

**McKensie A. Vaske**  
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## Education

**B.A., Ecology, Evolution and Organismal Biology, 2018-2022**

**B.A., Environmental Science, 2018-2022**

University of Northern Iowa, Cedar Falls, IA 50613

Certificate in Sustainability

Minor: Earth Science

Cumulative GPA: 3.85/4.00

## Relevant Coursework

Ichthyology

Geographic Information Systems I

Developmental Biology of Animals

Field and Lab Methods in Hydrology

Environmental Hydrology

Evolution, Ecology, and Natural Sciences

Chemistry I & II

Organic and Biochemistry

Environmental Geology

College Writing and Research

Field Zoology of the Vertebrates

Conservation Biology

Evolutionary Biology

Environmental Health Science

Statistical Methods

Plant Diversity and Evolution

Environmental Technology & Society

Genetics

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## Employment

***Senior Aquatic Field Technician, Crew Lead*—Mar. 2023-Present**

Illinois River Biological Station, Illinois Natural History Survey, Havana, IL

- Crew lead for the Multi-Agency Monitoring (MAM) project in the Marseilles, Starved Rock, Peoria, and Alton reaches of the Illinois River; sampling with small and large hoop nets, mini and regular fyke nets, and boat-mounted pulsed-DC electrofishing gears
- Communicated among other MAM crew leads planning field sampling
- Supervised and trained technicians on fish sampling techniques, fish identification, electrofishing safety, and boat backing, trailering, and driving
- Trained another technician on crew leading job duties
- Crew lead for a fish habitat project on the La Grange reach of the Illinois River via four electrofishing sites weekly during the field sampling periods
- Collected approximately 25 Silver Carp weekly for osprey bird rehabilitation during the field sampling periods
- MAM and Long-Term Electrofishing (LTEF) data entry using an online Fish-App software on Microsoft Access
- Entered completed MAM site data in a shared Excel spreadsheet for multi-field station communication
- Created a fish and reptile identification guide for new technician use
- Piloted watercraft and provided scientific and technical support with the transportation and installation of an experimental fish ladder removal system

- Collected ~100 Silver Carp in Peoria and La Grange backwaters for an ongoing population demographic study
- Removed sagittal otoliths from Largemouth Bass, Orangespotted Sunfish, Bluegill, Gizzard Shad, and Yellow Perch for an ongoing vital rates study
- **These responsibilities are in addition to the listed responsibilities of my Senior Aquatic Field Technician Lab Coordinator and Aquatic Field Technician positions below.**

*Senior Aquatic Field Technician, Lab Coordinator*—————Dec. 2022-Mar. 2023

Illinois River Biological Station, Illinois Natural History Survey, Havana, IL

- Independently implemented a QA/QC process using Excel for the ongoing vital rates study (more than 19,000 otoliths from 17 identified species)
- Provided a platform to share images and data to the vital rates partners
- Sent weekly otolith project progress updates to the project PI and partners
- Organized and stored approximately 19,000 otoliths for easy long-term access
- Inventoried approximately 1,000 historic freshwater drum otoliths as an addition to the vital rates study
- Weighed all Freshwater Drum otoliths for an otolith weight-to-age ratio study
- Updated accurate reproducible SOPs for inventorying, weighing, mounting, sectioning, picturing, and measuring otoliths
- Mounted otoliths in epoxy cubes, sectioned cubes in a Buehler IsoMet Low Speed Saw, and imaged the sectioned slices using Leica Microsystems computer software on an S APO Stereo Microscope with a K3C Camera for Bluegill, Channel Catfish, Freshwater Drum, and Largemouth Bass otoliths
- Measured Bluegill and Largemouth Bass incremental age and growth between annuli using Leica Microsystems Version 5.1.0.25593
- Supervised technicians assisting with the vital rates study
- Detailed data management of the vital rates study
- Removed Silver Carp aging structures (otoliths, pectoral spines, and post-cleithra)
- **These responsibilities are in addition to the listed responsibilities of my Aquatic Field Technician position below.**

*Aquatic Field Technician*—————May 2022-Dec. 2022

Illinois River Biological Station, Illinois Natural History Survey, Havana, IL

- Assisted in inventorying more than 19,000 otoliths from 17 identified species as part of an ongoing vital rates study
- Sectioned sagittal otoliths of 17 identified species using a Buehler IsoMet Low Speed Saw
- Pulsed-DC electrofishing dip netting
- Setting and pulling of fyke nets and baited hoop nets
- Frequent trailering and driving of outboard console boats up to 25' long
- Trained on operating a pulsed-DC electrofishing boat and shallow running-double mud motor electrofishing boat
- Trained on driving net boats while technicians set and pull fyke nets and hoop nets
- Game and non-game fish and turtle identification sampled on the Illinois River, Mississippi River, and Emiquon National Wildlife Refuge
- Fish and turtle data entry on Microsoft Access and paper datasheets for Long-Term Resource Monitoring (LTRM) and MAM projects

- Identification of formalin-preserved fish from the previous field season for MAM, LTRM, and LTEF projects
- Performed LTRM water quality sampling on the Illinois River via collection of water samples, measured water velocity (Hach FH950 flow meter), and filtered sampled water using a peristaltic pump (MasterFlex L/S Portable Sampler)
- Processed the LTRM water quality samples in the lab for total suspended solids and turbidity measurements (Hach 2100P Turbidimeter)
- Sampled LTRM/LTEF/MAM water quality parameters (velocity, secchi disk, dissolved oxygen/specific conductivity/water temp (YSI meter)) on the Illinois River and Mississippi River
- Winterized boats: two-stroke, four-stroke, and mud motor oil changes, fuel lines, air filters, reverse transmission fluid, fuel filters, lower unit oil, addition of Stabil to boat fuel tanks and generator fuel reservoirs, generator oil change, and greased zerks
- Truck and boat trailer tire and bearing maintenance
- Repaired fyke nets, hoop nets, and dip nets
- Grounds maintenance: mowing, weed whacking, spraying for weeds, shop upkeep
- Extracted silver carp ovaries
- QA/QC zooplankton data entry

*Fisheries Seasonal*—————May 2021-Aug. 2021  
Manchester Fish Hatchery, Iowa DNR, Manchester, IA

- Performed daily trout culture activities: feeding and cleaning indoor/outdoor raceways and outdoor ponds
- Assisted with frequent check-weights within the raceways
- Selective removal of compromised fish for population fitness and data collection
- Loaded a specified number of rainbow trout on daily stream stocking trucks, navigated to the designated streams, stocked trout in these streams, and recorded angler pressure
- Assisted full time staff in depredation efforts and removal from the hatchery grounds
- Various hatchery grounds and stream trails maintenance
- Assisted in the movement and unloading of fish from other hatcheries
- Frequently operated a tractor
- Communicated with the general public at the hatchery and on stocking trips

*Field Zoology of the Vertebrates Undergraduate Lab Assistant*—————Jan. 2021-May 2022  
University of Northern Iowa, Cedar Falls, IA

- Conducted lab activities and helped answer student questions
- Assisted substantially with hands-on identification of preserved fish, birds, reptiles, amphibians, and mammals
- Attended and assisted with class trips and helped identify vertebrates in the field

*Chemistry I Undergraduate Lab Assistant*—————Aug. 2021-Dec. 2021  
University of Northern Iowa, Cedar Falls, IA

- Ensured student safety while allowing students freedom to perform their designed experiments
- Checked students were using lab equipment appropriately
- Answered course and lab related student questions

*Cell Structure and Function Undergraduate Lab Assistant*—————Aug. 2021-Dec. 2021  
University of Northern Iowa, Cedar Falls, IA

- Graded student lab assignments
- Ensured student safety and proper lab equipment usage
- Answered course and lab related student questions

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## Professional Presentations

(Presenting author denoted with \*)

**Vaske, M. A.\***, R. L. Schmidt\*, J. A. DeBoer, and W. Bouska. 2023. How do high- and low-river stages affect fish catch rates and community composition? Poster. Mississippi River Research Consortium. La Crosse, WI. **Apr. 2023**

**Vaske, M. A.**, H. Wimberly, L. E. Solomon, D. Sutton, C. Capon, K. A. Maxson, and J. T. Lamer\*. 2023. Vital rate otolith inventory and processing. Oral. Upper Mississippi River Restoration Program Long-term Resource Monitoring Element All-Hands Meeting. Muscatine, IA. **Apr. 2023**

Schmidt, R. L.\*, **M. A. Vaske\***, J. A. DeBoer, and W. Bouska. 2023. How do high- and low-river stages affect fish catch rates and community composition? Poster. Illinois Chapter of the American Fisheries Society. Effingham, IL. **Mar. 2023**

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## Collaborative Research Experience

- Assisted with Rock River trot lines and trawling for gear efficiency and catchability for wintertime sampling methods of Shovelnose Sturgeon. Took lengths and weights, fin clipping for genetics, pectoral spine removal, and implantation of PIT tags and Floy tags, UIUC & INHS. **Dec. 2023**.
- Assisted with Rock River electrofishing and gill net capture of Shovelnose Sturgeon. Took lengths and weights, fin clipping for genetics, pectoral spine removal, and implantation of PIT tags and Floy tags, UIUC & INHS. Oct. 2022, **May 2023**, **Oct. 2023**
- Assisted with mussel grubbing, sorting, identification, measuring, and aging of native mussels in Bath Chute and Bellrose Island of the Illinois River for ongoing historical data collection, UIUC & INHS. **Aug. 2023**
- Assisted the Upper Sangamon River Conservancy with mussel grubbing, identifying, tagging, measuring, weighing, photographing, and release of native mussels for a 10-year project, *A Survey of Freshwater Mussels of the Upper Sangamon River: Community Science in Action*, Illinois RiverWatch, USRC, & INHS. **Aug. 2023**
- Assisted the United States Geological Survey with multi-agency capture and transport of native and invasive fish species below Lock and Dam 19 of the Upper Mississippi River for an underwater acoustic deterrent system project for invasive carp, USGS & INHS. **Mar.-May 2023**
- Assisted with the capture of Bowfin at Emiquon National Wildlife Refuge for a gape size and body tissue condition project, WIU, TNC, & INHS. **Apr. 2023**
- Assisted with macroinvertebrate sampling for a Long-Term Resource Monitoring element using a Ponar dredge on the Illinois River, INHS. **Apr. 2023**

- Assisted with the Upper Mississippi River (UMR) invasive carp commercial fishing removal efforts via gill netting and assisted with data collection, INHS. Mar.-Apr. 2023
- Assisted with Lesser Scaup measurements, banding, and release, Forbes Biological Station & INHS. Mar. 2023
- Assisted with replacing stationary tracking receivers for a flathead catfish telemetry project on the Rock River, UIUC & INHS. Dec. 2022
- Assisted with Jacksonville Lake electrofishing sampling for public angler reports, Illinois DNR. Oct. 2022
- Assisted with West Okoboji Lake electrofishing sampling of Bigmouth Buffalo and invasive carp for measurements, jaw tagging, fin clipping, and reporting, Iowa DNR. Jun. 2019

## Outreach Events

- University of Illinois Urbana-Champaign Presidential Visit Day, Havana, IL. Oct. 2023
  - Assisted University of Illinois Urbana-Champaign officials in an Illinois River boat ride, fish show-and-tell, and a Q&A to approximately 35 adults.
- Natural Resource Fair Unplug Illinois Day, Havana, IL. Jul. 2023
  - Co-led a hike from downtown Havana to the Riverfront, Nature Center, Illinois River Biological Station, and Bellrose Island presenting on the history of these places and demonstrated fish sampling gears to approximately 15 people of all ages.
- Spoon River College Lifelong Learners, Illinois River. May 2023
  - On-river electrofishing demonstration and interactive Q&A about IRBS and large-river fishes with approximately 10 adults.
- Emiquon Conservation Ecology Outreach, Emiquon National Wildlife Refuge. May 2023
  - Co-led an Emiquon Nature Preserve event with the Illinois DNR presenting to 23 PORTA High School students enrolled in a Conservation Ecology course. We demonstrated fish sampling gears, otolith and pectoral spine removal, pit tag implantation, how to properly work up a fish, and fish and reptile identification.
- Clean Water Celebration, Peoria Civic Center. Apr. 2023
  - Co-led an Illinois River fishes show-and-tell with approximately 160 grade- and middle-schoolers from multiple school districts in Peoria, IL.
- Havana Oktoberfest Parade, Havana, IL. Sep. 2022
  - Trailered a 25-foot-long boat in the parade promoting the Illinois River Biological Station reaching out to over 500 local Havana community members of all ages.
- Havana Public Library Summer Youth Program, Havana, IL. Jul. 2022
  - Assisted an IRBS crew lead in an Illinois River fishes show-and-tell with approximately 15 grade-schoolers from the Havana community.s

## Workshop Attendance

- Poster Building Workshop, University of Wisconsin-La Crosse, Mississippi River Research Consortium. Apr. 2023
- R Workshop, Illinois Chapter of the American Fisheries Society. Mar. 2023

## Certifications

- Illinois DNR Boater Safety. 2022
- Adult Standard First Aid/CPR/AED, American Red Cross. 2022

## **Trainings**

- R for Data Science: Analysis and Visualization, LinkedIn. 2023
- Sexual Harassment Training for University Employees, University of Illinois, Urbana-Champaign. 2023
- Ethics Act Training for University Employees, University of Illinois, Urbana-Champaign. 2023
- Animal Care and Use Risk Assessment, University of Illinois, Urbana-Champaign. 2022
- Basic Training Program for Animal Users, University of Illinois, Urbana-Champaign. 2022
- Formaldehyde Safety, University of Illinois, Urbana-Champaign. 2022
- Laboratory Safety Training, University of Illinois, Urbana-Champaign. 2022
- Occupational Health and Safety (OHS) Training, University of Illinois, Urbana-Champaign. 2022
- Fire Extinguisher Training, University of Illinois, Urbana-Champaign. 2022

## **Scholarships & Awards**

- Panther Impact Award, University of Northern Iowa, \$4,000. 2018-2022
- Robert & JoAnn Jensen Scholarship, GMG Secondary School, \$14,000. 2018-2022
- Academic Achievement Award, University of Northern Iowa. 2020
- Dean's List, University of Northern Iowa. 2019-2022
- Valedictorian, GMG Secondary School. 2018

## **Organization Memberships**

- Illinois Chapter of American Fisheries Society. Mar. 2023-Present

## **Additional Skills**

- Experience driving and trailering outboard console boats up to 25' long on lakes and large rivers
- Experience driving and trailering a shallow running-double mud motor console boat on lakes and large rivers
- Pulsed-DC boat electrofishing on lakes and rivers
- Backpack shocking in small to large riverine habitats
- Use of gill nets, fyke nets, hoop nets, seines, trot lines, and bottom trawls
- Operation and use of GPS units for navigation
- Proficiency in Microsoft Office applications
- Basic Program R
- Basic ArcGIS
- Breaking in of new outboard four-stroke boat motors
- Basic mechanical experience with vehicles and watercraft
- Small power tool operation
- Basic wood-working skills
- Tractor operation
- Capable of lifting and carrying over 50 pounds regularly
- Hold a valid Iowa driver's license
- Ability to work in all weather conditions



## References

Brandon Harris  
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