

Hello Dr. Francis,

Please find below an expanded overview of my applied experience in ecology and biology with Aark Wildlife Education and Rehabilitation Center (2019 - 2022) and Audobon Society of the North Woods (2001 - 2003) in the interest of satisfying my Natural Science prerequisite.

I will expound on my experiences at both organizations beneath each entry from my MES Application Resume. Please let me know if further clarification is desired. Thank you very much for being open to working with me in this capacity so that I may begin MES with the Fall 2023 cohort. I appreciate all of your help and consideration.

Sincerely,

-Gregory Bortnichak

Aark Wildlife Education and Rehabilitation Center, Chalfont PA

Volunteer, 2019 - 2022

- Provided preliminary medical assistance to injured wild animals
- Performed capture and transport for potentially dangerous wild animals
- Maintained high standards of care and cleanliness with at-risk birds, mammals, and reptiles
- Facilitated proper intake and triage of injured, orphaned, and/ or habituated wild animals
- Oversaw call center and in-person drop off (giving practical advice and emotional support to people faced with animals in pain)
- Ensured proper Covid and Rabies protocols are adhered to and that both animals and people are held to the highest degree of safety standards at all times
- Cataloged and reported medical anomalies in specific animal populations as well as any illegal human activity impacting native fauna to supervisor

My time as a volunteer at Aark Wildlife offered me hands-on experience identifying and tending injured terrestrial and semi-aquatic vertebrates of Southeastern Pennsylvania. We accepted animals in need of care during the day via an in-person intake desk, and kept an incubator running outside overnight to ensure temperature-sensitive individuals could be dropped off and kept safely outside of office hours. We would also occasionally complete capture calls or work with local authorities to ensure safe removal and transport of potentially rabid or otherwise dangerous individuals. We would accept patients ranging from anything as small and delicate as newborn mice to large mammals such as beaver, raccoons, foxes, etc. Though we were open year-round and staffed every day of the week, the majority of our intake occurred in the spring. We would stay busy through the fall, needing a minimum of six staff and volunteers to successfully run each shift, which would run between 4 and 8 hours.

I completed my rabies vaccination series in the summer of 2021 so that I could work with rabies vectors. I primarily fed and cleaned skunks, raccoons, woodchucks, and fox doing my best to maintain minimal contact to avoid socialization as well as potential injury to myself which would inevitably result in euthanizing the individual to test for rabies as was protocol despite all of us being vaccinated against it. We practiced hazing with adult foxes and raccoons to ensure they would not approach people once released. Orphaned beaver under the age of three were appointed an individual care-taker who would take the young beaver swimming in our onsite

pool and provide social support as young beaver need it to survive and do not remain socialized once re-released into the wild with other adult beavers.

Our clinic received a particularly high volume of birds. I excelled in identifying chicks and fledglings and most often would dedicate myself to determining their correct diet, supplying appropriate enclosures, and keeping them clean. I learned how to properly handle and feed raptors as well, though the larger birds of prey posed a bit more risk and such were typically tended by two or more clinicians at a time. All of our animals were expressly not socialized and released as close to where they were found as possible, with the exception of those that were either too socialized for release or suffered lasting consequences from injuries in the wild (typically reduced ocular function as a result of head trauma from collisions with vehicles), which we would house for their lifespan and consider for use as an education animal provided their temperament and stress levels were well-suited for such work.

Having worked primarily with Amanda Leyden who was passionate about reptiles, I learned how to treat shell-injuries in turtles and became quite adept at identifying native and invasive turtles and snakes. Most reptiles were rather low-maintenance after initial cleaning, bandaging, and feeding and would typically make impressive recoveries over time. Sadly, we would get a considerable number of persecuted reptiles and would occasionally have to involve law-enforcement to intervene in repeated acts of animal cruelty.

I found working with small mammals to be quite enjoyable, if not a bit overwhelming. Juvenile rabbits needed to be tube-fed and were at risk of fatal internal injuries or self-induced heart-attack if the clinician was not gentle enough. This took a great deal of patience and skill, but I am proud to say that I never once lost a rabbit while in my care. Working with fawns entailed bottle feeding and removing ticks, which could often take hours and was primarily difficult due to their high mortality rate once separated from their mother. Juvenile squirrels and possums were by far the easiest and most animated patients in the clinic. Our native flying squirrels were a different story, often escaping and being equipped with sharp incisors and an impressive bite-force for their size. We had a bat specialist onsite, so I would only handle bats briefly upon intake.

Counterintuitively, a great deal of my work at Aark dealt with people rather than wildlife. While on intake, I would answer calls from distressed individuals unsure of how to handle an injured or orphaned creature. I would typically practice calming techniques first and then ask questions to assess the animal's condition before giving recommendations on capture and transport. The most difficult part of this of course was assisting young children with their grief over having to give up a wild-animal they had either found or captured and bonded with. Explaining why it was important for the animals to stay in the wild or be returned to the wild after healing from an injury was always a delicate art. More difficult than that was providing support for people of all ages through the grief of encountering animals in pain or trying to save an injured creature and not being able to. We kept a tissue box on hand at all times for this purpose, and as I was deemed a patient individual with a calming presence, I was often sent to soothe good samaritans who wished they could have done better.

All in all, the most important takeaway from Aark for me was the ability to observe how people were affecting local wildlife populations. Cataloging just how many of which species would come in each year and from where revealed how development was encroaching on natural habitat and displacing specific species, often with very specific niches in the varied ecosystems of Southeastern Pennsylvania (take, for example, the marsh-dwelling massasauga rattlesnake which is now relegated to just two counties in the state of Pennsylvania due to habitat loss). We could observe how the health of bird populations would illuminate greater health issues with our local waterways. An unexpected color change in the beaks and feet of ospreys raised a red flag for our staff to notify of potential pollutants in local feeding areas. The array of invasive turtle species that have now become established following careless pet release practice is absolutely staggering. The fact that practically all of our patients come orphaned or injured from cars or construction is very difficult for me to witness personally, not to mention the devastating impact on that particular environment by the Spotted Lanternfly, which I wrote about in-depth in my analytical essay, an unfortunate consequence of global commerce. As upsetting as much of this is, I felt better about playing a small role in giving back to a voiceless community and supporting an organization so heavily involved in educating young people about how to be stewards of their local environment.

Audubon Society of the North Woods (Sandstone, MN)

Camp Counsellor, Summers 2001 - 2003

- Worked alongside ecologists and educators with youth from across the US at an ecology-focused summer camp
- Facilitated nature hikes, bird-watching, caving, orienteering, sustainable arts and crafts projects, canoeing, and basic water sample collections in diverse ecosystems throughout northern Minnesota
- Ensured the safety and well-being of youths aged 10 - 16

My involvement in the Audubon Society of the North Woods was absolutely formative. In particular because I was so young when I became involved, and I remained connected to the organization throughout my adolescence into early adulthood. I began as a camper, completing my first sleep-away ecology camp at the tender age of 10. I loved it so much I would go back for two full camp sessions each summer until I graduated from camper to counselor. Typically my involvement would last approximately one month each summer, and involve back-country backpacking throughout Minnesota, Wisconsin, and the Dakotas in places like Badlands National Park, the Black Hills, and the Boundary Waters.

Each camp session had a different focus. Though it was a long time ago now, I particularly enjoyed studying bog ecology in northern Minnesota and desert ecology in the Badlands. A unit on wild wolf conservation and rehabilitation gave me my first taste of wildlife rehabilitation and I was absolutely mesmerized. To this day I have maintained my passion for wild canids and have been thrilled to see wolves making somewhat of a comeback in recent years, both via federal repopulation efforts, general public awareness and advocacy, and their absolutely incredible will to survive as exhibited with interbreeding with coyotes and reclaiming eastern territories as a hybrid species. Perhaps the unit that had the most impact on me, however, was field ornithology. I became an avid birder as a result and would identify species by both site and sound and log my findings until I re-focused on the humanities in college.

As a counselor, my role was primarily childcare, although I was invited to educate in areas I was deemed proficient. I taught orienteering and basic camp skills (i.e. fire safety, camp etiquette, bear-bags, tent set-up and breakdown, etc.), led birding exhibitions, and assisted with geological day-hikes and caving expeditions. To this day, my summers as a counselor stand out as some of the most fulfilling work experiences I've ever had. Certainly, I am grateful for what they have taught me about the absolutely enthralling ecosystems of that region, but also about myself insofar as I am called to educate, and am deeply fulfilled by sharing the wonder of our natural world with young people.