Hannah Holmquist

Academic History

Southern Illinois University – Carbondale (SIU), Carbondale IL **Graduated: December 2022**
Master of Science in Zoology
GPA: 4.00/4.00
Relevant Courses:

- Freshwater Invertebrates
- Advanced Fisheries Management
- Food Webs and Ecosystems
- Biostatistics
- Advanced Biostatistics
- Data Manipulation and Visualization in R
- Evolution

Iowa State University (ISU), Ames, IA **Graduated: May 2019**
Bachelor of Science in Animal Ecology with an emphasis in Wildlife and Fisheries
Bachelor of Science in Environmental Science
GPA: 3.67/4.00
Relevant Courses:

- Aquatic Ecology
- Vertebrate Biology
- Fish Biology
- Fisheries Techniques
- Ecological Methods
- Conservation Genetics
- Animal Physiology
- Ecology
- Intro to Environmental Issues
- Controversies in Natural Resource Management
- Herpetology
- Plant Systematics
- Wildlife Management
- Biology (with lab)
- Organic Chemistry (with lab)
- Algebra
- Calculus
- Statistic

Muscatine Community College, Muscatine, IA **Summer 2017 and 2018**
Relevant Courses:

- Public Speech and Physics

School for Field Studies Center for Wildlife Management Studies, Karatu, TZ, East Africa **January-May 2018**
Relevant Courses:

- Wildlife management, Environmental Policy, and Swahili

Past Employment and Experience

Heartland Inventory and Monitoring Network, National Park Service, Springfield MO **January 2025-Present**
annual salary rate, at least 40 hours per week
Missouri State University, Biology Department, 901 S National Ave, Springfield, MO 65897 **Supervisor: Thomas Bonnot and Hope Dodd**
Aquatic Ecologist - GS7/9

- Responsible for leading the imperative, critical, and indispensable fish portion of three protocols assessing the fish community structure in rivers, streams, and spring in 11 nation parks
    - Leads crucial fish protocol preparation and training, completion of fish identification, data measurements, and data collection in field and laboratory
        - Ensures accurate fish species identification caught in all study areas (Minnesota, Missouri, Kansas, Iowa, and Nebraska)
        - Achieving 100% protocol compliance
        - Supports habitat health assessments by completing many monitoring trips annually, contributing critical data for resource management and restoration planning
        - Coordinates all logistics for aquatic monitoring trips, including securing park access, arranging travel, and maintaining specialized sampling equipment, ensuring no trip delays due to logistical failure
        - Maintains and prepares field equipment, data materials, and fleet vehicles, resulting in a reduction in unplanned maintenance incidents
        - Authors detailed trip reports, operational reviews, and data summaries to document findings, sampling deviations, and initial site assessments.
        - Acquires critical scientific permits to collect required data for imperative community fish and invertebrate surveys and produces and submits annual aquatic collection reports to state and federal agencies, maintaining active compliance with aquatic research permits

    - Provides supervisor-level input on staffing needs, scheduling, and intern hiring, improving team productivity and optimizing seasonal staffing coverage
    - Carefully follows critical protocols to provide safe, efficient, and high-quality data collection, entry, curation in the field, laboratory and office
    - Ensures critical fish sampling is completed in the sampling window outlines in the protocol
    - Contacts parks, makes travel arrangements, purchases, maintains and prepares fish field equipment and data collection materials and maintenance of vehicles
    - Contributes to fish protocol project reviews and recommends project changes for fish protocols including protocol revisions
    - Imperative habitat surveys are done measuring substrate, embeddedness, vegetation type, water depth
    - Aquatic vegetation surveys are done by identifying plants to species
    - Responsible for driving electrofishing boats, using electrofishing backpacks, seines, and barges
    - Responsible for crucial training of interns, seasonals, and partners on proper field collection and lab processing for aquatics monitoring and ensuring a 100% safety compliance rate during field seasons
    - Completes imperative field and lab identification of assigned fish samples from WICR, GWCA, BUFF, TAPR, PIPE, and OZAR springs and works on certification for fish identifications
    - Maintains Heartland fish reference collection, including adding new specimens and ensuring proper preservation and labeling of all specimens
    - Completes all assigned data entry and data quality assurance for invertebrates, fish, and aquatic vegetation data
    - Writes and submits imperative trip reports for assigned field trips, documenting any variances in data collection during monitoring trips, and assists Program Leader with Operational Review Reports
    - Communicates regularly and effectively with supervisor, staff, interns, seasonals, and partners to encourage team decision making and productivity
- In charge of collecting crucial water quality parameters, importing data into NPStore and Aquarius software and database, and verifying/validating data
    - Sondes for discrete data parameters
    - Temperature loggers for continuous data collection
- Conducts QA/QC for aquatic datasets, improving data accuracy for HTLN's (Heartlands) long-term monitoring records and contributing to streamlined annual reporting cycles.
- Assists invertebrate lead process aquatic invertebrate samples to access stream/river ecosystem health in 11 national parks
    - Removed aquatic invertebrates from organic and inorganic materials in samples
    - Used dichotomous keys to identify aquatic invertebrates to genus
    - Entered data (counts and identification of invertebrates) into excel
- Used R1 and ArcGIS to navigate to study sites
- Attends Wilson's Creek staff meetings as well as Heartland Midwest region staff meetings
- Completes all required and assigned trainings (virtual/online, in-person) by deadlines
- Assists in developing analyses and communicating scientific findings to supervisor, project managers, park staff, partners, academic community, key stakeholders, and the public
    - Presents aquatic monitoring data and findings at professional conferences, stakeholder meetings, and public outreach events, increasing awareness of aquatic ecosystem health
    - Creates interpretive products (e.g., news briefs, maps, summaries) for internal and external audiences, enhancing public and stakeholder understanding of HTLN aquatic projects.
    - Completes assigned data summaries and writing tasks for aquatic monitoring reports or journal articles
    - Creates assigned interpretive products such as news briefs, maps, interpretive summaries
    - Creates annual collection reports to state and federal agencies for aquatic collection permits and maintains state and federal collection permits for fish monitoring.
    - Presents HTLN data and findings at a professional conference or to NPS staff or the public
    - When assigned, participate in meetings with natural resource or other park staff on preliminary findings during monitoring trips or meetings related to other aquatic concerns
    - When assigned, assists with public education/outreach events or field trip events in collaboration with supervisor or project managers
- Provides input to supervisor on staffing and scheduling needs and assists with hiring interns
- Participates in interdisciplinary meetings with park natural resource managers to apply HTLN aquatic data to park-specific conservation challenges, supporting informed, science-based decision-making
- Actively engages in HTLN staff meetings, IMD staff forums, and NRSS regional discussions, strengthening interagency collaboration and strategic alignment

Southern Illinois University - Carbondale, Carbondale IL **February 2023-January 2025**
per month salary rate, at least 37.5 hours per week
1125 Lincoln Drive, Carbondale, IL 62901 **Supervisor: Dr. Jim Garvey and Dr. Greg Whitledge**

Lab Manager - Researcher II

- Managed and trained 20 graduate students, researchers, and technicians
    - Made sure all necessary annual safety training was completed and maintenance was completed on equipment
    - Added all personnel to IACUC's and created/submitted new IACUCs when necessary
    - Orchestrated field work and organized office and lab spaces
    - Ordered new equipment and new boats
    - Made sure everyone was accomplishing all of their research related tasks
        - Hydroacoustics, telemetry, and electrofishing on the Illinois and Wabash rivers
    - Led and participated in hiring committee panel to hire new students and staff
- Managed Center for Fisheries, Aquaculture, and Aquatic Sciences social media accounts
- Managed the 90 pond aquaculture facility including maintenance on pumps
- Organized and led outreach events
- Assisted in aquaculture facility project with juvenile bass cannibalism
    - Organized feeding schedule and hand-fed bass
    - Led subsampling of bass
    - Built a concrete wall to create split ponds
    - Analyzed total phosphorus in water samples using spectrophotometer
    - Measured and weighed bass at beginning and end of project
- Transported fish from a swamp system to the aquaculture facility for outreach purposes using a fish hauler truck
- Assisted in field and lab work
    - Long Term Electrofishing (LTEF) surveys on the Ohio River; identified fish to species (juvenile and adult), measured total length, and took weights
    - Gill netting on the Wabash River
    - Electrofishing and hydroacoustics on the Wabash and Illinois rivers
        - Operated boats up to 25 feet long
    - Took muscle biopsies, fin clips, and inserted acoustic and floy tags in Silver Carp for the telemetry project on Silver Carp in the Wabash and Illinois rivers
    - Identified zooplankton to family from the aquaculture facility ponds that were treated with different amounts of phosphorus
- Led field work in a shallow bottomland hardwood swamp using boat electrofishing and mini fyke nets to assess the fish community spatiotemporally
    - Identified fish to species (juvenile and adult), measured total length, and took weights
        - Used dichotomous keys
    - Published results in peer-reviewed journals
    - Rediscovered the Taillight Shiner (state endangered) in Illinois, thought to be extirpated since it hadn't been seen in over 30 years
        - Documented in occurrences of other rare, threatened, and endangered species (Bantam Sunfish, Brown Bullhead, Banded Pygmy Sunfish, Flier)
- Led field work in the Lower Cache River using a portable boat for electrofishing to assess the fish community spatially comparing floodplain and river macrohabitats. Assessing potential occurrences of rare endangered species in previously unsurveyed areas.
- Led R, excel, and otolith extraction workshops for graduate students
- Developing study design, collecting data, analyzing data, and writing research manuscripts for publication
- Collaborated with multiple agencies (Illinois Department of Natural Resources, Illinois Natural History Survey, U.S. Fish and Wildlife Service)

Southern Illinois University - Carbondale, Carbondale IL **January 2020-December 2022**
per month salary rate, at least 40 hours per week
1125 Lincoln Drive, Carbondale, IL 62901 **Supervisor: Dr. Greg Whitledge**

Research Assistant

- Designed and conducted fish community surveys in Buttonland Swamp, Illinois to evaluate water level dynamics effects on fish community structure, abundance, and year-class strength

    - Used boat electrofishing, fyke nets, and mini fyke nets to collect adult and juvenile fish and used light traps and plankton tows to collect larval fish
    - Conducted larval sampling using light traps and plankton net push tows
    - Completed detailed fish management reports
- Identified fish to species (larval, juvenile, and adult), measured total length, and kept a subset of bluegill, gizzard shad, and silver carp to age
- Collected water quality (dissolved oxygen, conductivity, water/air temperature, secchi depth)
- Aged a subset of bluegill, gizzard shad, and silver carp using otoliths and post-cleithrum
- Catch curves were made from aged fish to look at year class strength. Evaluated correlations of water level and year class strength
- Worked in adverse weather conditions (cold winter, hot summer nearly 100 degrees Fahrenheit)
- Trained and managed technicians
- Collaborated with multiple agencies (Illinois Department of Natural Resources, U.S. Fish and Wildlife Service)
    - Completed quarterly and monthly reports for these agencies
- R was used to analyze data
    - Non-metric multidimensional scaling (NMDS)
    - Analysis of Similarities (ANOSIM)
    - Mantel Test
    - Indicator Species Analysis (ISA)
    - ANOVA
    - Age Length Key

Pacific States Marine Fisheries Commission, Sacramento CA **October 2019-January 2020**
bi-weekly salary rate, at least 40 hours per week
1701 Nimbus Road, Rancho Cordova, California 95670 **Supervisor: Jeanine Phillips**
Field Survey Technician

- Assisted in escapement surveys that estimated the number of adult Chinook salmon (*Oncorhynchus tshawytscha*) that successfully escape the ocean fishery and return to the Lower American River to spawn
- Searched the 13 mile stretch of river every week for submerged salmon carcasses while walking the riverbank, riding in a jet boat, or paddling a kayak
- Carcasses were processed in one of three ways: (1) inclusion in the mark/recapture model, (2) head collection for coded-wire tag (CWT) retrieval, or (3) chopped and tallied (carcasses with an intact adipose fin were either included in the mark/recapture model or chopped and tallied)
    - To be included in the mark recapture model, a carcass must be in a fresh enough condition to be detected during subsequent survey periods; fitted with a hog ring and numbered disk-tag on the left maxilla
- Covariate data collected included sex, fork length, level of egg retention in females, and degree of decomposition; Sex was determined through a combination of characteristics including body morphology, presence or absence of a kype, and examination of gametes.
- Other tasks included cleaning fish off of weir and collecting scale samples from fresh individuals (from the left side of the carcass above the lateral line and posterior to the dorsal fin)

Illinois Natural History Survey, Champaign, IL **June 2019-August 2019**
bi-weekly salary rate, at least 40 hours per week
1816 South Oak Street, Champaign, Illinois 61820 **Supervisor: Lauren Hostert**
Stream Research Technician

- Assisted in two research projects through the Prairie Research Institute at the University of Illinois Champaign-Urbana. The CREP project focused on how land use affects surrounding wildlife in the Kaskaskia River.
- Data collected included habitat assessments, electrofishing using backpack and electric sein in order to determine community composition of fish.
    - Took substrate samples and placed loggers to record water temperature
    - Assessed substrate cover, instream cover, channel morphology, riparian zone, and bank erosion presence.
    - Fish were counted, identified, and weight and length measurements were recorded. Scales/fin rays of the eastern sand darter were taken for aging, fin clips were taken for marking and/or genetic sampling. Observed the insertion of pit tags and CWT (coded wire tag).
    - A barge was used to target smallmouth bass in the Mackinaw River to monitor their population.
    - Recorded turbidity and measured the amount of ammonia, nitrate, and phosphorus

- Water quality was determined by dissolved oxygen, conductivity, salinity, pH, and temperature.

ISU Natural Resource Ecology and Management Department, Ames, IA **October 2018-May 2019**
bi-weekly salary rate, 10 hours per week
Science Hall II, 339, 2310 Pammel Drive, Ames Iowa 50011 **Supervisor: Dr. Pete Moore**
Undergraduate Field and Research Technician

- Assisted geomorphologist Dr. Moore and graduate students with collecting and analyzing data on bank erosion and large woody debris in stream systems
- Tasks included measuring stream bank erosion and associated phosphorus inputs within Iowa's riparian systems to investigate how land use around riparian systems affects stream morphology
- Duties included walking on uneven terrain in order to measure rods placed in eroding stream banks
- ArcGIS was used to estimate how much stream erosion has occurred between years and to locate log jams in the stream systems
- Excel was used to organize discharge information obtained from USGS gages and to create figures
- With better understanding of areas that contribute to stream bed and bank erosion, these data can be used to reduce bank erosion that contributes to increased nutrient loads that affect eutrophication and turbidity downstream

ISU Ecology, Evolution, and Organismal Biology Department, Ames, IA **August-October 2018**
bi-weekly salary rate, 10 hours per week
Bessey Hall, 251, 2200 Osborn Drive, Ames, Iowa 50011 **Supervisor: Dr. Grace Wilkinson**
Undergraduate Field Technician

- Assisted limnologist/stream ecologist in collecting data for the Des Moines River Water Quality Networking (DMRWQN) field and laboratory research, which is funded by the US Army Corps of Engineers
- The DMRWQN is a project involving monitoring surface water quality within the Des Moines and Raccoon Rivers, and Saylorville and Red Rock Reservoirs
- Common carp, catfish, and largemouth bass were collected by boat electrofishing to determine the mercury and phosphorus levels in the fish

Multiple Species Inventory and Monitoring (MSIM), Coralville, IA **May-August 2018**
bi-weekly salary rate, at least 40 hours per week **Supervisor: Paul Frese**
Field Technician

- Conduct wildlife surveys for mammals, amphibians, reptiles, fish, butterflies, odonates, and crayfish within 16 Wildlife Management Areas throughout northeast Iowa
- Collaborators for this program was between ISU and the Iowa DNR
- Data were collected on abundance and species richness of invertebrate and vertebrate species at each study site to compare sites to each other
- Data were also collected using visual encounter surveys, small mammal traps, camera traps, cover boards, fyke and hoop nets, butterfly transects, vegetation surveys, and ground cover surveys
- Additional duties included identifying mammal tracks, calculating canopy cover, and working from evening into the morning to record bat calls using an anabat
- Organized and entered collected data into the MSIM on-line database

School for Field Studies, Karatu, TZ, East Africa **March-May 2018**
bi-weekly salary rate, 40 hours per week
Center for Wildlife Management Studies, P.O. Box 304, Karatu, Tanzania, East Africa **Supervisor: Dr. Christian Kiffner**
Directed Research

- While studying abroad it was required to focus on a specific project and jointly help gather data with the professors out in the field and analyze the information collected
  - The goal was to see how changes in land use and resource availability in the Maasai Steppe of Tanzania could be managed in a way to foster the well-being of local communities while safeguarding and promoting biodiversity conservation
- My topic focused on one of the last hunting and gathering tribes in the world, the Hadzabe, and how they have impacted animal behavior
- Research was collected by setting up camera traps in order to see how wildlife are being affected by the Hadzabe tribe in Tanzania
- Duties included identifying Tanzanian wildlife and analyzing animal numbers seen from the camera traps
- The Random Encounter Model was used to estimate density of wildlife in the area

- The statistical program R was used to do the calculations and Estimate S was used to calculate species richness
- Communication skills were necessary to work as efficiently as possible with my collaborators

ISU Testing Center, Ames, IA **August-May 2015-2017, August-December 2018**
bi-weekly salary rate, 10 hours per week
Union Drive, Ames, Iowa 50011
Testing Proctor

- Vigilantly observed college students online testing to prevent cheating
- Checked students into exam, making sure they had only the necessary items to take the test, and check them out
- Dealt with students having technical issues with exam
- Enforced testing center rules, which required avert attention

MN Dept. of Natural Resources Fisheries, St. Paul, MN **June-July 2016, May-August 2017**
bi-weekly salary rate, 40 hours per week
1200 Warner Road, St. Paul, Minnesota, 55106 **Supervisor: Will French**
Fisheries Intern

- Fish Index of Biological Integrity (IBI) on lakes involving gill net, trap net, seining, electrofishing, and habitat surveys
- Long-term monitoring on lakes involving population assessments, vertical gillnetting, IBI, and electrofishing
- Experience removing otolith, measuring and identifying fish, using hydro-acoustics, sampling phytoplankton and zooplankton, using secchi disk, and taking dissolved oxygen measurements
- Backpack electrofishing in streams for trout
- Hobo loggers were placed in lakes to track water temperature and thermocline temperature change
- Buffalo fish in the Mississippi River were caught by boat electrofishing and observed tracking devices being put into the fishes
- Identifying native fish species and aquatic plants using taxonomic keys
- Experience using GPS units, and trailering, backing, power washing, and operating boats

SLP Community Education Gymnastics, St. Louis Park, MN **August 2015, June-July 2016**
bi-weekly salary rate, 3 hours per week **Supervisor: Gretchen Novak**
Gymnastics Instructor

- Was responsible for supervising and assisting children ages 3-12 with gymnastics skills
- Ensured that safety standards were met
- Planned gymnastics activities and lessons

MN State Referee Committee **May-August 2013-2015**
bi-weekly salary rate, 3 hours per week
Soccer Referee

- Soccer Referee for kids ages 6-18
- Detected infractions of rules and decided penalties according to established regulations

Qualifications and Skills

Aquatic Biological Sampling Techniques:
Fish sampling techniques (electric seine, electric tote barge, backpack electrofishing, boat electrofishing, seine netting with kicksets and downstream hauls, gill netting, vertical gill netting, modified fyke netting, hoop netting, light traps, larval plankton tow, hydroacoustic surveys, species identification, fin clips, muscle biopsies, inserting floy tag and pit tag and acoustic tag, measuring, weighing, fitted hog ring and numbered disk-tag for mark/recapture, observed the insertion of pit tags and coded wire tags), attended Smith-Root electrofishing principles & safety course, fish otolith/post-cleithrum extraction, macroinvertebrate sampling techniques (species identification, d-frame, Hess Sampler, substrate samples using a petite ponar), riverine zooplankton sampling with pump, chlorophyll a extraction

Aquatic Chemical/ Physical Sampling Techniques:
Stream discharge, stream habitat surveys, riparian mapping, geomorphology survey, water chemistry (nitrate, phosphate, ammonia, and turbidity), water quality (dissolved oxygen, conductivity, salinity, pH, and water/air temperature using a Sonde), habitat assessments, temperature loggers, secchi disk, qualitative habitat evaluation index (assess substrate cover, instream cover, channel morphology, riparian zone, and bank erosion)

Terrestrial Sampling:

Camera traps, small mammal traps, mammal tracking, cover boards, butterfly transects, visual encounter surveys, anabat, vegetation surveys (estimating ground and plant identification), monarch sampling (capturing, tagging, and releasing of butterfly)

Computing and Navigating:

R, R Studio, Microsoft Office Products (Outlook, Excel, Word, & PowerPoint), entering data into Excel, HoboConnect, Access database, NPstoret database, Aquarius software, ArcGIS, R1, Garmin inreach

Maintenance:

Replacing propellers and spark plugs and water pump impellers, oil change on generator and four-stroke boat motor, patching fyke nets, calibrating YSIs

Management Skills:

Training and managing field assistants, clearly conveying information/expectations/feedback, making timely and effective decisions, delegating work (assigning tasks and responsibilities appropriately and balancing workload and ensuring accountability), prioritized tasks and projects, efficiently allocated time and resources, met deadlines and managed schedules, fostered collaboration and teamwork, anticipated challenges, provided guidance and constructive feedback, filling out timesheets, writing reports to numerous agencies

Languages:

Native Language - English, Basic – Spanish

Licenses and Certifications

- Ethics training
- Information Management and Technology (IMT) training
- IL Boat Ed Course
- Watercraft Operator's Permit MN
- Driver's License
- CPR, AED, and Stop the Bleed (expires Spring 2025)
- IACUC training (Working with the IACUC, Reducing Pain and Distress in Laboratory Mice and Rats, SIUC Animal Care, Wildlife Research, Working with Fish in Research Settings, Aseptic Surgery)

Awards and Scholarships

Illinois Department of Natural Resources Todd Fink Memorial Award **2021**
Iowa State University Dean's List **Fall 2015-2019**
Academic Recognition Award Scholarship, Ames, IA **August 2015-May 2019**

Publications

Holmquist H.M., Whitledge G.W. 2024. Fish assemblage structure-habitat relationships in a riverine cypress swamp. *Environ Biol Fish* 108:259-277. https://doi.org/10.1007/s10641-024-01663-7

Holmquist H.M., Macedo A.D., Metzke B.A., Whitledge G.W. 2024. Habitat associations and demographics of a newly recorded population of taillight shiner in Illinois. *Environ Biol Fish* 107(1):5-18. https://doi.org/10.1007/s10641-023-01485-z

Macedo A.D, Holmquist H.M. 2022. Necturus Maculosus (Common Mudpuppy). Nest Descriptions *Herpetological Review. 53(2):279-280.*

Wood B.M., Millar R.S., Wright N., Baumgartner J., Holmquist H., Kiffner C. 2021. Hunter-Gatherers in context: Mammal community composition in a northern Tanzania landscape used by Hadza foragers and Datoga pastoralists. PLoS ONE 16(5): e0251076. https://doi.org/10.1371/journal.pone.0251076

Presentations

Use of Assemblage Structure, Abundance, and Year-Class Strength to Assess Fish Assemblage Responses to Water Level Fluctuations. Holmquist, H.M. 2022. Use of Assemblage Structure, Abundance, and Year-Class Strength to Assess Fish Assemblage Responses to Water Level Fluctuations. Thesis, Southern Illinois University - Carbondale, IL, October 2022

Evaluating Relationships Between Buttonland Swamp Hydrology and Fish Recruitment
Holmquist, H.M., J. Garvey, and G. Whitledge. 2022. Evaluating Relationships Between Buttonland Swamp Hydrology and Fish Recruitment. Illinois American Fisheries Society Annual Meeting - Champaign, IL, March 2022

Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois
Holmquist, H.M., A. Macedo, J. Garvey, and G. Whitledge. 2022. Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois. Illinois American Fisheries Society Annual Meeting - Champaign, IL, March 2022

Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois
Holmquist, H.M. and G. Whitledge. 2021. Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois. National American Fisheries Society Annual Meeting - Baltimore, MD, November 2021

Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois
Holmquist, H.M. and G. Whitledge. 2021. Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois. Research & Creative Activities Virtual Forum, Southern Illinois University - Carbondale, IL, April 2021

Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois
Holmquist, H.M. and G. Whitledge. 2021. Fish Community Responses to Water Level Fluctuations in Buttonland Swamp, Illinois. Virtual Illinois American Fisheries Society Annual Meeting, March 2021

Monitoring Species Richness and Relative Density of Mammals in Kideru Ridge Using Camera Traps
Holmquist, H.M. and J. Baumgartner. 2018. Monitoring Species Richness and Relative Density of Mammals in Kideru Ridge Using Camera Traps. Rhotia Community, Rhotia, TZ, East Africa, May 2018

Associations and Organizations

Graduate Research Assistance Supporting Science (GRASS) **January 2023 - December 2024**
Member
- Attended meetings and participated in outreach events for kids (kindergarten -12 grade) to learn more about fish (anatomy, diet, identification) and what you can do with a fisheries degree

Zoology Graduate Student Association, Carbondale, IL **January 2020-December 2022**
Member/Student Liaison
- Attended meetings and events graduate school

Student chapter of the American Fisheries Society, Carbondale, IL **January 2020-December 2022**
Member
- Attended meetings and events related to fisheries and youth education

Student chapter of the American Fisheries Society, Ames, IA **August 2017-May 2019**
Member
- Attended weekly meetings
- Learned what professions in fisheries do and what responsibilities they have

Society for the Advancement of Gender Equity, Ames, IA **August 2017-May 2019**
Member
- Discussed toxic stereotypes, racial inequality, and difficulties minorities face
- Participated in weekly meeting to discuss the future and problems with the college and what we can do to implement change
- Participated in the Women's March and worked with Planned Parenthood to promote safe sex education

Alpha Phi Omega, Ames, IA **August 2017-February 2018**
Member
- Attended weekly meetings to discuss how we could get involved with the community
- Participated in numerous volunteering events

Outreach, Volunteer Work, and Workshops

Kids Corner School Outreach **March 2023, 2024**
Taught kindergartners - sixth graders about native Illinois fish, macroinvertebrates, aquaculture, and different fishing gear types.

Excel Workshop **April 2024**
Taught graduate students how to organize their data in excel, clean their data, and look for errors in data.

FFA Career Day **October 2023**
Taught high schoolers about different jobs you can have in fisheries, various fishing gears, fish and invertebrate dichotomous keys.

SIU Day at the DuQuoin State Fair **September 2023**

Taught children and adults about aquatic food webs and fish and invertebrate identification.

Randolph County Conservation Day **May 2023**

Taught 5th graders about aquatic food webs and aquatic invertebrate identification.

Science Fair **April 2023**

Helped set up tables and chairs for the science fair.

Stewardship Week **April 2023**

Educated kindergarteners on the fish diversity and their diets and what invertebrates are.

Cottonmouth Surveys **August 2022 - December 2023**

Assisted graduate student on his dissertation field work to evaluate fungal disease and microbiome of cottonmouth pre- and post-hibernation. Captured cottonmouth by tongs, tubbed them, and measured length. Each snake was swabbed (skin and cloaca), pit tagged, and a blood sample was taken. Snake body temperature was recorded as well as substrate the snake was on before capture.

Illinois DNR Muskellunge Survey **March 2021, 2021**

Set and picked up fyke nets. Muskellunge were caught, measured, and tagged with a floy tag. Surveys are used to determine Muskellunge abundance and how successful stocking is.

Saluki Water Workshop **March 2022 and 2023, April 2024**

Educated high school students on the diversity of aquatic macroinvertebrates, different ways to sample fish, and how to identify organisms using dichotomous keys.

Math Field Days **March 2023**

Educated high school students on the diversity of fish, different ways to sample fish, and how to identify fish using dichotomous keys.

LGBTQIA+ Safe Spaces Workshop **August 2022**

Learned how to create safe work environments for LBGTQIA+ by using correct pronouns/terms, learning about our own privileges, and sticking up for LBGTQIA+ when they do feel uncomfortable.

Brehm High School Outreach Event **May 2022**

Educated high school students on different ways to sample fish and how to identify them using dichotomous keys.

High School Outreach Event **March 2022**

Taught high school students how to age fish otoliths by counting the annuli rings.

Skype a Scientist **February 2022**

Presented my master's research to high schoolers.

High School Outreach Event **October 2021**

Taught high school students how to age fish otoliths by counting the annuli rings.

Monarch Tagging **September 2018**

Monarch tagging was done at a nature center to determine monarch movement.