GREG ZIMMERMAN

Vice President / Endangered Mussel & Fisheries Biologist / Water Quality Specialist

As Vice President at EnviroScience, Mr. Greg Zimmerman oversees ecological transportation projects including endangered mussel, bat and fish consultations, and large, multi-task environmental and restoration projects. Greg has 28 years of experience in fieldwork and project management for natural resources and freshwater mussel and endangered species consulting, including expert witness and litigation support. The USFWS and over 18 states have approved Greg as a mussel and fish contractor in various regions since 1997. He has designed and managed some of the largest mussel relocation, bio-monitoring and mitigation projects completed to date in the U.S. for various DOTs including PennDOT's Hunter Station Replacement project whose scope included moving mussels into New York State and the Seneca Nation. He has completed 22 Biological Assessments (BA) for transportation-related projects where endangered species were an issue and has received authorization for many projects where T&E species were anticipated.

EDUCATION

M.L.S. Biology and GIS, Kent State University, 2004

B.A. Environmental Biology, Hiram College, 1996

CERTIFICATIONS

Approved USFWS / State Mussel / Fish Contractor in >16 States

Association of Diving Contractors International, Commercial Air Diver

Kirby Morgan Helmet and Mask Operator / User Training

Advanced Diving Openwater / Drysuit / Search and Recovery Certifications

40h HAZWOPER / eRailSafe

YEARS OF EXPERIENCE

EnviroScience, Inc.: 28

Hiram College Instructor: 2

RELEVANT EXPERIENCE

Expert Witness

Emergency Response

PennDOT Programmatic BA

BP Programmatic BA

Endangered Mussels / Fishes

Restoration for Nat. Resources

BAs / Stakeholder Coordination

Water Quality Monitoring

GIS of Biological Systems and

SELECTED PROJECT EXPERIENCE

Expert Witness ESA Consultation U.S. Supreme Court Case for the ACF Water Rights, Florida, Mussel / Aquatic Biologist, 2005 – 2020. Mr. Zimmerman was Florida's lead malacologist for two water rights cases between the states of Florida, GA, and AL. Mr. Zimmerman provided expert testimony regarding water management for endangered mussels and fish habitat on this nationally-recognized project including endangered freshwater mussels and the federally threatened Gulf Sturgeon. Greg also led diving field surveys of over 200 locations within the watershed and coordinated extensively with the USFWS, USACE, FWC, TNC, and other stakeholders, as well as discussions on site restoration potential.

ODOT VAR-STW Ecological Resources Surveys (PID 95904) Statewide, OH: Project Manager for this statewide agreement focused on threatened and endangered species; primarily mussel and bat-related project conflicts. Greg has worked closely with the ODOT Office of Environmental Services to maintain scheduled progress on all elements of the Work. Projects have included LAW-SR 7-5.50, SCI-823-0.00, LAK-535-0.39, GUE-541-7.46, LUC-475-3.08, LAW-217-5.85 and D12 BH FY2015. These projects have been successfully completed and the contract was closed out in late 2016. ES was subsequently awarded a similar ODOT task order contract in 2018 with active task orders in 2021.

Greg coordinated the needs of T&E fish, mussels, water quality and construction to develop the Miller Station BA.

RELEVANT EXPERIENCE (CONT'D):

T&E Species Surveys, Permitting and Agency Coordination for a variety of DOTs, Oil & Gas, Drinking Water, and Corridor Projects

PennDOT Bridge Replacements and Programmatic Agreements

USACE Diving Projects for Habitat Mitigation, Navigational Dredging, Endangered Species, and Flood Control

Underwater Maintenance / Inspection Projects for Gas and Coal Power Plants

FERC Studies for Hydropower

GIS Studies for Fish Passage and Habitat Modeling

Expert Witness for Water Rights and Endangered Species Issues

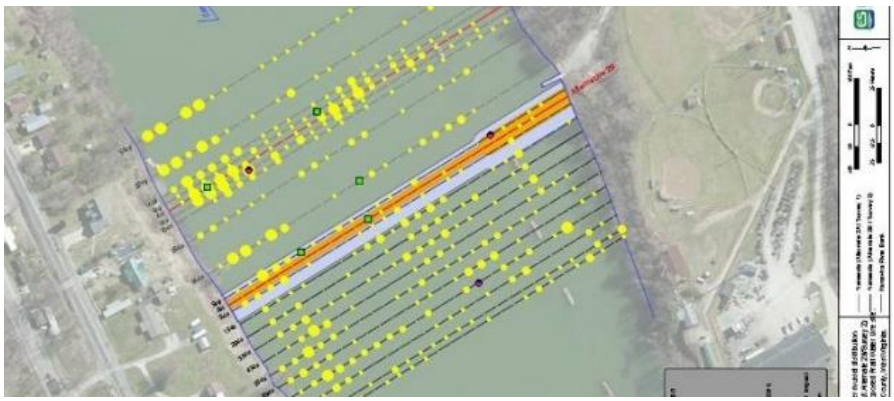
Manager of One of the Largest T&E Mussel Mitigation Projects on Record, involving 6 States and 10 Agencies

Kinzua Dam FERC Relicensing: Fisheries, Hellbender and Mussel Studies, 2012, PA and NY. Mr. Zimmerman managed and implemented ecological and physical water quality components of a large FERC dam relicensing project on the Allegheny River and Allegheny Reservoir. The project included direct field studies and analysis of 8 miles of the river and 2 miles of reservoir, including fish electofishing and habitat analysis, water quality, mussel diving surveys, and Eastern Hellbender assessments associated with the dam reservoir storage operations.

Pratt-Hansford Emergency Waterline Replacement, Hansford, WV, Project Manager / BA Preparer, 2013 – 2017. Mr. Zimmerman coordinated intensively with the USACE, USFWS, state agencies, engineer consultants and the project owner to meet the project needs of constructing a critical waterline before water temperatures dropped below acceptable survey temperatures for a translocation. This emergency waterline construction was necessary to ensure the health of over 1,500 residents due to an unsafe water condition. A BA Greg authored was approved in record time, mussels were moved, and the project was constructed. ES monitored the site and relocated mussels for four years post-construction.

PennDOT Hunter Station Bridge Replacement, Endangered Mussel Relocation and Monitoring, 2015 – Present. Mr. Zimmerman was the PM for this ongoing project, which entailed the salvage and relocation of **142,000** mussels **(>90,000 endangered species**) to 9 different watersheds in 7 states, including NY and the Seneca Nation of Indians. The project required extensive coordination and scheduling with 25 separate agencies and partners. A number of critical issues were managed including scheduling, conservation priorities, budget, matching funds, quarantine, transport methods, quality assurance, salvage efficiency, subcontractor management, tag-recapture methods, and monitoring. To date, the project resulted in an estimate >92% of T&E species being relocated from the direct impact area with >85% survivorship. ES will continue to assist PennDOT with the monitoring of these populations over the next 7 years and the project was awarded the Governor's Award by Pennsylvania Governor Tom Wolf in 2017 https://www.enviroscienceinc.com/hunters-station-project-leaders-team-earns-pa-governors-excellence-award/ .

Mr. Zimmerman managed mussel surveys of multiple alignments to develop the Pratt-Hansford emergency waterline BA. A BO was issued in record time and Mr. Zimmerman managed the relocation and monitoring of T&E mussels using 10 divers, allowing 1,500 residents to obtain safe drinking water.



ENDANGERED MUSSEL CONSULTATION FOR WATER REGULATION & WATER WITHDRAWALS

Apalachicola River, FL

The Apalachicola River is the largest river in Florida and drains one of the largest basins in the Eastern Gulf Region. The Chattahoochee, Chipola, and Flint rivers in Alabama, Florida, and Georgia are all major tributaries of the Apalachicola River and all of these rivers, with the exception of the Chipola River, are regulated for water control and navigation.

Apalachicola River basin historically contained a diverse mussel (Unionidae) fauna of 34 species including 7 endemics. At least 3 of these endemics are believed to be extinct and 5 species are protected under the Endangered Species Act. Recent surveys of the Apalachicola and Chipola river systems found extant populations of 5 federally protected mussels. However, these surveys have only provided anecdotal habitat, population size, or life history data for most species. Furthermore, comparisons of historical and recent records indicate that dramatic declines in the unionid populations of these rivers have occurred in the last 100 years.

This study was commissioned by the Florida DEP to address a critical need for information about the population structure, distribution, and habitat use of threatened and endangered mussels in the mainstem Apalachicola and Chipola Rivers and their sloughs and tributaries. Between October and November 2005, EnviroScience, Inc. surveyed over 160 locations using wading, scuba, and hardhat diving methods. Surveys were focused on sloughs, side channels, and tributaries that were under-sampled by previous surveys. Timed searches restricted to specific habitats (Phase 1) were used to determine presence of mussels within sites. Quantitative sampling (excavation of 0.25m2 quadrats, Phase 2) was then conducted at a subset of the sites to assess unionid density and population structure. Transect sampling was used to assess the distributions of mussels in large river habitats.

Evidence of unionids (alive or dead) was detected at 68% of the 163 sites. A total of 3,011 (2,849 live / 162 dead) unionids representing 20 live species were detected including federally protected species. The most numerous populations of unionids within the mainstem Apalachicola River were located in relatively shallow habitats such as channel margins, sloughs, and tributaries that are more vulnerable to rapid fluctuations in water depths than mid-channel populations. Stable substrates in the mainstem of the Apalachicola River were rare and restricted to channel margins. Mid-channel mussel populations were much less numerous than those along margins and in sloughs. Together, our results suggest that channel margin and tributary habitats are critically important to the survival of threatened and endangered mussels in the Apalachicola and lower Chipola Rivers and that these populations are highly vulnerable to extreme river level fluctuations.

Client
Florida Dept. of Environmental Protection

Key Services Provided
- Mussel Survey
- Expert Witness
- Document Review
- GIS
- Biological Assessment Analysis
- Expert Witness
- Water Level Monitoring

Contact
[redacted]

Project Duration
2005 - Present

Key Staff
Greg Zimmerman
[redacted]

EnviroScience
www.EnviroScienceInc.com