**Paige L. Wigren (Evans)**

United States Citizen

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**EDUCATION**

2007-2012. Bachelor of Science (Environmental Conservation – Minor in Outdoor Recreation Leadership and Management); Northern Michigan University

**RELEVANT COURSEWORK**

Scientific Writing for Publication, Data Wrangling Using R, Field Data Management Using Microsoft Access, Human Impact on the Environment, Natural Resource Policy, Ichthyology, Fish Ecology, Environmental Regulation and Impact Assessments, Macroinvertebrate Ecology and Identification, Wetlands and Riparian Ecology, Functional Framework for Stream Assessment and Restoration, Ecology of the Northern Forest, ArcGIS, Quantitative Methods (multivariate statistics), Basic Statics, Soils, Field Sampling Techniques and Design, Field Sampling of Fish and Wildlife, Principles of Fish and Wildlife Conservation, Fisheries and Wildlife Seminar, Professional Development Seminar (public speaking and technical writing), Soils, Protected Area Management, Education in Outdoor Settings, and Outdoor Recreation Resources.

**SKILLS**

*Boating:*

* >20 years boating experience
* Trailering, launching, operating and maintaining boats of all sizes (prop and jet drive; 10’ – 28’)
* Daytime and nighttime operation on lake, large and small river systems using GPS for precise navigation
* Running and managing sampling crews on various sized waterbodies (inland lakes, large commercial navigation rivers, and the Great Lakes) in diverse weather conditions

*Sampling methods and data collection:*

* Hydrolab multi-parameter meters, Eureka (Manta 1 and 2) multi-parameter meter, Sea-Cat bathythermograph (conductivity, temperature, depth, and chlorophyll), Acoustic Doppler Current Profiler, Marsh-McBirney flow meters, TSK (Rigosha) flow meters, General Oceanics mechanical flow meters, Trimble GPS, Garmin GPS (fixed and handheld), Humminbird GPS, Secchi disks, HOBO temp loggers, and Kestrel wind meters
* Sediment coring, soil profiling, soil dating and contaminant processing
* Water collection (Van Dorn Water Samplers, steel bullet sterile collection for multiple chemicals and endocrine disrupters near water treatment plant outputs, nitrogen, phosphorus and chlorophyll-A filtration)
* Perform field surveys and analyses of aquatic species in lakes and rivers; keep detailed records of observations and data collected; summarize information resulting from examinations
* Identification of: Great Lakes fish species, aquatic invertebrates (to species), fish eggs (lake sturgeon, lake whitefish, walleye, small and large sucker species, and white bass)
* Biological data collection: fish handling and care, measuring length and weight, reproductive status, PIT and elastomer tagging, collection of fin rays, collection of gametes, scales and otoliths for aging and genetics, sediment sampling, macroinvertebrate collection, and water contaminate sampling and collection
* Operate and maintain aquatic macroinvertebrate sampling and collection gear
* Operate and maintain backpack and boat electrofishing equipment in small and large rivers, and Great Lakes
* Acoustic telemetry procedures (setting and retrieving), maintenance, active and passive tracking, and data acquisition and analysis, and surgical incisions and sutures for tag implantation
* Large- and small-mesh gill nets, paired bongo nets (fixed, stratified and surface tows), egg mats, zooplankton nets, D-frame larval drift nets (fixed and stratified tows), conical nets, seine nets, fyke nets, trawling, setlines, Hester Dendy traps, HHS amphipod traps, two-pole kick nets, Surber nets and D-nets, light traps, minnow traps, sediment coring, and Ponar dredges

*Laboratory Methods:*

* Process water and sediment samples for a variety of contaminates
* Sorting and identifying aquatic macroinvertebrates to family and in some cases down to species
* Identify adult fish in a field and laboratory setting
* Identify larval fish using a stereo microscope mounted with ImagePro software for biological measurements
* Process and identify zooplankton to species
* Experience removing fish stomachs and identifying and quantifying contents
* Preparation and reading of scales, otoliths, and fin rays for proper age identification
* Identification of sea lamprey wounds and proper coding on lake sturgeon using Ontario Ministry of Natural Resources classification code

*Computer:*

* Proficient with Microsoft Office Suite (Word, Excel, Access, Power Point and Outlook); ArcGIS, Manta, Seabird and Sea-Cat software
* Proficient developing automated databases to enter and organize detailed records of field observations and fisheries and aquatic field data
* Comfortable with the ability to perform preliminary analysis of collected field data by using standard statistical methods for the preparation of fisheries reports
* Peer-reviewed literature searches and peer-editing process for manuscripts and journal articles
* Annual domestic and foreign permit reporting
* Annual domestic and foreign permit renewals and proposals
* Technical report writing

*Scientific Communication:*

* Strong verbal and written technical communication skills with strong attention to detail
* Proficient in communicating scientific data and topics to match an audience of varying professional and personal backgrounds
* Experienced in adverse situations with public opinions and concerns about local fisheries and water usage
* Experienced providing information on fisheries and aquatic resources to professionals, cooperators and the public through meetings, conferences, outreach events, education and daily tasks

*Environmental Education and Outreach Skills*

* Grant writing and grant fulfillment
* Experienced environmental education curriculum development skills and implementation for various age groups in multiple settings; primarily with underserved, minority groups in inner city urban settings
* Established and maintained community partner relationships on a federal, state, local and non-profit level
* Sat on interview and hiring panel for FWS GS-05 Park Rangers; assisted in developing and monitoring job duties of FWS GS-05 Park Rangers in relation to grant requirements
* Recruit and manage volunteers to teach and assist in delivering a various range of environmental and outdoor education programming
* Exceptional organization and planning skills
* Currently working on achieving training to become a Certified Interpretive Guide through the National Association for Interpretation

**CERTIFICATIONS AND PROFESSIONAL TRAINING**

* American Canoe Association Community Paddler Certification (August 17, 2022 - MSU Sailing Center and ACA, *in-person,* East Lansing, MI)
* Certification to lead small group paddle sport adventures in inland lakes and rivers
* American Canoe Association Kayak Level 1 Certification (August 16, 2022 – ACA, *in-person,* Crego Park, East Lansing, MI)
* Certification to lead small group kayaking adventures in inland lakes and rivers (safety, rescue techniques and proper skills needed)
* DNR Academy of Natural Resources: Nature Quest (July 10 - 15, 2022 - Michigan Department of Natural Resources and MAEOE, *in-person,* DNR Conference Center, Roscommon, MI)
* Formal and non-formal environmental educator conference focusing on Michigan natural resource education and how to effectively teach
* Project WET Educator Workshop (May 11, 2022 - Grand Valley State University, *Virtual* – Annis Water Resources Institute)
* Educator workshop focusing on water education for formal and non-formal educators
* Project WILD Facilitator Workshop (March 22-23, 2022 - Michigan Department of Natural Resources, *In-person* - MDNR Conference Center, Roscommon, MI)
* Certification to teach Project WILD curriculum to future formal and non-formal educators
* Project FISH Educator Workshop (March 8-9, 2022 – Michigan State University, *In-person*, Natural Resources Building w/Mark Stephens)
* Educator workshop focusing on how to teach fishing skills to all ages of people
* Project Learning Tree Facilitator Workshop (March 22-23, 2022 - Michigan Department of Natural Resources, *In-person* - DNR Conference Center, Roscommon, MI)
* Certification to teach Project Learning Tree curriculum to future formal and non-formal educators
* Flying Wild Educator Workshop (February 3, 2022 - Michigan Department of Natural Resources, *Virtual*)
* Educator workshop focusing on ornithology curriculum for K-12th grade students
* Growing Up Wild Educator Workshop (January 12, 2022 - Nebraska Parks and Game, *Virtual*)
* Educator workshop focusing on outdoor exploration and nature based learning for children ages 3-7 years old; skills needed to implement curriculum
* Aquatic Wild Educator Workshop (January 8, 2022 - Michigan Department of Natural Resources, *Virtual*)
* Educator workshop focusing on environmental education for K-12th grade students; skills needed to implement curriculum
* Scientific Writing for Publication (April 12-16, 2021 - National Conservation Training Center, *Virtual*)
* Proper writing techniques and formats for various scientific reports, journals and articles
* Level One Leadership: Design Your Leadership Journey (February 22-26, 2021 - National Conservation Training Center, *Virtual*)
* Leadership skills course and leadership communication styles
* Volunteer Recruitment and Management (February 15-19, 2021 - National Conservation Training Center, *Virtual*)
* Volunteer recruitment techniques, planning and management skills
* Functional Framework for Stream Assessment and Restoration (October 15 – 18, 2019 – National Conservation Training Center)
* Stream health data collection techniques with restoration framework necessary for developing a remediation plan
* Macroinvertebrate Ecology and Identification (April 8-12, 2019 – National Conservation Training Center)
* Proper collection, identification and life history strategies of macroinvertebrates in relation to stream health
* Data Wrangling Using R (October 29- November 2, 2018 – National Conservation Training Center)
* Overview of basic statistical skills needed to analyze fisheries data using R
* Field Data Management Using Microsoft Access (December 3 – 8, 2017 – National Conservation Training Center)
* Overview of how to create and manage an Access database to fit specific project needs; also basic skills of how to clean and check “messy data” in Excel for easy entry in Access
* Great Lakes Crayfish Identification Course (February 22, 2018 – Michigan State University)
* Overview of skills needed to correctly identify the eight native species of crayfish and two known invasive species of crayfish found in the Great Lakes basin
* Aquatic Insect Identification Course (April 22, 2017 – Clinton River Watershed Council)
* Overview of basic aquatic insect taxonomy including key identification skills necessary for proper field and lab identification
* Fish Ecology (February 13-17, 2017 – National Conservation Training Center)
* Overview of fish ecology topics including: bioenergetics, trophic cascades, reproductive strategies, fish anatomy, and effects of climate change.
* USGS Larval Fish Identification Workshop (October 13, 2016 – USGS Great Lakes Science Center)
* Overview of skills needed to correctly identify native and non-native larval fish found within the Great Lakes
* Identification of Nongame Fishes Workshop (July 13-14, 2016 – Lake Superior State University)
* Two day course teaching lab and field identification skills of nongame fishes native to the Great Lakes focusing heavily on cyprinids and catostomids
* American Red Cross: Adult CPR/First Aid/AED (June 2022 – June 2024)
* American Red Cross: Shallow Water Lifeguard course (June 2022 – June 2024)
* DOI Motorboat Operator Certification Course (MOCC) (USGS Great Lakes Science Center, Ann Arbor, MI; May 2019 – May 2024)
* DOI Boat Electrofishing Operator course (February 2018)
* USFWS Electrofishing Safety course (July 2021)
* USGS Backpack Electroshocking Certification (August 2015)
* USGS and USFWS National Safety Council Defensive Driving course (May 2016)
* PADI Open Water SCUBA (March 2001)
* USGS Lab Safety, Personal Protection Equipment, and Safety through Awareness course (March 2018)
* Valid Michigan Driver’s License (clean driving record) and Passport

**PROFESSIONAL ENVIRONMENTAL AND OUTDOOR EDUCATION EXPERIENCE; FISHERIES AND AQUATIC RESOURCE TECHNICIAN EXPERIENCE**

**Girl Scouts of Southeastern Michigan Council, White Lake, Port Huron, and Detroit Service Stations**

**Lead Environmental and Outdoor Education Program Specialist** (December 2021 - present; full-time/salaried)

Duties:

* Environmental and Outdoor Education duties
  + Develop curriculum and milestones for new patch programs that highlights environmental and outdoor education skills and learning opportunities in hopes of fostering lifelong interest in environmental education and the outdoors
  + Network and develop new community partnerships within southeastern Michigan (nonprofit, state and federal partnerships)
  + Maintain existing community partnerships (nonprofit, state and federal partnerships)
  + Review current patch programs to add in environmental education curriculum elements
  + Lead and teach environmental and outdoor education workshops and curriculum to urban, underrepresented and underserved minority groups through place based learning and multi-step patch work programming
  + Design and implement a Phenology patch program
  + Design and implement a Naturalist patch program
  + Design and implement a “Day in the Life of a Fisheries Biologist” patch program
  + Plan and implement “pop-up” programming covering materials from various environmental education programs (Flying WILD, Aquatic WILD, Growing up WILD, Project Learning Tree and Project WILD)
* Networking and Partnership duties; Community Outreach Responsibilities
  + Establish and foster community partnerships to deliver programming to Girl Scout members and guardians
  + Manage and maintain federal partnership with the U.S. Fish & Wildlife Service Detroit River International Wildlife Refuge
    - Develop curriculum for two grant funded programs (DRYFT: Detroit River Youth Fishing Troop & A Refuge for Urban Youth to Explore Great Lakes Ecosystems)
  + Manage, maintain and develop current and new state, county and non-profit partnerships to share education resources and serve minority groups throughout southeast Michigan
* Administrative duties
  + Partner on Trout Unlimited and U.S. Environmental Protection Agency Community Engagement Grant (USFWS, Trout Unlimited and Girl Scouts of Southeastern Michigan Council)
    - $5,000 FY21/22 - purchase, implement and teach four STREAM Girls camps with Girl Scout Members in the Southeastern Michigan Council; secure and manage local female fly fishing advocates to volunteer at each camp and deliver a three day overnight, multi-scope curriculum to 100 Girl Scouts consisting of stream ecology, macroinvertebrate identification and fly fishing
    - Camps will continue twice a year after fulfilling grant requirements
  + Author and manage environmental education and professional development grant with U.S. Fish & Wildlife Service Detroit River International Wildlife Refuge (Girl Scouts of Southeastern Michigan – Environmental Education Program)
    - $10,000 FY22 - includes developing new environmental education curriculum and partnerships to underserved urban minority groups through place-based learning and professional development and networking for myself
  + Author and manage Great Lakes Restoration Initiative environmental education grant with U.S. Fish & Wildlife Service Detroit River International Wildlife Refuge and Detroit Area Public Schools (USFWS - carryover work to Girl Scouts of Southeastern Michigan)
    - $254,000 FY22/23 – “A Refuge for Urban Youth to Explore Great Lakes Ecosystems” - includes hiring and supervising one GS05 Park Ranger; aims to reach 60 teachers through “Teach the Teacher” workshops and educate 6,500 students within the Detroit Area Public School system
  + Author and manage Great Lakes Restoration Initiative outdoor recreation and education grant with U.S. Fish & Wildlife Service Detroit River International Wildlife Refuge and multiple groups throughout the state of Michigan (USFWS - carryover work to Girl Scouts of Southeastern Michigan)
    - $173,000 FY23 - “DRYFT: Detroit Youth Fishing Troop” - includes hiring and supervising two GS-05 Park Rangers and spans 2.25 years of programming and equipment costs
  + Managing and recording expense reports
  + Creating and submitting creative requests to the Girl Scouts of Southeastern Michigan advertising team for environmental education events
  + Managing program budgets (attendance, program costs and supplies)
  + Communicate efficiently with Outdoor Education program lead to reduce program overlap and scheduling conflicts
  + Ensure that diversity and inclusion is at the forefront of every event planned
  + Evaluate the effectiveness of events by soliciting participant feedback, summarizing and analyzing results, and formulating recommendations to capitalize on successes and target areas of improvement
  + Timely and concise response to all email and phone communication from Girl Scout members (girls, troop leaders and parents)
  + For an exact list of my programming (original and partner created/led), please ask via email or check out [www.gssem.org/go](http://www.gssem.org/go)
* Administrative duties
  + Departmental budget management (monthly, quarterly and yearly reporting)
  + Purchasing needs for the Outdoor and Environmental Education Department
  + Departmental marketing and maintenance (social media, event registration, and event planning)
  + Complete suite for event planning (coordination, organization and execution)
  + Communicate departmental updates and milestones with CEO/COO
  + Develop and communicate departmental goals and future direction with the CEO/COO
  + Grant applications and fulfilling grant requirements
  + Write and deliver monthly program updates for GSSEM staff (outside of the OE/EE department)
  + Departmental reporting (communities served, number of members served, and number/type of event planned each fiscal year)
  + Recruit, train, schedule and manage volunteers to deliver programming throughout southeastern Michigan

**U.S Fish and Wildlife Service, Alpena Fish and Wildlife Conservation Office, Detroit River Substation, Gibraltar, MI**

**Biological Science Technician** (GS07-02; Fisheries; [Native Species Program]; September 2016 – December 2021; $25.72/hr [full time])

Supervisor: James Boase, phone: (248) 894-7594, email: james\_boase@fws.gov

Duties:

* Field work
  + Experienced leading field crews for various surveys
  + Field crew member for the Native Species program with experience driving and trailering boats up to 28’ in length on lakes and large river systems
  + Led gill net surveys to assess general fish community and trends of abundance in response to the construction of artificial spawning reefs in the St. Clair-Detroit River system
  + Led an electrofishing mark recapture study on the Cass River, Frankenmuth, MI examining fish passage of a rock ramp structure; implanted captured fish with FLOY tags
  + Led and assisted surveys assessing population trends in adult lake sturgeon abundance in Lake Huron, upper St. Clair River, and Detroit River through the use of setlines
  + Led crews in conducting a biological assessment response of the state endangered northern madtom in response to artificial spawning reefs
  + Assisted in gamete collection through use of hormone injections for a lake sturgeon re-introduction study in the Maumee River, Ohio
    - Collected biological data and PIT tagged over 3,000 fingerling lake sturgeon prior to release
  + Led and assisted in mobile telemetry tracking of juvenile lake sturgeon in the Maumee River, OH and the mouth of the Detroit River, MI
  + Assisted Wayne State University biologists with water and sediment sample collection for PFAS testing in the Detroit River
  + Identifying fish in the field by species, age, sex, and reproductive status
  + Collecting various biological and biometric information
  + Sediment sampling for aquatic macroinvertebrates and sediment classification in the field
  + Deploying and retrieving various gear types including gill nets, set lines, and minnow traps
  + Collecting tissue samples for population genetics of mudpuppies, lake sturgeon, northern madtom, walleye and burbot
  + Collecting data from commercially captured lake sturgeon
* Laboratory Work
  + Cutting, sanding, mounting and reading of pectoral fin rays for proper aging of juvenile lake sturgeon
  + Removing and assessing gonads, otoliths and stomach contents of various fish species
  + Processing of ultrasound images to determine maturation status of adult lake sturgeon
  + Processing of substrate video footage using a modified Wentworth Classification Scale to determine habitat suitability for northern madtom in the St. Clair-Detroit River system
* Data and Writing
  + Responsible for maintaining and updating permits needed to conduct surveys; effectively communicate permit needs with various state, federal and provincial agencies
  + Proficient using Microsoft Access and Microsoft Excel for data management and interagency and partner data requests
  + QAQC all data collected in the field and entered in Microsoft Excel/Access
  + Lead author on annual Cass River Report (2016, 2017, 2018) which is a standalone section of annual Native Species Report; frequent contributor to U.S. Fish and Wildlife Service Fish Lines Magazine
    - Co-author on the Native Species Report for the Detroit River Substation
  + Wigren, P.L., J.A. Chiotti, J.M. Leonardi, and J.C. Boase. (*in preparation – Restoration Ecology*). *Fisheries Evaluation of the Frankenmuth Rock Ramp in Frankenmuth, MI.*
* Public Outreach, Education and Administrative Duties
  + Organize and maintain several outreach events for native species substation staff
    - Career days at middle schools and high schools in the Detroit Metro area
    - Detroit River Kids Free Fishing Festival
    - World Wetlands Day
    - Lake Sturgeon release and celebrations in the Maumee River, Detroit River and St. Clair River
    - Responsible for bringing the Trout Unlimited STREAM Girls program to the Detroit River International Wildlife Refuge which focuses on getting young girls involved in stream health, aquatic macroinvertebrate ecology and fly fishing
      * Securing a $5,000 grant with Trout Unlimited and EPA to fund the STREAM Girls Program (FY2021-2022)
    - Awarded $152,000 for Great Lakes Education and Outreach grant through GLRI Focus Area 5 funding (FY2022-2023)
      * Focusing on developing a “A Refuge for Urban Youth to Explore Great Lakes Ecosystems” program within Detroit Area Public Schools (aiming to reach 60 teachers and 6,500 students over life of grant)
      * Includes hiring and overseeing one GS-05 Park Ranger
    - Not yet awarded: “DRYFT: Detroit River Youth Fishing Team” a USFWS spin off of Trout Unlimited STREAM Girls program
      * Proposed funding: $301,275.00 – includes hiring and overseeing two GS-05 Park Rangers and spans 2.25 years of programming and equipment (very well received at regional level)
  + Organize “on-board” materials and gear for new employees and answer any questions they might have
  + Collaborate and organize daily field objectives and tasks with team members while efficiently meeting the goals of each specific survey
  + Consistently consulted by peers from the Native Species program as well as members from the Aquatic Invasive Species program and Grass Carp program for advice and recommendations on field procedures and equipment
  + Purchase authority for Native Species team and general office needs
  + Streamlined field and office scheduling and maintenance through implementation of google docs system for office
    - Boat and equipment use and maintenance log
    - Disinfection logs for all boats and equipment
    - Volunteer organization, scheduling and log for Native Species lake sturgeon work (students, professional and curious public)
  + Responsible for organizing and renewing federal passports, international travel documentation, and blanket travel authorizations for 12 staff members

**U.S Fish and Wildlife Service, Alpena Fish and Wildlife Conservation Office, Detroit River Substation, Gibraltar, MI**

**Biological Science Technician** (DLH Solutions Contractor - equivalent to GS-04; Fisheries; [Aquatic Invasive Species Program]; April 2016 – September 2016; $15.08/hr [full time])

Supervisor: James Boase, phone: (248) 894-7594, email: james\_boase@fws.gov

Duties:

* Field Work
* Field crew member for the Aquatic Invasive Species (AIS) surveillance and monitoring program to detect new colonization for aquatic nuisance species; assist in the planning of operations for monitoring aquatic nuisance species control
* Led and conducted biological surveys and field surveys of waters for the Early Detection of AIS using environmental genetic markers (i.e., eDNA), ichthyoplankton and macroinvertebrate surveys, and traditional passive and active sampling techniques
* Collected, recorded and managed biological, physical, and environmental data
* Operated and maintained specialized sampling equipment including:
  + Fyke nets, gill nets, minnow traps, light traps, HHS amphipod traps, Hester- Dendy traps, paired bongo net surface tows, bottom trawls and boat electrofishing
* Laboratory Work
  + Processed ichthyoplankton samples collected with bongo nets and light traps
  + Processed Hester-Dendy trap sample collection
  + Processed HHS amphipod trap sample collection
* Data and Writing
* Responsible for data entry and QAQC in Excel
* Actively participated in USFWS outreach and education events
* Provided professional recommendations for improvement of surveys, sampling methods and sample processing
* Attended meetings and participated in AIS team conference calls related to AIS monitoring and management in the Great Lakes; work with cooperators to monitor the impact of AIS on native species

**U.S Geological Survey, Great Lakes Science Center, Ann Arbor, MI**

**Aquatic Research Technician** (Purdue University Contractor - equivalent to GS-07; Fisheries; [Native Species Rehabilitation; St. Clair-Detroit River System]; April 2015 – March 2016; $16.89/hr [full time])

Supervisor: Dr. Edward Roseman, phone: (734) 214-7237, email: eroseman@usgs.gov

Duties:

* Field Work
* Small vessel crew member performing weekly sampling in the Great Lakes and large rivers to assess spawning success and larval fish abundance of important native fish species including lake sturgeon, lake whitefish, and catostomids
* Operated and maintained traditional fisheries sampling gear including: bongo nets (fixed, stratified and surface tows), egg mats, zooplankton nets, and seine nets
* Conducted night time sampling for larval lake sturgeon drift in the St. Clair and Detroit River using D-frame nets fixed on the river bottom and stratified conical nets; managed data collection and organization in the field
* Safely operated and maintained a backpack electrofisher to analyze nearshore populations of native and invasive species in the shoreline restoration areas of the St. Clair River; collected all species using a dip net; identified and measured all species captured
* Trailered and operated small vessels (28 feet and under); navigated in various conditions during day and night using GPS for precise sampling
* Laboratory Work
* Sorted, identified and measured zooplankton to species in the lab using a stereo microscope
* Identified larval fish species with a stereo microscope mounted with ImagePro software for biological measurements
* Measured and preserved larval lake sturgeon in preparation for genetics work and data use for conference presentations and publications
* Data and Writing
* Responsible for QAQC and database entry for zooplankton samples
* Attended and participated in project meetings; efficiently communicated project goals with partners and the public
* Presented scientific poster at the 2016 Midwest Fish and Wildlife Conference summarizing the larval fish work that was completed over six years
* Collaborated with a University of Toledo graduate student and Ohio DNR to collect multiple species of fish eggs native to the St. Clair - Detroit River system to design and implement a series of egg mat retention experiments in a mock river set up using a flume and aquarium pumps to imitate the conditions and natural habitat of the river system

**U.S Geological Survey, Great Lakes Science Center, Ann Arbor, MI**

**Aquatic Research Technician** (Michigan State University Contractor/Student Contractor- equivalent to GS-07; Fisheries; [Great Lakes Restoration Initiative Template #73; Avian Botulism in Distressed Great Lakes Environments]; May 2013 – March 2015; $15.51/hr [full time])

Supervisor: Dr. Stephen Riley (retired) email: riley5860@outlook.com

Duties:

* Field Work
* Small vessel crew member on a multi-agency project investigating environmental conditions contributing to the growth of *C. botulinum* and the presence of botulinum neurotoxin in northern Lake Michigan
* Utilized a range of collection techniques including sondes, bathythermographs, Acoustic Doppler Current Profilers, Ponar dredges, sediment coring, gillnets, trap setlines, Van Dorn water samplers, and Hester-Dendy invertebrate traps
* Observed fish species and waterfowl for neurological indications of *C. botulinum* poisoning
* Proficient driving 28’ vessel to set and retrieve gill nets and setlines in large lakes and various weather conditions
* Comfortable using precise navigation to collect environmental data, water samples and sediment cores
* Comfortable using hand held Trimble unit and Garmin GPS to map out sampling areas within the Great Lakes
* Laboratory Work
* Experienced using ArcGIS to develop sample sites and create a sampling plan; map out tracks for gill nets and setlines; to predict possible drift patterns for waterfowl and fish carcasses affected by *C. botulinum* in an effort to pinpoint where the toxin could be reproducing at an increased rate
* Collected specimens for laboratory verification of *C. botulinum* toxicity collected during field observations
* Performed diet analysis of 700+ round gobies; sorted and identified invertebrates from benthic samples; entered and organized data in preparation for analysis
* Data and Writing
* Entered field data and reviewed data for QA/QC, prepared data for use in publication
* Consistently presented information to the curious public about the effects of Avian Botulism

**U.S Geological Survey, Great Lakes Science Center, Ann Arbor, MI**

**Aquatic Research Technician** (U.S. Government, Student Services Contractor - equivalent to GS-05; Fisheries; [EPA Challenge Grant; Avian Botulism in Distressed Great Lakes Environments]; May 2012 – December 2012; $16.63/hr [full time])

Supervisor: Taaja Tucker, phone: (734) 214-7264, email:trtucker@usgs.gov

* Duties and Responsibilities:
* Backpack monitored 7 miles of northern Lake Michigan shoreline performing field surveys and analyses including Avian Monitoring for Botulism Lake Events (AMBLE) and EPA Sanitary Survey
* Utilized a range of collection techniques for water and sediment sampling to measure conductivity, dissolved oxygen, pH balance, temperature, dissolved organic matter, turbidity, nitrogen, and phosphorus
* Identified shoreline flora and fauna
* Maintained and calibrated field equipment
* Observed waterfowl for neurological indications of *C. botulinum* poisoning and recorded findings; collected perished waterfowl for further laboratory testing
* Created and organized Microsoft Excel and Microsoft Access databases; summarized data in preparation for future use in reports and publications
* Worked independently in field and lab
* Interacted with the public and professionally addressed any questions and concerns
* Cautiously followed established safety protocols in the field and lab setting

**Michigan Department of Natural Resources, Marquette State Fish Hatchery, Marquette, MI; Fisheries Technician** (State Worker; Fisheries; June 2010 - August 2010; $7.40/hr [seasonal 480/hrs])

Supervisor: Jim Aho, phone: (906) 249-1611, email:ahoj@michigan.gov

*\*\*Records found under maiden name: Paige Lizabeth Evans*

* Duties and Responsibilities:
* Mass marked by fin clipping 300,000 fingerling lake trout with a 96% clip rate
* Anesthetized and revived using MS-222 before and after the marking procedure
* Observed fish behavior for negative health effects from MS-222
* Maintained, cleaned and sterilize hatchery raceways
* Assist in spawning, rearing, harvesting, egg disinfection, incubation and inventory of aquatic species
* Diagnose and treat various diseases among broodstock and fingerlings
* Communicated and interacted professionally with the public about the history and current work being done at the hatchery on a daily basis

**PROFESSIONAL PRESENTATIONS**

Chiotti, J., Leonardi, J., **Wigren, P.,** Boase, J., Galarowicz, T. 2020 Fisheries Evaluation of the Frankenmuth Rock Ramp in Frankenmuth, Michigan. Oral Presentation. Michigan Chapter of American Fisheries Society, Mount Pleasant, MI.

Chiotti, J., Leonardi, J., **Wigren, P.,** Boase, J., Galarowicz, T. 2019 Fisheries Evaluation of the Frankenmuth Rock Ramp in Frankenmuth, Michigan. Oral Presentation. State of the Bay Conference, Saginaw, MI.

Chiotti, J., Leonardi, J., **Wigren, P.,** Boase, J., Galarowicz, T. 2019 Fisheries Evaluation of the Frankenmuth Rock Ramp in Frankenmuth, Michigan. Oral Presentation. Great Lakes Fish Commission: Lakes Committee Meetings, Ypsilanti, MI.

**Wigren, P**., Chiotti, J., Briggs, A., Boase, J., Roseman, E., Wills, T. 2017 Adult Fish Response to Artificial Reefs Constructed in the St. Clair-Detroit River System. Oral Presentation. International Association for Great Lakes Research, Detroit, MI.

Schmidt, B., Roseman, E., King, N., Fischer, J., Mayer, C., Provo, S., **Wigren, P**. 2017. Sampling Characteristics of Egg Mats. Poster Presentation. Midwest Fish and Wildlife, Lincoln, NE.

Hunter, R., Roseman, E., DeBruyne, R., Fischer, J., **Wigren, P**., Fyke, Z., Magier, J. 2016. Monitoring of two artificial spawning reefs for Lake Sturgeon, *Acipenser fulvescens* reproduction in the St. Clair-Detroit River System. Oral Presentation, Grand Rapids, MI.

Keeler, K., Roseman, E., Sutherland, J., **Wigren, P**. 2016. Comparison of zooplankton communities during harmful algal blooms in a Great Lakes connecting channel. Poster Presentation. Midwest Fish and Wildlife, Grand Rapids, MI.

**Wigren, P**., DeBruyne, R., Pritt, J., DuFour, M., Roseman, E. 2016 Ichthyoplankton surveys of the Detroit River: A synopsis of recent Studies. Poster Presentation. Midwest Fish and Wildlife, Grand Rapids, MI.

Tucker, T., Farha, S., Johnson, E., **Wigren, P**., Riley, S. 2015. Round goby (*Neogobiusmelanostomus*) catch trends across the nearshore habitats of northern Lake Michigan. Poster Presentation. Society for Freshwater Science, Milwaukee, WI.

Johnson, E., Tucker, T., Farha, S., **Wigren, P**., and Riley, S. 2015. Diet preferences of round goby (*Neogobiusmelanostomus*) near Sleeping Bear Dunes National Lakeshore. Oral Presentation. Society for Freshwater Science, Milwaukee, WI.

**INVITED PRESENTATIONS AND GUEST LECTURES**

**Wigren, P.** March 2019. U.S. Fish and Wildlife Service Lake Sturgeon Restoration Plan in the St. Clair Detroit River System. Oral Presentation. School for Outdoor Leadership and Recreation, Annual Meeting, Livonia, MI.

Fischer, J., E. Roseman, D. Mifsud, S. Ireland, K. Keeler, R. Hunter, D. Bowser, D. Castle, S. Provo, J. Sutherland, R. Young, C. Prichard, **P. Wigren**, E. Acromite, N. Williams, E. Galassini, E. O'Neil, J. Magier. 2015. Synopsis of shoreline restoration projects in the St. Clair River. Poster Presentation. The State of the Strait, Ypsilanti, MI.

Tucker, T., K. Smith, and **P. Wigren**. Avian botulism and our waterbirds. Oral presentation. Inland Seas Education Association, 18 September 2013, Suttons Bay, MI.

**TECHNICAL REPORTS AND OTHER PUBLICATIONS**

**Wigren, P.L.,** J.A. Chiotti, J.M. Leonardi, and J.C. Boase. (*in preparation – Restoration Ecology*). *Fisheries Evaluation of the Frankenmuth Rock Ramp in Frankenmuth, MI.*

**Wigren, P.,** Chiotti, J., Boase, J.Alpena Fish & Wildlife Conservation Office (FWCO)-Waterford Substation *2018 Cass River Rock Ramp Report*. July 2019

**Wigren, P.** Stanley the Sturgeon Steals the Show at the 2019 Sturgeon Festival – Detroit River Substation Native Species Program: *Fish Lines: Fisheries and Aquatic Resources Program.* 1 July 2019

Chiotti, J., Schmidt, B., **Wigren, P.,** Johnson, J**.** Alpena Fish & Wildlife Conservation Office (FWCO) –Waterford Substation: *Native Species Report 2017.* March 2018

**Wigren, P.,** Chiotti, J., Boase, J.Alpena Fish & Wildlife Conservation Office (FWCO)-Waterford Substation *2017 Cass River Rock Ramp Report*. March 2018

Chiotti, J., Schmidt, B., Johnson, J., **Wigren, P.** Alpena Fish & Wildlife Conservation Office (FWCO)- Waterford Substation: *Native Species Report 2016.* September 2017

**Wigren, P.** 7th Annual Detroit River Kids Fishing Festival: *Fish Lines: Fisheries and Aquatic Resources Program.* 29 June 2017

**Wigren, P.** Celebrating World Wetlands Day 2017: Fish Lines: Fisheries and Aquatic Resources Program. 27 April 2017

Fischer, L., **Wigren, P.**, Chiotti, J., Boase, J.Alpena Fish & Wildlife Conservation Office (FWCO)-Waterford Substation: *2016 Cass River Rock Ramp Report*. March 2017

**Wigren, P.** Another Field Season in the Books for the Alpena FWCO - Waterford Substation Native Species Program: *Fish Lines: Fisheries and Aquatic Resources Program.* 2 March 2017

**Wigren, P.,** Lajavic, J. Alpena FWCO Joins Colleagues at Workshop Identifying Nongame Fishes in the Great Lakes: *Fish Lines: Fisheries and Aquatic Resources Program.* 14 October 2016

**Wigren, P.,** Chiotti, J. 6th Annual Detroit River Kids Fishing Festival: *Fish Lines: Fisheries and Aquatic Resources Program.* 22 July 2016

**OUTREACH**

*STREAM Girls Camp – Port Huron Girl Scouts* (September 10-12, 2021) – Port Huron, MI

Behind the scenes programming, coordinating and managing partnership between Girl Scouts of Southeast Michigan and Port Huron to successfully offer USFWS first STREAM Girls camp

*Lake Sturgeon work on the Detroit River - Outdoor Adventure Center* (March 30, 2021) - Detroit, MI

Overview of the Native Species program goals and lake sturgeon work being conducted in the St. Clair-Detroit River system

*Regional Office Visit – Principle Deputy Director of USFWS* (October 9, 2019) – Trenton, MI

Captured juvenile lake sturgeon to perform surgery for acoustic transmitter implantation and provided a tour of the refuge property

*Maumee River Lake Sturgeon Release Ceremony* (October 5, 2019) – Toledo, OH

Celebrating the 2nd annual adopt-a-juvenile lake sturgeon release ceremony on the Maumee River in Ohio; worked USFWS outreach booth to explain the current and future efforts being conducted by the USFWS and partners to preserve and grow lake sturgeon populations throughout the Great Lakes

*Sporting Clay Township - Blue Water Sturgeon Classic Tournament* (September 21, 2019) - Algonac, MI

Managed touch tank with an adult and juvenile lake sturgeon and informed the curious public about restoration efforts being conducted by USFWS throughout the Great Lakes to roughly 2,000 participants

*Stream Girls Event* (July 27-28, 2019) – Muskegon, MI

Teaching young girls, 5-15 years old, how to fly fish and tie flies, stream habitat ecology and macroinvertebrate ecology

*Blue Water Area Lake Sturgeon Festival* (June 1, 2019) – Port Huron, MI

Celebrating the Port Huron, MI lake sturgeon population while educating approximately 1,500 adults and 2,500 children about lake sturgeon life history

*Career Day Presentation* (March 6, 2019) – Grand Blanc Middle School East, Grand Blanc, MI

Presented “A Day in the Life of a Fisheries Technician” to approximately 130 7th and 8th grade students highlighting my work with native and non-native species within the Great Lakes

*Open Streets* (October 7, 2018) – Detroit, MI (Historic Corktown)

Assisted the Detroit Riverfront Conservancy outreach booth and taught over 300 kids how to cast a fishing pole

*Maumee River Lake Sturgeon Release Ceremony* (October 6, 2018) – Toledo, OH

Celebrating the 2nd annual adopt-a-juvenile lake sturgeon release ceremony on the Maumee River in Ohio; worked USFWS outreach booth to explain the current and future efforts being conducted by the USFWS and partners to preserve and grow lake sturgeon populations throughout the Great Lakes

*Point Mouillee Waterfowl Festival* (September 15, 2018) – Brownstown, MI

Educate and field questions about native and invasive fisheries work being conducted in the St. Clair-Detroit River system during the annual Point Mouillee Waterfowl Festival for about 2,000 adults and children held at the Point Mouillee State Game Area

*Detroit River International Wildlife Refuge Humbug Marsh Archery Open House* (September 1, 2018) – Trenton, MI

In partnership with the USFWS Detroit River International Wildlife Refuge staff members, successfully taught the basics of archery to about 100 children and adults

*Congressional Tour of Detroit River Restoration work* (August 16, 2018) – Detroit, MI (Belle Ile)

Boat tour for congressional members to artificial reef sites and shoreline restoration sites to highlight successful work that has been accomplished to restore fisheries habitat in the Detroit River

*Blue Water Area Lake Sturgeon Festival* (June 2, 2018) – Port Huron, MI

Celebrating the Port Huron, MI lake sturgeon population while educating approximately 2,000 adults and 1,500 children about lake sturgeon life history

*Detroit River Sturgeon Day* (May 12, 2018) – Detroit, MI (Milliken State park)

Raising lake sturgeon awareness through life history education for approximately 250 inner city youth and chaperones

*Career Night Presentations* (March 20, 2018) – Schoolcraft Community College, Livonia, MI

Worked USFWS booth aimed to explain the career of a fisheries technician and a fisheries biologist in the Great Lakes region to 250 high school students; focused on native and invasive species work

*Career Day Presentation* (March 7, 2018) – Grand Blanc Middle School East, Grand Blanc, MI

Presented “A Day in the Life of a Fisheries Technician” to approximately 130 7th and 8th grade students highlighting my work with native and non-native species within the Great Lakes

*World Wetlands Day* (March 5, 2018) – Oscar A. Carlson High School, Gibraltar, MI

Worked USFWS booth and provided information on the USFWS role in protecting native species and monitoring for non-native species to approximately 2,500 students ranging from grades 4-12

*Detroit River Restoration Project Tour* (August 17, 2017) – Detroit, MI (Detroit River and Belle Isle) Congressional and partners with USFWS outreach tour aimed at highlighting the multiple restoration projects being completed on the Detroit River (100 adults)

*Phi Sigma Beta Fraternity; SIGMA Beta Club* (July 20, 2017) – Detroit, MI (Historic Fort Wayne)

A USFWS outreach event geared toward connecting their young members with conservation professionals and to share how we have been making the Detroit River cleaner and healthier for all of us (46 adults/126 children)

*Detroit River Kids Fishing Festival* (June 11, 2017) – Detroit, MI (Milliken State Park)

In conjunction with “Michigan Free Fishing Day”, USFWS hosted a free fishing clinic along the Detroit River for approximately 400 inner city youth and 100 guardians

*Blue Water Area Lake Sturgeon Festival* (June 3, 2017) – Port Huron, MI

Celebrating the Port Huron, MI lake sturgeon population while educating approximately 3,000 adults and 4,000 children about lake sturgeon life history

*Detroit River Sturgeon Day* (May 11, 2017) – Detroit, MI (Milliken State park)

Raising lake sturgeon awareness through life history education for approximately 100 inner city youth and 11 chaperones

*Chelsea Science Night* (March 17, 2017) – Washington Street Education Center, Chelsea, MI

Worked USFWS booth and provided information on the USFWS role in protecting native species and monitoring for non-native species to approximately 200 adults and 300 children

*Career Day Presentation* (March 15, 2017) – Grand Blanc Middle School East, Grand Blanc, MI

Presented “A Day in the Life of a Fisheries Technician” to approximately 120 7th and 8th grade students highlighting my work with native and non-native species within the Great Lakes

*World Wetlands Day* (March 10, 2017) – Oscar A. Carlson High School, Gibraltar, MI

Worked USFWS booth and provided information on the USFWS role in protecting native species and monitoring for non-native species to approximately 3,000 students ranging from grades 4-12

*Open Streets* (October 2, 2016) – Detroit, MI (Historic Corktown)

Assisted the Detroit Riverfront Conservancy outreach booth and taught over 500 kids how to cast a fishing pole

*Detroit River Kids Fishing Festival* (June 12, 2016) - Milliken State Park, Detroit, MI

Worked USFWS booth assisting in renting out fishing poles and taught approximately 482 children and 250 adults how to fish

*Catch Me If You Can Fishing Festival* (June 4, 2016) - Haithco Recreation Area, Saginaw, MI

Worked USFWS booth and provided information on the USFWS role in protecting native species and monitoring for non-native species to approximately 350 children and their parents

**VOLUNTEER EXPERIENCES**

*Detroit River Kids Fishing Festival* (June 12, 2022) – Detroit, MI (Milliken State Park)

In conjunction with “Michigan Free Fishing Day”, assisted a USFWS hosted free fishing clinic along the Detroit River for approximately 400 inner city youth and 100 guardians

*Michigan Department of Natural Resources* (May 25, 2018) – Annual Detroit River muskie gamete collection;

Assisted with boat electrofishing to collect adult Great Lakes muskie for gamete collection

*Clinton River Watershed Council* (February 2017, 2018, 2019, 2021) – Annual Winter Stonefly Search – Rochester Hills, MI; Volunteer for aquatic insect search and identification

*Michigan Sea Grant* (February 2016) - Great Lakes National Ocean Sciences Bowl – Ann Arbor, MI; Science judge for national high school state level science competition

*Midwest Fish and Wildlife Conference* (January 2016) - Grand Rapids, MI; Judged student posters and presentations for the Michigan Chapter of the American Fisheries Society

*U. S. Geological Survey* (October 2014 and September 2015) - Hammond Bay Biological Station; Acoustic telemetry work with spawning lake trout on Horseshoe Reef, Drummond Island, MI; surgically implanting tags and egg and gamete retrieval for genetics from spawning adults; mapping of historic spawning reefs using handheld Trimble unit and Garmin GPS

*U. S. Geological Survey* (April and September 2015) - Ann Arbor, MI; Assisted in the setting, retrieval and data acquisition of a large-scale telemetry array throughout the Saint Clair – Detroit River systems

*U. S. Geological Survey* - (July 2013) - Maumee Bay, Ohio; worked towards understanding nutrient processing and ecological dynamics in the lower river, primarily focused on the mixing zone, in an effort to remove the Area of Concern designation for the Maumee River

*Michigan Department of Natural Resources – Charlevoix, MI Station -* (September 2012) - Charlevoix, MI; Assisted MDNR Biologist Jory Jonas and a graduate student with research on lake trout population in Elk Lake, MI; setting and retrieving gill nets; identifying, measuring length and recording the weight of fish caught

*Northern Michigan University: Environmental Science Club* (December 2009 and 2010) - Marquette, MI; Coordinated “World Soil Day” to educate the community about the different types of soil and their importance for our food and environment

*Trout Unlimited: Fred Waara Chapter* (September 2009, 2010, 2011, 2012) - Marquette, MI; Taught community outreach classes on native fish identification to approximately 30-4th grade students at Superior Hills Elementary in Marquette, MI

*Northern Michigan University: Environmental Science Club* (April 2009, 2010 and 2011) -Marquette, MI; Coordinated “Dead River: What lurks on the bottom?” a community based education event to teach and raise awareness on the importance aquatic invertebrates have on local stream health

*Northern Michigan University: Adventurous Women with Outdoor Lifestyles* (May 2008, 2009, 2010, 2011, 2012) Marquette, MI; Developed and coordinated a fishing event in partnership with MDNR to get female students to try fly fishing for the first time; taught proper fly fishing technique and fish identification

*Northern Michigan University* (September 2007, 2008, 2009, 2010, 2011, 2012) - Marquette, MI; teaching assistant for “Beginners Fly Fishing” course offered at Northern Michigan University

**PROFESSIONAL AFFILIATIONS**

* Michigan Alliance for Environmental and Outdoor Education (April 2022 - present)
* Wildlife Society, Member (September 2008 - present)
* Trout Unlimited, Fred Waara Chapter, Member (August 2009 - present)
* American Fisheries Society, Michigan Chapter (September 2018 - present)
* Environmental Science Society, Member (September 2008 – May 2012)
* Adventurous Women with Outdoor Lifestyles, Vice President (September 2007 - May 2012)

**REFERENCES**

**James Boase**

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