Magdalena Miecznik

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Experience

SEASONAL VEGETATION SAMPLING OF INVASIVE SPECIES CREW LEAD | UNIVERSITY OF MONTANA | JUNE 2023 – AUGUST 2023

- My duties as crew lead included supervising my field crew with GPS and GIS mapping protocols, and US Forest Service data collection protocols. This crew was measuring and mapping *Ventenata dubia* (VEDU), an invasive grass in Montana. Mapping used ESRI Suite, including FieldMaps for data collection. Measurements of vegetation status, size, density, and percent cover of dominant and invasive grass species were documented.

- As crew lead, I was responsible for safely traveling to each survey location, planning out how to survey each are of land, ensuring the safety of myself and my crew in bear country, ensuring quality of data collection, retaining knowledge of native and invasive grass and forb species.

SEASONAL FOREST ECOLOGY AND BOTANY FIELD CREW MEMBER | UC DAVIS | JUNE 2022 – AUGUST 2022

- This forest and fire ecology crew was assessing Giant Sequoia regeneration after megafires in the Sierra Nevada in the Sequoia National Forest and Monument. I was responsible for assisting in vegetation sampling and entering data. My crew worked in remote field sites, often in areas burned by wildfire. The crew carried out established US Forest Service data collection protocols. Measurements included vegetation status, size, density, cover, etc. as well as landscape conditions. Forest stand structure and seedling regeneration was determined for Giant Sequoias as well as other alpine species in the Sierra Nevada Mountain range. Fire severity was also assessed from the Windy Fire that occurred in 2021. GPS and GIS were utilized for grove and tree locations.

- I gained skills in data entry in Microsoft Excel, tree and plant identification, working in extreme environments and conditions, navigating with maps and GPS units, communicating with radios, training in wilderness first aid, and adapting to changing conditions. The crew camped in the backcountry near the groves for the duration of the work week.

- During the second work week, my crew lead was injured, so I was handed the role of temporary crew lead until he returned. I got to train the 3 new crew members in data collection methods, as well as develop a welcoming environment. During this time, I was also responsible for planning out each work day, ensuring safety protocols were followed, navigating safely to study sites, maintaining and cleaning equipment, and ensuring quality of data collection.

BARN HAND | THREE FEATHERS STABLE | JUNE 2021 – JULY 2021

- As a barn hand, my duties included feeding 7-9 horses in the morning, afternoon, and evening. I had to attend to the dietary needs of each individual horse, and turn them out into their proper pastures.

- Other barn duties involved cleaning each indoor stall, as well as outdoor areas. I had to check watering stations for each area, and clean up general spaces. The indoor arena was watered every morning and raked down with an ATV. I had to interact with clients and horse owners, help tack horses for lessons, and attend veterinary checkups and emergencies.

TUTOR | KUMON TUTORING | JANUARY 2018 – APRIL 2018

- I was a tutor at a local company while in my junior year of high school. My responsibilities were helping children with basic learning, reading, and math skills. I also graded homework and classwork. With the younger children, I would teach them how to use cognitive skills to solve problems with reading and/or math.

- I learned how to be patient with younger children, as well as children with learning disabilities. I tutored children between the ages of 2 and 16.

SUNDAY BARN HAND | ACADEMY STABLES | MAY 2017 – AUGUST 2017

- Sunday barn work included taking care of around 30 horses every Sunday. All horses had to be fed in mornings, afternoons, and evenings. Most horses were privately owned, which had special dietary needs and care. Privately owned horses needed to be turned out into their designated pastures. Each stall had to be cleaned out, as well as public spaces. I had to interact with private horse owners, as well as clients for horse lessons.

Education

BACHELOR OF SCIENCE - ECOLOGY | MAY 2023 | MONTANA STATE UNIVERISTY

- Major: Conservation Biology and Ecology
- Minor: Geographic Information Systems (GIS)
- Honors College Degree – Magna Cum Laude
- GPA: 3.58
- Academic Achievement Award Scholarship

Skills & Abilities

- R and Python Programming and Statistical Analysis
- ESRI Suite: ArcGIS Pro and Online, FieldMaps, Survey123
- Working in Extreme Environments
- Grass and Forb Identification: Montana ID
- Tree Identification: Sierra Nevada and Western US ID
- Grass and Forb Identification: Montana
- Driving a manual transmission
- Driving an ATV
- Being comfortable in the backcountry
- Being comfortable backpacking for multiple days
- Languages: English, Polish, and French

Certifications

- CPR and First Aid (June 2023) – Jolt CPR
- Avalanche 1 Training (January 2023) – AIARE Avalanche Research + Education
- Wilderness First Aid (May 2022) – NOLS Wilderness Medicine

Volunteer Work

- **Horse Camp Volunteer and Instructor (High School)**
  - During my freshman and sophomore summers in high school, I would volunteer at my local barn (Academy Stables) at summer camps. My responsibilities included coordinating activities for the campers, teaching children responsible horse-and-human etiquette, as well as teaching campers basic horse anatomy and care. The children in these summer camps were between 4 and 16 years old. As a volunteer instructor, I would teach the campers how to clean and prep a horse for riding, how to tack a horse, and how to ride both Western and English disciplines.

Awards

- Dean's List: Spring 2020, 2021, 2023 (Montana State University)
- Dean's List: Fall 2020, 2021, 2022 (Montana State University)
- Dean's List: 2016, 2019 (Peak to Peak Charter School)
- High Honor Roll: 2017, 2018, 2019 (Peak to Peak Charter School)

Projects

- **Invasive Grass Remote Sensing Project with a focus on VEDU (UM Spatial Analysis Lab, 2023)**
  - Along with the other crew lead on the VEDU field work I helped lead in the summer of 2023, we created a StoryMap to highlight the importance and process of this data collection. Because *Ventenata dubia* (VEDU) is an extremely invasive grass species, the goal of this research was to determine where Ventenata was present in Montana. This ground control data collection was to create and update climactic models that can predict where Ventenata can occur due to many factors (climate, elevation, aspect, ecosystem, etc). Remote sensing using satellite imagery will be based off silicate concentrations in the grass samples that were taken as well, which will be included in the predictive models. Link to StoryMap: https://arcg.is/0z1fui0
- **Woody Draws and Emerald Ash Borer Analysis (UM Spatial Analysis Lab, 2023)**
  - Using data wrangling techniques along with spatial analysis, my colleague and I were able to determine health of woody draws, thus determining suitability of sites to collect seeds from these areas for future protection against the emerald ash borer. Other analysis was performed on these sites that were sampled by UM field technicians in 2022. Other factors that may affect the suitability of these sites may include fire, insect disease risk, and bulk canopy density. These layers helped to visually determine how sites may be affected by these factors. A StoryMap was created to showcase the research and analysis (https://arcg.is/mHC4S).
- **GIS Remote Sensing and Spatial Analysis Project with National Parks Conservation Association (2023)**
  - Working with my Applied GIS and Spatial Analysis class, as well as with the National Parks Conservation Association, the goal was to create a detailed story describing how pronghorn migration and habitats will change over the next 100 years due to climate change. The main deliverables of this project included a map of predicted range shifts of the pronghorn in the Greater Yellowstone Ecosystem, a Model Builder Template in ArcGIS Pro to apply the process to other species and/or projects, as well as a collection of data used for the project for future access and storytelling.
- **GIS Trail Mapping Project with GVLT and MSU – Trail Mapping and GIS Data Processing (2021)**
  - Through the GPHY 358 class (GPS Mapping Service Learning) at Montana State University, I worked with a group of classmates to help Gallatin Valley Land Trust determine the accuracy of the Mount Ellis and Kirk Hill trail systems in Bozeman. By using a GIS receiver, ArcGIS mapping tools, and data

processing techniques, the team and I were able to accurately map these trails and update general maps. This project helped me understand what project planning looks like for a GIS project in real life.

- **Internship at Digital Globe (MAXAR) – Satellite Calibration (2018)**
  - I worked alongside a satellite technician to help calibrate satellites. Although this was a very basic internship, I helped to understand the basics of calibration and what methodology it takes. I deployed materials in the field and input basic data into a computer system.
- **Internship at Case Western Reserve University – Grabowska Biological Lab for Colon Cancer Cell Research (2018)**
  - I worked under Magdalena Grabowska in her lab researching colon cancer cells in mice. I used basic laboratory procedures, such as Gel Electrophoresis, microscopic techniques, and PCR. This was a basic internship designed to help me understand basic lab etiquette in a professional setting.