much they loved my songs.

I found that seniors particularly like singing along to the music, as I can see it brings joy to many. After environmental presentations and performances that I've given to seniors, they always ask if I do this for kids, as they say it's great for us to participate but the kids are the ones you need to focus on as they will be the ones making the changes and decisions in the future. I think that's a key aspect to my work moving forward, is performing for young people and helping to spark a passion for the environment in them. Hearing that people enjoy my songs and the work that I do to help promote environmental conservation is so important to me as a scientist and as an artist. Below is a quote from one of my mentors, Grace Hrabí that I had the wonderful opportunity to learn from during an Emerging Artist Mentorship Program I took part in.

*"I was lucky enough to mentor Emily in 2021/2022 as part of the Manitoba Arts Networks mentorship program. I found Emily's passion for music and the environment to be truly inspiring. There is an honesty in her words and a tenderness in her voice that work beautifully together."*

- Grace Hrabí (Mentor)

Music is such a powerful tool to communicate with an audience. I personally think the use of music as a tool to promote wildlife conservation is before it's time. I think as we move into the future, music will be used more within science, as well as in general to communicate important global issues. It's also great to see musicians become actively involved with environmental conservation as they are role models to many, especially to young people across the world. Their voice and actions can help create awareness and get more people inspired to act on environmental issues.

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## 5 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

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### 5.1 Summary and Conclusions

This research investigated and documented the perspectives of why wildlife matter to environmental professionals, including retired and practicing wildlife biologists, as well as post-secondary students studying environmental science and studies, and explored perspectives of why wildlife matter to Indigenous peoples and their culture. The qualitative research data was artistically transformed into video “Why Do Wildlife Matter?” and song “We Decide” to showcase the research in diverse media. This study found that wildlife matter to environmental professionals, students, and Indigenous peoples for a variety of reasons. For example, personal perspectives on how wildlife play a direct role in their life, as well as the role wildlife play as part of the world’s ecosystems in providing balance and stability to nature’s processes. Inductive coding thematic analysis identified 5 themes within the data of why wildlife matter which includes 1) Ecosystem Importance 2) Resource for Humans 3) Personal Value - Happiness and Wellbeing 4) Recreational Purposes 5) Existential Purposes – Coexistence. This research has made a contribution to wildlife management and conservation as it has investigated and documented a sample of the perspectives of wildlife professionals and students in the early 21st century asking them why wildlife matter. As wildlife do not have a voice to speak for themselves, this research takes the perspectives of the people who have dedicated their lives to educating the public and protecting wildlife species; a way of giving a voice to wildlife, giving a voice to the voiceless. The study is also significant as it provides an example of how qualitative research can be analyzed and transformed into audio/visual media tools. After reading this thesis, I hope you think about why wildlife matter to you, and how you can make a difference to help protect and conserve the wildlife species around you.

## 5.2 Future Research and Recommendations

A future research suggestion would be to investigate why wildlife matter to the general public. This would be an interesting topic to gain data on and understand why the public are motivated to protect wildlife species. During the question period of the presentation at the 26<sup>th</sup> Annual Conference of TWS in Reno, Nevada in 2019 and while completing this thesis, I had many environmental professionals suggest that the next step of this project would be to investigate the perspectives of the general public. Learning the perspectives of the general public would help biologists understand those viewpoints and incorporate them into their wildlife management practices. While conducting the literature review it was obvious that there are gaps missing in the research of why wildlife and the environment matter. A great deal of the knowledge and information available focuses on why wildlife matter in general and does not focus on why wildlife are important to specific cohorts of people across the planet. Much of the information available also does not focus on individual perspectives through first person point of view. This data is significant and could help biologists understand the perspectives of the people that will help in the protection and conservation of wildlife populations. Another future research suggestion would be to create more videos, more songs, more podcasts, more painting, more art in general focusing on the topic of wildlife conservation. We need more resources other than text that focus on wildlife conservation and the importance of being a sustainable part of the overall ecosystem on Earth. Biologists around the world need to collaborate with artists, musicians, filmmakers, painters, photographers, storytellers...etc. creative people that can help tell their story of why wildlife matter and promote wildlife conservation and the important scientific research they work on. Creating diverse educational tools using different mediums such as audio/visual materials will help build a complex learning system that will provide a variety of learning styles, as everyone learns differently. Moreover, it's important that the artistic creations are foundational on science. The collaboration between artists and biologists should take place to work to transform scientific data and research into art. Lastly, making the media tools accessible and comprehensible to the general public is critical in the communication process. Get these creative collaboration works on the news and on social media – front and centre in the faces of the public, young people, politicians, the billionaires – people that biologists need on our team to help create positive change in the environmental arena. When communicating with an audience it is important that the audience understands and also cares about what you're telling them. Why

does what you're communicating personally matter to them? Why should they care? The "why" is an important part that we need to ask ourselves and work to understand as we move forward into the future.

## **Author's Media Presentations**

### Audio/Visual Creations

March 2019 - "We Decide" (Song)

April 2019 - "Why Do Wildlife Matter?" (Video)

### Events – Presentations, Musical Performances and Program Participation

October 2018 - University of Manitoba Undergraduate Research Poster Competition

March 2019 – Joint Annual Conference of the Alberta Chapter and the Canadian Section of TWS in Canmore, Alberta, Canada

September 2019 – the 26<sup>th</sup> Annual Conference of TWS in Reno, Nevada - First screening of "Why Do Wildlife Matter?"

February to August 2020 – Manitoba 150 Youth Ambassador Program participation hosted by RBC and the Manitoba Arts Network

December 2020 – Career Trek presentation for high school students in Winnipeg, Manitoba, Canada

March 2021 - Senior Centre Without Walls online presentation

April to September 2021 - Emerging Artist Showcase & Mentorship Program participation

October 2021 - TWS virtual conference presentation

March 2022 - Our Only Earth - The Bridge: A Festival of Ideas - Royal Manitoba Theatre presentation

April 2022 - Natural Resources Institute - University of Manitoba, Earth Day Celebration Musical performance

April – May 2022 'Music for Conservation' Roots & Shoots Project – funded by the Jane Goodall Institute of Canada, collaboration project with Discover Owls

June 2022 - Linden Pointe Senior Residence presentation and musical performance

June 2022 – Retirement Celebration musical presentation

June to August 2022 - Canadian Musician's Cooperative – Pre-Professional Artist Program

August 2022 - Musical Notes & Totes, West End Biz & West End Cultural Centre musical performance

August 2022 - Dakota House Senior Residence musical performance

December 2022 - Nature Manitoba Discovery Evening presentation and musical performance

March 2023 - Wild Wild Wilderness & puppet show and musical performance at the West End Cultural Centre in Winnipeg, Manitoba, Canada. Performed by Green Kids Inc. and The Environmental Musician

<https://chvnradio.com/articles/wild-wild-wilderness-teaching-future-generations-of-environmental-importance-through-song>

March 2023 – Joint Conference of the BC Chapter and Canadian Section of TWS, Victoria, British Columbia, Canada

June 2023 – Living Music Winnipeg Open Mic Night musical performance

June to August 2023 – Canadian Musicians Co-operative – Pre-Professional Program  
Coordinator and Emerging Artist

#### Radio - Song on air and/or Interview

July 2020 - CBC Radio Manitoba 89.3 FM

October 2020 - CJNU 93.7 FM Nostalgia Radio

April 2021 - UMF 101.5

July 2021 - CFAM 950 “Made in Manitoba” segment

<https://www.pembinavalleyonline.com/articles/made-in-manitoba-the-environmental-musician>

June 2022 - Witch Police Radio Podcast

<https://witchpolice.com/episodes/wr701-the-environmental-musician>

March 2023 - CHVN 95.1 FM

April 2023 - 91.3 FM CJTR Regina Community Radio

#### Online Articles

May 2020 - The Wildlife Society. TWS member’s video explores why wildlife matters. Written by Dana Kobilinsky.

<https://wildlife.org/tws-members-video-explores-why-wildlife-matters/>

June 2020 - UofM News - Why do Wildlife Matter? Written by Chris Rutkowski.

<https://news.umanitoba.ca/why-do-wildlife-matter/>

November 2020 - The Wildlife Society - Wildlife Vocalizations: Emily Thoroski

<https://wildlife.org/wildlife-vocalizations-emily-thoroski/>

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**Appendix A: Promotional Poster for the Presentation in Reno, Nevada**

Come watch the first showing of a  
student film called

**‘Why Do Wildlife Matter?’**

featuring inspiring wildlife biologists  
such as Winifred Kessler & Shane  
Mahoney!

Presentation Details: Tuesday, October 1<sup>st</sup> at 10:50 am in the Reno-  
Sparks Convention Centre F4\*

Session Title: Impacts & Tools for Communication

Presenter: Emily Thoroski

Please also follow me on social media!



@theenvironmentalmusician



## Appendix B: Informed Consent Form



UNIVERSITY  
OF MANITOBA

Department of Graduate Studies  
Master of Environment

### INFORMED CONSENT FORM

**Research Project Title:** Why do Wildlife Matter?  
**Researcher:** Emily M. Thoroski  
**Project Advisors:** Drs. Rick Baydack, Jill Oakes, and Erin McCance

This research is being collected for a master's thesis at the University of Manitoba and involves investigating human perceptions and the use of music and video in wildlife conservation. The objective of this research is to get an understanding of how individuals view wildlife conservation and to document their perspectives. It will take an interdisciplinary approach at identifying and documenting the perspectives of university professors, students, indigenous people, as well as environmental professionals on the environment. Participants will verbally be asked questions relating to the topic of wildlife conservation and will provide their answer to the Principal Investigator at the in-person interview. The interview will be filmed to document the data. Your interview has the potential to be used within a paper, video and/or song that can be used as an educational tool to get the public more involved in conservation initiatives and may be shown in a classroom setting, at conferences, and may be available for the public to view on websites and on social media.

**Your signature on this form shows that you understand how and why you are participating in this research. Your signature on this form also states that you give permission to release confidentiality. Please email Emily at [Thoroske@mvumanitoba.ca](mailto:Thoroske@mvumanitoba.ca) if you have questions.**

Participants Name \_\_\_\_\_

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date

# Appendix C: Photo/Video Release Form



UNIVERSITY  
OF MANITOBA

Department of Graduate Studies  
Master of Environment

## PHOTO/ VIDEO RELEASE FORM

**Research Project Title:** Investigating Human Perceptions  
**Researcher:** Emily M. Thoroski  
**Project Advisors:** Drs. Rick Baydack and Erin McCance

This video footage is being collected to create an Environmental video for master's Thesis at the University of Manitoba. The objective of this research is to create a video that can be used to educate and inspire people about environmental conservation and can help investigate the most efficient tools that can be used to get people to act and help conserve the environment. It will take an interdisciplinary approach at identifying and documenting the perspectives of university professors, students, as well as environmental professionals on the environment. Your image and voice may appear in videos. The video footage that contains your voice/image has the potential to be used as an educational tool in a classroom setting, shown at conferences, and will be available for the public to view on websites and on social media.

**Your signature on this form shows that you understand how and why you are participating in this research. Your signature on this form also states that you give permission to be video-recorded and to release confidentiality.**

Participants Name \_\_\_\_\_ Email Address \_\_\_\_\_

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date \_\_\_\_\_

## Appendix D: Research Ethics and Compliance Protocol Approval



Human Ethics  
208-194 Dafoe Road  
Winnipeg, MB  
Canada R3T 2N2  
Phone +204-474-7122  
Email: humanethics@umanitoba.ca

### PROTOCOL APPROVAL

**TO:** **Emily Thoroski** (Advisors **R. Baydack & E. McCance**)  
Principal Investigator

**FROM:** **Julia Witt, Chair**  
Joint-Faculty Research Ethics Board (JFREB)

**Re:** **Protocol J2018:072 (HS22168)**  
**Adaptive Management and the Environment Video**

**Effective:** December 6, 2018

**Expiry:** December 6, 2019

**Joint-Faculty Research Ethics Board (JFREB)** has reviewed and approved the above research. JFREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*.

This approval is subject to the following conditions:

1. Approval is granted for the research and purposes described in the application only.
2. Any modification to the research or research materials must be submitted to JFREB for approval before implementation.
3. Any deviations to the research or adverse events must be submitted to JFREB as soon as possible.
4. This approval is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
5. A Study Closure form must be submitted to JFREB when the research is complete or terminated.
6. The University of Manitoba may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

**Funded Protocols:**

- **Please mail/e-mail a copy of this Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.**

Research Ethics and Compliance is a part of the Office of the Vice-President (Research and International)  
[umanitoba.ca/research](http://umanitoba.ca/research)

## **Appendix E: Question Guide for the Semi-Structured Interviews**

### Questions for wildlife biologists/environmental professionals

#### Introductory Question

1. Please tell me your name, where you are from and a brief description of your career as a wildlife biologist (including number of years in profession)

#### Body

2. When did you begin to have an interest in the wildlife area?
3. What do you think is the most significant contribution that you have made to your profession?
4. Who was the most important person that influenced your profession?
5. Why do wildlife matter to you? (from a personal perspective)

#### Conclusion

6. What advice would you give to a young professional starting out in this field? What are the most important skills for them to have?
7. Do you have hope for the future of wildlife?
8. Fun Question: What is your favourite animal?

## Questions for post-secondary environmental science and studies students

### Introductory Question

1. Please tell me your name, where you are from (including school) and the degree that you're pursuing

### Body

2. What do you hope to provide to this profession?
3. How important is it for you to get field experience early on in your career?
4. Why do wildlife matter to you? (from a personal perspective)

### Conclusion

5. Do you have hope for the future of wildlife?
6. Fun Question: What is your favourite animal?

## Additional questions

These questions were asked if a wildlife biologist specialized in a particular area.

Example - Prior to taping: Would you be able to answer questions on international wildlife management and its importance?

### Individual Section: Topic – Wildlife Conservation

1. Can you identify the importance of conserving natural habitat for wildlife species?
2. Can you comment on the dramatic decline of wildlife populations worldwide?
3. Can you provide advice on how humans can best move forward and allow for the co-existence of humans and wildlife?
4. Can you comment on the importance of getting young people involved in wildlife conservation?

### Individual Section: Topic – Field Work

1. Can you comment on the importance of providing students with field experience early on during their undergraduate degrees?

### Individual Section: Topic – International Wildlife Management

1. What is International Wildlife Management? Are you involved in this area?
2. How can nations benefit by communicating on an international scale?
3. Can you provide an example of a successful international management strategy that has greatly benefited wildlife populations?
4. Why is international wildlife management critical to the future of the environment?

Individual Section: Topic – Adaptive Management

1. Can you define what you think adaptive management is in your own words?
2. Can you provide an example of adaptive management that is used in your field?
3. Do you use adaptive management in your daily life?
4. Can you identify the importance of the use of adaptive management to the future of the environment and its natural resources?

Individual Section: Topic - The Wildlife Society

1. Can you comment on the importance of having wildlife organizations such as The Wildlife Society?
2. How long have you been a member of The Wildlife Society?
3. How do you feel your role and membership with The Wildlife Society has helped your career?
4. Can you comment on the importance of getting young people involved in The Wildlife Society?
5. Can you comment on the importance of the Certification program that TWS offers and why it is important to become a Certified Wildlife Biologist?

Individual Section: Topic - Women in the wildlife field

1. Can you discuss the importance of getting women into the wildlife field?
2. How are you involved in this area?

Individual Section: Topic: Traditional Ecological Knowledge

1. Can you comment on your role within the indigenous community? Are you seen as a mentor and leader within the community?
2. Can you describe the importance of hunting and living off the land? Can you discuss your background and how it plays a role in your life?
3. Can you comment on the importance of using traditional ecological knowledge in conservation?
4. Why is it important that society and scientists listen to and understand traditional ecological knowledge and collaborate with indigenous communities?

Extra questions: A variety of topics

1. How has wildlife management evolved? (Ask to a retired professional)
2. What do you think are the greatest challenges that the wildlife profession faces today?
3. Can you comment on the importance of protecting and conserving natural wildlife habitat?
4. Can you comment on the importance of understanding the history of the wildlife profession?
5. How do you see the wildlife profession evolving over the next 50 years?
6. How do we “market” the importance of wildlife? How do we get people to care and recognize the importance of conserving wildlife, habitat and ecosystems?
7. Can you comment on the importance of taking an interdisciplinary approach to wildlife conservation?
8. Can you comment on the importance of understanding human dimensions in managing wildlife?
9. Can you comment on the importance of using science-based management in managing wildlife?

## Appendix F: List of Interview Participants

### Interview List

#	Name	Time Length of Interview	Date	Location
1	Bill Vodehnal	15:36	(08/11/2018)	Crescent Drive Park, Winnipeg, Manitoba
2	Justine Josephson-Laidlaw	1:07		
3	Jim Fisher	5:59	(09/14/2018)	Delta Marsh, Manitoba
4	Branden Leost	1:14		
5	Art Rodgers	9:07	(10/08/2018)	The 25 <sup>th</sup> Annual Conference of The Wildlife Society
6	Joe Youtz	2:44		
7	Jessica Mohlman	3:18		
8	Ayla Morehouse	4:46		
9	Selma Glasscock	8:52		
10	Shane Mahoney	11:05	(10/09/2018)	Cleveland, Ohio, United States
11	Dan Svedarsky	24:51		
12	Wini Kessler	17:46		
13	Evie Merrill	5:48		
14	Don Yasuda	11:29	(10/10/2018)	
15	Jim Ramakka	32:33		
16	Gary Potts	8:45		
17	Jennifer Malpass	5:01		
18	Cynthia Perrine	12:50		
19	John MacDonald	6:25		
20	Krishna Faw	4:47		
21	Tsuyoshi Yoshida	2:29	(01/23/2019)	University of Manitoba (Japan Polar Bear Project)
22	Ayumi Imoto &	1:43		
23	Osamu Hasegawa			
24	James Duncan	15:66	(02/10/2019)	Pinawa, Manitoba
25	Michael Gillingham	2:13	(03/23/2019)	The Joint Annual Conference of The Canadian Section & The Alberta Chapter  Canmore, Alberta
26	Mariah Simmons	3:49		
27	Harriet Allen	6:43		
28	Don Barnes	13:85		
29	Janet Ng	3:52	(03/24/2019)	
30	Sonja Leverkus	4:27		

31	Edward Henry	5:11	(10/02/2019)	The 26 <sup>th</sup> Annual Conference of The Wildlife Society  Reno, Nevada, United States
32	Remi Pattyn	3:27		
33	Sonja Barber	50 sec		
34	Nate Bickford	7:02		
35	Jodie Provost	1:57		
36	Serra Hoagland	3:37		
37	Ed Thompson	6:46	(10/03/2019)	
38	Nick Wesdock	2:42		
39	Kerrel Dunsmore	3:03		
40	Carol Chambers	8:19		
41	William Noble	7:02		
42	Vince Crichton	6:28	(10/28/2019)	TRAMP Farms, St. Adolphe, Manitoba
43	Natashia Moodie	7:02	(12/05/2019)	MEIA Emerging Issues Conference 2019 Club Regent, Winnipeg
44	Darrell Brown	6:02		
45	Mike Fernandes	7:29		
46	Erin McCance	17:39	(07/21/2020)	Residency of interviewee, Winnipeg
47	Rick Baydack	20:55		
48	Taylor Galvin	19:08	(08/20/2020)	Kings Park, Winnipeg

## Appendix G: Lyrics to “We Decide”

### “We Decide”

Just look how far we have come

Just look at what we have done

We are destroying our home and we know

7 Billion people and counting

We’re altering our landscape, causing forests to destruct and wildlife to decline

The past has brought us to where we are today

So let’s not forget our mistakes, let’s learn and create change

Let’s give it all we’ve got, we’ve only got one world, we’ve only got one life to live

Let’s work as one, to make a difference and live sustainably, are you with me?

Let’s live with passion and not hate, for we are all equally the same

So here’s to the ones we’ve lost, here’s to the ones we’ve gained and here’s to the ones that still  
remain

Let’s give it all we’ve got, we’ve only got one world, we’ve only got one life to live

Let’s work as one, to make a difference and live sustainably, are you with me?

We'll remember these days for the rest of our lives

So let's act now to make a change for the better days

What do we want to leave behind for the rest to come? We decide what's important to us

I used to think that everything had been done, but now I know that's not true, there's more left  
for us to do

The road ahead is a challenging one, but believe me, the best is yet to come

What do we want to leave behind? We decide