Personal Statement

I tried to hide my guilt as Mike hoisted the beaver traps I had sabotaged out of the frigid water. I'd met trapper Mike the previous night when I learned Carleton had hired him to kill my neighbors, a family of beavers living in the lakes next to my dorm. Walking back home after a long day of studying, I'd routinely pause on the bridge over the lakes to look for the distinctive V-shaped ripples of a beaver slicing through still water. I treasured these moments of reflection, before going to sleep as the beavers began the busy night ahead of them. Horrified that Mike was trying to kill these industrious critters, the morning after meeting him I shimmied out onto the thick ice, shoved a stick into the water, and jiggled it around until I felt the snap of the steel jaws of the lethal trap springing shut.

My act of rebellion initially delighted me. But later, Mike reached out and invited me to come trapping with him. I accepted.

Mike was unfazed by the stick-filled traps, believing it was the work of a clever beaver. His kindness and appreciation for beavers disarmed me. I spent the next few hours helping him reset the traps until my toes were numb. We talked as we worked, and our conversation gradually opened my mind. Mike detailed the moral principles that guide his trapping, like always eating the meat. The more he spoke, the more uncertain I became about my sabotage. I wondered what would compel someone with such a deep love for beavers to spend their free time killing them. Over the next few weeks, I trapped with Mike every other night, and he continued to answer my endless stream of questions about beaver biology, behavior, and trapping.

My friendship with Mike inspired me to pursue an independent study on beaver management and environmental ethics, sophomore spring. I trapped with Mike at night and read about beavers during the day. I spoke and listened to people with unique perspectives on beaver management from Carleton's grounds manager to beaver researchers to the creator of a Californian "Beaver Festival." I learned how beavers restore riverscapes, but also flood farmland. A management problem I initially thought was black and white gradually grayed. The more I learned, the more questions I had, and the deeper I dove.

We never killed the Carleton beavers, but Mike trapped a nuisance beaver nearby. Growing up in a city, I'd never seen where the meat I ate came from. So, I asked him to teach me how to skin it. Watching the beaver transition from a familiar creature to a hunk of meat was equal parts shocking and fascinating. Walking away with a bag of beaver meat, I knew I needed to honor that poor beaver's death. So, the next night I gathered three dozen classmates and we cooked it up. As we ate the beaver meat, we

discussed our responsibilities to the animals we live alongside and the ones we eat. I was still unsure if it was “right” for us to kill an ecosystem engineer, but I knew that the nuanced questions the conflict raised were worth sharing with a broader community. How should we balance human needs and desires with preserving ecosystems?

So, as the final project in my independent study, I organized a Beaver Festival—a fun event for the town and college to come together to talk about the promise and peril of living alongside beavers. Mike answered questions about nuisance beaver trapping. Renowned beaver researcher Dr. Emily Fairfax spoke about how beavers fight climate change. Nearly five hundred people came to chat about beavers, play beaver-themed lawn games, and name the three Carleton beavers on death row.

That summer, I led and mentored a conservation corps of teens in Oregon. Our work did not involve beavers, but the seemingly Sisyphean task of invasive species removal raised some of the same ethical dilemmas I encountered researching beaver management. How should we choose which invasives to manage? What gives us the right to reshape landscapes?

I continued exploring these questions that fall while studying conservation biology in Aysén, Chile. There, working alongside people with different views on conservation, I learned the nuts and bolts of conservation research. I wondered how conservation biology could protect both biodiversity and local people. Living in a tent for nearly six months, I started to wrestle with questions about my relationship with the natural world, pondering how I wanted to live my life.

Returning to Carleton that winter, I resumed my beaver boon with a new interest in how environmental values intersect with conservation research. I led more community conversations through my second beaver independent study: Applied Environmental Ethics. I hosted beaver walks to show students and locals the rodents, asking the group what they thought we owed to the Carleton beavers. I worked with my environmental ethics professor to incorporate beaver monitoring into her curriculum for spring term. When May arrived, environmental ethics students presented projects at the second annual Northfield Beaver Festival alongside a half dozen other educational booths ranging from the Minnesota Science Museum to the Fish and Wildlife Service.

This past summer, I mapped beaver dams with Dr. Fairfax. I questioned my own conception of nature as I scoured aerial imagery for the “unnatural” curves of beaver dams in rivers. At the end of the summer, I visited Washington State and interviewed people involved in human-beaver coexistence for a series of short films. Each person I spoke to framed the impacts of beavers differently, which motivated me to explore environmental storytelling in my senior thesis.

I just got back from BeaverCON (yes, it's a real conference!), where I organized a panel on human-beaver coexistence on college campuses. At BeaverCON, I met others motivated by the hopeful stories of beaver-based restoration, and I wondered how that excitement shapes our approach to conservation. This winter, I'll embark on my final beaver independent study–Creating Community Science. Collaborating with the Fairfax Beaver Lab, Dakota County Parks, and Carleton's Sustainability Office, I will collect data on beavers and water quality and host connected environmental education events.

In response to my beaver bonanza, Carleton shifted its approach to beaver management, now prioritizing nonlethal management. I've also shifted my views on the critters–more times than I can count. I got to this point because I was able to seek out, listen to, and work alongside people with different perspectives. With the Watson, I want to take this open interrogation of hard questions beyond just beaver management. I will unpack the various values of conservation biology by visiting places where beavers are at the heart of complex challenges facing conservation and local communities. I will find people like Mike who can reframe a conflict in a conversation. Along the way, I will reflect on my own relationship with the non-human natural world, using beavers as a foil as I figure out how I want to live my life. My goal is to wrestle with questions–not necessarily to answer them. I will enjoy wading through the muck as I scour landscapes for insights into our relationship with beavers, each other, and the natural world.

Humans and beavers radically reshape landscapes in a short amount of time. Things get interesting when these two visions for the landscapes conflict or align. I used beavers as a foil to wrestle with complex questions at the heart of conservation biology. My project explored how this clever creature can serve as a window into rewilding species protection, and animal welfare.

Project Proposal

Beavers aren't just cute critters—they are an excellent tool to unpack wickedly complex questions at the heart of conservation biology. Humans and beavers share the ability to radically reshape landscapes in a short amount of time. Things get interesting when these two visions for the landscapes conflict or align. During my Watson, I hope to ride on the back of the beaver—figuratively—to Norway, Britain, Chile, Argentina, and Canada. Each of these countries has unique social, historical, economic, and ecological landscapes that shape how beavers are managed and what role they play in conservation. I will investigate how people in each country conduct conservation research, manage beavers, and engage stakeholders. Along the way, I will continue to refine my own environmental ethic, probing my role and responsibilities in environmental stewardship. I will document the perspectives I encounter in a series of

short films that wrestle with an impossible-to-answer question at the heart of conservation biology: How can we balance our responsibilities to the human and non-human natural world?

My Watson begins with a visit to Norway. While Eurasian Beavers were hunted close to extinction across Europe, Norway was one of the few places where they were never fully extirpated. Beaver populations survived in Norway due to hunting regulations that ensured sustainable beaver harvesting. To understand this curious critter, I will collaborate with the person who wrote the foundational textbook on beavers—Dr. Frank Rosell. I'll explore beaver biology, beaver anatomy, and beaver behavior. I'll investigate beavers and hunting, digging deeper into the methods of behavioral ecology, and their implications for conservation. After learning the basics of Eurasian Beavers from a beaver expert, I'll travel to the Greenhouse Center for Environmental Humanities. There, I'll work with Dr. Dolly Jørgensen to unpack the unique history of beavers in Norway. I'll focus my questions on the intersections between conservation, sustainable harvest, and animal autonomy. Before leaving Scandinavia, I'll spend a few days with beaver hunters assisting in their harvest, hopefully dining on beaver meat paired with bäverhojt (beaver anal gland excretion vodka).

With a strong understanding of beaver biology and what conservation looks like in a place with an abundance of beavers, I'll head to Britain. Following 500 years without them, beaver reintroductions are now part of the growing 'rewilding' movement. As the beavers have returned, communities increasingly face conflicts they've never encountered before. While most reintroductions are carefully coordinated in collaboration with local governments, a secretive network of rogue rewilders known as "beaver bombers" have taken it upon themselves to illegally reintroduce beavers to regions they believe the government is not repopulating fast enough.

Working with Dr. Brazier from the Center for Resilience in Environment, Water and Waste at the University of Exeter, I'll explore the impact of the rewilding movement on the landscape, people, and values behind conservation biology. I will visit reintroduction sites and interview both landowners facing conflict and leaders of the rewilding movement. I will live and work alongside a farmer with beaver on their property, seeing first-hand what coexistence looks like when beavers are a protected species. Building on my connections from BeaverCON, I'll meet beaver bombers at the 10th annual Beaver Symposium in Scotland. If I'm lucky, I'll find a few who will let me shadow their activities, as I consider what methods might be acceptable in the name of conservation.

As winter arrives in the Northern Hemisphere, I will venture south to two countries learning to manage introduced beavers in a wildly different context: Chile and Argentina. Beavers were introduced to the tip of South America in 1945 to establish a new frontier

for the fur trade. Since then, invasive American beavers have multiplied like the rodents they are, wreaking havoc on the endemic biodiversity of Tierra del Fuego and Cape Horn. Bi-national eradication projects have largely been declared impractical. Now management efforts vary by park and agency as land managers pivot to protecting endemic biodiversity from beavers on local scales.

My previous time in Chile on a study abroad program was spent in Northern Patagonia, 1000 kilometers from the nearest invasive beavers. The history, climate, culture, and ecology of the tip of South America are wildly different from the beaver-less Northern Patagonian landscapes I lived in during my time abroad.

In Southern Chile, I will explore how the type of protected area affects the approach to beaver management and conservation biology. I will visit three different protected areas, each with its own unique story: a government-run nature preserve (Laguna Parilla National Reserve), a private protected area managed and funded by the US-based Wildlife Conservation Society (Karukinka Nature Park), and a park founded by environmental philosophers focused on socio-ecological education and preserving non-vascular plant biodiversity (Omora Ethnobotanical Park). At each protected area, I will also assist with day-to-day management efforts. I will interview staff about the reasons and values behind their management plans. I'll investigate how the structure, mission, and funding of the different types of protected areas shape what stewardship looks like.

In Argentina, I will unpack the research frameworks shaping the future of conservation. Conservation began as a movement focused only on protecting species and preventing extinctions. Over the following decades, this narrow perspective resulted in environmental policy that often harmed already marginalized people, driving a wedge between people and landscapes. Recently, the field has refocused on promoting policies that enrich biodiversity and the lives of local people through socio-ecological research. At the multidisciplinary Austral Center for Scientific Research in Ushuaia, I will get to know both the unique ecology, research, as well as the researchers who aim to protect biodiversity from threats like invasive beavers. I will interview researchers tackling conservation from different angles, appreciating the nuances of how people from different disciplines think about managing invasive ecosystem engineers.

A year focused on beavers would be incomplete without a visit to Canada. There, I will explore how traditional ecological knowledge affects conservation priorities, and how communities respond to unfamiliar ecological changes. Canadian history was shaped by the fur trade, with First Nations communities establishing complex relationships with fur companies and voyageurs. Collaborating with Dr. Cherrie Westbrooke at the University of Saskatchewan, I will investigate the past and present understandings of

beavers among First Peoples in Southern Canada where beavers have lived for tens of thousands of years.

I will then travel to the Canadian Arctic, where communities have always lived without beavers—until now. As the tundra warms and woody vegetation moves north, so do beavers. The ponds they build accelerate the melting of permafrost, releasing massive amounts of methane and threatening the towns and rare endemic tundra species. Beavers inadvertently boost local biodiversity as they build familiar habitats for other species moving north due to climate change. This dynamic raises complex questions about which species to prioritize, when species migrating north are deemed invasive, and how limited conservation funds should be spent. I will work with the researchers part of the Beavers and Socio-ecological Resilience in Inuit Nunangat (BARIN) as they explore the impacts of beavers on people and ecosystems in the Inuvialuit Settlement Region. During my time, I'll assist with ongoing research, visit places where beavers are changing the landscape, and get to know the local people living alongside these rapid changes.