# Reflective Essay: My Journey in Research

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Research has greatly influenced both my academic and professional journey through the Natural Resource Science program. Through field-based projects, coursework, and research-oriented employment with benthic invertebrates, forest health, and fire ecology, I have had the opportunity to contribute to a wide range of scientific analyses. This diversity of research experience across different areas of the environmental sector, along with the variety of researchers, students, and professors that I have had the pleasure of working with, has helped shape me into the researcher I have become. The most impactful outcome over the past five years is my transformation of how I think, approach problems, and understand my role as a scientist. Although I started out with a narrowed perspective focused on finding the answer, research has expanded my mindset, encouraging me to take a step back, recognize the complex interconnectedness of our natural ecosystems, ask deeper questions, and embrace uncertainty when it arises.

Prior to participating in research, my approach to learning involved following instructions and focusing primarily on the final result. In the early years of my degree, my understanding of environmental issues was limited, and I viewed ecological problems as linear cause-and-effect relationships. Because I correlated my academic success with reaching the “correct” answer, I often assumed environmental problems stemmed from a single source and underestimated the complexity and variability in ecological systems. Additionally, I experienced self-doubt around

my ability to contribute to scientific discussion in the academic settings and lacked confidence in my ability to ask questions, fearing I might appear unintelligent.

My involvement in research significantly shifted these previous perspectives. The most notable changes have been with my confidence and my comfort with uncertainty. Through my experiences, I have gained the self-assurance in my ability to generate original insights, conduct rigorous fieldwork, and contribute meaningfully to both independent and collaborative research environments.

Research requires attention to detail, adaptability, and persistence. Fieldwork, in particular, taught me to be flexible and responsive to changing conditions, whether environmental or logistical. Plans often need to be adjusted in real time, highlighting the importance of resilience and problem-solving. Whether collecting benthic macroinvertebrate samples in variable stream conditions or assessing wildfire impacts in remote ecosystems, I have experienced a wide range of data collection and analysis scenarios. Sometimes, fieldwork proceeds exactly as expected, with ideal weather conditions and proper functioning equipment; other times, it is interrupted by environmental limitations that hinder progress, such as unstable slopes conditions, or close encounters with grizzly bears, requiring adjustments to the original approach. These experiences have required me to evaluate limitations, interpret patterns, and make informed judgements, ultimately strengthening my critical thinking and problem-solving skills.

Another fundamental area of growth has been communication. Research requires the generated data to be expressed in a clearly and effectively. Through collaborative work, report writing, and presentations, I have strengthened my ability to communicate complex scientific information to diverse audiences. I have learned to prioritize clarity, support claims with

evidence and structure arguments logically. Additionally, working in collaborative research teams has further developed my interpersonal communication skills. These experiences helped me understand the importance of strong communication for consistency, time management, error prevention, and safety in field environments. I have become more comfortable asking questions, contributing ideas, and providing feedback.

Along with my personal development, my research experiences have contributed to important scientific knowledge addressing real-world environmental challenges. Fields such as forest health, aquatic ecology, and wildfire science are critical for understanding and implementing adequate management strategies in ecosystems increasingly affected by climate change and industrial impacts. This research provides science-based evidence that informs policymakers, guides management decisions, and promotes sustainable practices across the landscape. My involvement in these projects has deepened my appreciation for the responsibility that comes with conducting and applying research. It is crucial to continue advancing our understanding of these complex ecosystems to support environmental stewardship and protecting the well-being of species and communities that depend on them.

The skills and attributes I have gained through my research experience will continue to shape my academic and professional trajectory. My ability to think critically, communicate efficiently, and adapt to uncertainty will be essential in any future role I might have within the natural resource sector. Over the past five years, my involvement in research has allowed my mindset, skills and professional identify to grow significantly. Research has strengthened my resilience when faced with challenges, deepened my understanding of scientific inquiry, and increased my capacity for critical work. I am now more confident in my ability to contribute to scientific research and collaborate with others to address environmental issues. The confidence I

have developed has also opened my eyes to the possibility of pursuing a master's degree in the future – something that once seemed unattainable. These experiences also helped me identify my interest in pursuing a career that integrates research and practical applications.