

Moriah L. Young

Department of Integrative Biology
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EDUCATION

Michigan State University

Ph.D. Student

Advisor: Phoebe L. Zarnetske

Department of Integrative Biology and Ecology, Evolutionary Biology, and Behavior (EEBB)

East Lansing, MI

Current

University of Michigan

Bachelor of Science

Major in Program in the Environment, minor in Sustainable Food Systems

GPA: 3.22

Ann Arbor, MI

Graduated April 2015

PROFESSIONAL FIELD AND RESEARCH EXPERIENCE

MICHIGAN STATE UNIVERSITY

Department of Integrative Biology

Research Technician

Pellston, MI

Hickory Corners, MI

April 2019 – August 2020

Description: I directly manage and oversee a long-term climate warming experiment on early successional plant communities located at the University of Michigan Biological Station and assist at a paired site at Michigan State University's (MSU) Kellogg Biological Station. The goal of the experiment is to quantify the single and interactive effects of climate change and insect herbivory on plant communities through time. Dr. Phoebe Zarnetske from MSU is the principal investigator of this experiment.

Responsibilities:

- Collect plant field data on phenology and abundance
- Maintain and collect data from Onset HOBO data loggers
- Responsible for entering and managing data collected using Google sheets and R
- Certified pesticide applicator in the State of Michigan – responsible for applying insecticide treatments during growing season
- Experience in using the computer programs R, RStudio, GitHub, and ImageJ
- Experience in using a ceptometer to measure PAR (photosynthetically active radiation) as a measure of light interception in plant communities
- Created a soil sampling protocol and experienced in soil sampling techniques
- Experience in processing plant leaf tissue for carbon and nitrogen analysis
- Ability to work alone in addition to effectively coordinate and communicate with the principal investigator, another technician, and researchers

U.S. FOREST SERVICE (USFS)

Lead Forestry Technician

Portland, OR

October 2018 – November 2018

Description: Full-time emergency hire position with the USFS's Pacific Northwest (PNW) Research Station, Forest Inventory and Analysis (FIA) program. FIA is part of a nationwide program that collects, processes, analyzes, evaluates, and publishes comprehensive information on forest and other related renewable resources.

Responsibilities:

- Lead a crew of technicians in the field to obtain data while ensuring the safety of the crew and quality of data collection
- Contacted and communicated with land owners in order to access plots on their land
- Took measurements for tree data (species, diameter, height, insect and disease, damage); understory vegetation (shrub, herb, grass species and percent cover); down woody material (line transects, litter and duff depth); and site index and attributes (site tree selection, slope, aspect, topographic position, distance to water)
- Read maps, aerial photos and GPS units to navigate to and find permanent plot locations
- Hiked on and off trail through rugged, steep, slippery, and brushy slopes
- Used botanical keys and plant association guides to identify plants and site conditions
- Experienced in using a compass, clinometer, increment borer, range finder, GPS, and a portable data recorder

OREGON STATE UNIVERSITY

**Department of Forest Ecosystems and Society
Biological Science Research Technician**

Corvallis, OR
May 2018 – September 2018

Description: I worked alongside an Oregon State graduate student in Dr. Meg Krawchuk's lab looking at the effects of an invasive grass species, *Ventenata dubia*, on fire regimes in the Blue Mountains of Oregon. When growing in dense patches, *Ventenata dubia* increases horizontal continuity of fine fuels and increases the risk of fire spread in plant communities that historically had discontinuous fuels.

Responsibilities:

- Sampled vegetation using transects and quadrats to estimate percent cover and identified plants to species by sight and use of dichotomous keys
- Drove OSU Motor Pool vehicles, hiked off-trail, and navigated to sampling plots using Global Positioning System (GPS), aerial photographs, and maps
- Recorded and managed data using paper forms and electronic tablets in conjunction with established protocols
- Characterized field plots by measuring micro-topography, canopy cover, and plant associations
- Dug and described soil pits to collect soil samples and measurements at each transect

**U.S. FOREST SERVICE (USFS)
Forestry Technician**

Portland, OR
April 2017 - October 2017

Description: AmeriCorps internship turned full-time position with the USFS's Pacific Northwest (PNW) Research Station, Forest Inventory and Analysis (FIA) program. FIA is part of a nationwide program that collects, processes, analyzes, evaluates, and publishes comprehensive information on forest and other related renewable resources.

Responsibilities:

- Took measurements for tree data (species, diameter, height, insect and disease, damage); understory vegetation (shrub, herb, grass species and percent cover); down woody material (line transects, litter and duff depth); and site index and attributes (site tree selection, slope, aspect, topographic position, distance to water)
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EARTHCORPS
Environmental Restoration Crew Member

Seattle, WA
February 2016 – December 2016

Description: AmeriCorps service learning position where individuals worked on a crew of 5-7 young adults performing environmental restoration around the Puget Sound. EarthCorps is a non-profit based in Seattle, WA that brings together young adults from around the U.S. and other countries for a yearlong leadership-training program.

Responsibilities:

- Responsible for the efficiency of accomplishing projects and the quality of final project
- Knowledge of: PNW plant identification, front country trail construction, invasive species removal; manual and herbicide application, native plant installation, erosion control, restoration site maintenance and surveying
- Lead groups of volunteers of people of all ages

NATUREWRITE, LLC
Field Technician

Ann Arbor, MI
November 2015 - January 2016

Description: At the University of Michigan I worked on an independent research project, advised by Dr. Jacqueline Courteau, looking at the effects of white-tailed deer browsing on woody plant species in an Ann Arbor park. The findings of the study were given to the city of Ann Arbor to help make deer population management decisions, leading to a further, more long term study, in which I worked as a field technician.

Responsibilities:

- Used Collector for ArcGIS to create maps to spatially represent the data collected and to show major findings
- Assisted with the setup of a vegetation study to assess deer impacts on vegetation in local Ann Arbor parks by digging seedling holes, planting seedlings, creating and installing fences and recording preliminary measurements using Collector for ArcGIS

UNIVERSITY OF MICHIGAN BIOLOGICAL STATION
Field Technician

Pellston, MI
June 2015 - August 2015

Description: I worked on a large scale Great Lakes wetland restoration project through Loyola University Chicago that is examining the plant community response to biomass-removal restoration approaches conducted in *Typha x glauca* (hybrid cattail) invaded wetland ecosystems and exploring the renewable energy production potential of utilizing restoration-harvested invasive species biomass.

Responsibilities:

- Assisted with the set up of treatment and control plots and conducted pre-treatment vegetation surveys
- Collected biomass and soil core samples
- Worked as a primary operator of a wetland flora harvester
- Performed lab tasks such as enter data and processed biomass samples

FELLOWSHIPS AND AWARDS

National Science Foundation (NSF) Graduate Research Fellowship (GRFP)
Amount: 3 years funding; \$138,000

Awarded March 2020

The Segal AmeriCorps Education Award
Amount: \$2,887

Received October 2017

The Segal AmeriCorps Education Award
Amount: \$5,730

Received December 2016

CONTRIBUTIONS TO LITERATURE

- J. Courteau, **M. Young**. (2015). White-tailed deer (*Odocoileus virginianus*) browse damage in Ann Arbor, Michigan Bird Hills Nature Area, Winter 2015. Retrieved from <https://www.wc4eb.org/wp-content/documents/DeerBrowseBirdHills2015.pdf>
- M. Adams, J. Evashevski, A. Stowe, **M. Young**, E. Zettell. (2014). Resource defense and territorial behavior in Ruby-throated Hummingbirds (*Archilochus colubris*). *Deep Blue, Biological Station, University of Michigan (UMBS)*. Retrieved from <http://hdl.handle.net/2027.42/110134>

PRESENTATIONS

Young, M. 2018. What is the U.S. Forest Service's (USFS) Forest Inventory and Analysis (FIA) Program and Why it Matters to Conservation. *The Stewardship Network Conference: The Science, Practice, and Art of Restoring Native Ecosystems*. Kellogg Conference Center, East Lansing, MI

OTHER RELEVANT EXPERIENCES

Otis Douglas Hyde Herbarium - University of Washington Botanic Gardens Seattle, WA
September 2018 – March 2019

I volunteered at the herbarium processing plant specimens. I also helped to create cards to sell, using pressed plants, in order to raise money for the herbarium.

Global Observation Research Initiative in Alpine Environments (GLORIA) Willowa Mountains, OR
July 30th, 2018 – August 2nd, 2018

The GLORIA program operates a worldwide long-term observation network with permanent plot sites in alpine environments. Data collected at the GLORIA sites are used to discern trends in species diversity, composition, abundance, and temperature, and to assess and predict losses in biodiversity in alpine ecosystems.

- Hiked to three summits and assisted with the set up of plots and data collection with a group of volunteers.

Student Conservation Association (SCA) Mt. Rainier National Park, WA
August 28th, 2017 – September 1st, 2017

I had the opportunity to do a job shadowing for my internship with the SCA. I chose to help Dr. Janneke Hille Ris Lambers' lab at the University of Washington, Seattle for a week and to learn about the research being conducted by her lab at Mount Rainier National Park.

EDUCATIONAL TRAVEL EXPERIENCES

University of Michigan Biological Station (UMBS)
General ecology field course

Pellston, MI
May 2014

Camp Davis Rocky Mountain Field Station
Field geology course

Jackson Hole, WY
August 2012

OTHER SKILLS AND ABILITIES

- Knowledge of R, RStudio, and GitHub
- Knowledge of ArcGIS (ArcMap, ArcCatalog, metadata)
- Proficient in the French language