## Patricia ‘Patty’ Herman, MS

### **Education**

MS – Biological Sciences, Southern Illinois University – Edwardsville, 2001

BS – Biological Sciences, Southern Illinois University – Edwardsville, 1998

AS – Biological Sciences, Lewis & Clark Community College, Godfrey, IL, 1996

### **Specialty Certifications**

Mine and Health Safety Administration

* Impoundment Certification
* 40-hour Surface and Underground Miner Training

### **Professional Affiliations**

The Wildlife Society

Memphis Area Geological Society

Southern Illinois Earth Science Club

### **Professional Experience**

Patty Herman is a Senior Project Professional for SCS Engineers’ Carbon Sequestration and Deep Well Injection practice. She earned both MS and BS degrees in Biological Sciences with emphasis in aquatic ecology at Southern Illinois University - Edwardsville. Ms. Herman’s early career focused on endangered species management, recovery and habitat restoration with U.S. Fish and Wildlife Service. She gained experience in coal mining operations as an inspector for surface and underground coal mines enforcing State and Federal regulations. Since joining SCS in 2023, she has worked with clients on various projects including deep well CO2 sequestration and mining permitting and bond release applications. She is currently responsible for management of 14 projects and provides technical support for mining related projects in southern Illinois. Examples of her project experience follow:

**Carbon Sequestration**

**Confidential Clients: Various States.** Ms. Herman provides regulatory consultation for development and submission of a Class VI permit applications.

**Sub-Surface Investigation**

**Confidential Clients: Illinois.** Project Manager tasked with supporting investigations into sources of non-compliant seeps emerging on private property after being subsided by longwall mining. The project consists of an evaluation of the hydraulic behavior of subsurface soils, previous oil and gas activities, and investigation of potential PFAS contamination.

**Permitting and Coal Mining Related Studies**

**Illinois Land Resources - Illinois.** Affected acreage reporting, unaffected acreage bond release, phased bond release applications, Post-Mining Land Use permitting actions, Significant Permit Revisions, mitigation of affected soils and other reclamation activities for Galatia Mine, Galatia, IL.

**Williamson Energy - Illinois.** Affected acreage reporting, unaffected acreage bond release, reclamation activities, Coarse Refuse and Slurry Placement Timing Study, Restoration and Reclamation of Wetland Post-subsidence Plan and various activities for Pond Creek Mine, Marion, IL.

**Sugar Camp Energy - Illinois.** Affected acreage reporting, unaffected acreage bond release, phased bond release applications, Post-Mining Land Use permitting actions, Significant Permit Revisions, mitigation of affected soils, topsoil depth analyses for construction of 12-mile pipeline and diffuser site to Big Muddy River and other reclamation activities for Sugar Camp Mine, Macedonia, IL.

**Macoupin Energy – Illinois.** Reclamation and borrow area feasibility study, design and permitting; post-mining land use permitting actions.

**Hillsboro Energy – Illinois**. Subsidence sinkhole seismic investigation to ensure public safety of State Highway 185 and regulatory compliance for reclamation.

**Relevant Experience**

Land Reclamation Specialist; IL Department of Natural Resources; Office of Mines and Minerals, Land Reclamation Division

* Conduct inspections of surface facilities at active, reclamation status, and carbon recovery coal mines to ensure compliance with the Surface Mine Land Conservation and Reclamation Act and applicable federal laws and proper use/conservation of natural resources.

Fish Biologist; U.S. Fish & Wildlife Service, Carterville Fish & Wildlife Conservation Office, Marion, IL; Columbia Fish & Wildlife Conservation Office, Columbia, MO

Projects:

Environmental DNA (eDNA) Monitoring of Invasive Carps in the Ohio River, Middle Mississippi River and Chicago Area Waterway System

Asian Carp Monitoring and Removal in the Chicago Area Waterway System and Upper Illinois River

Leading-edge Black Carp Monitoring and Surveillance

Triploid Grass Carp Certification Inspections

Pallid Sturgeon Population Assessment Program  
Fish Passage/National Fish Habitat Action Plan

U.S. Forest Service Mark Twain National Forest Stream Assessment

Osage Lock & Dam #1 Fish Passage Assessment

Mississippi Interstate Cooperative Resource Association Database Manager (MICRA)

Habitat Assessment & Monitoring Project

Missouri River Monitoring and Evaluation of Mitigation Sites

Mussel Surveys of Southeast Missouri Rivers

* Independently prepare, plan and execute complex surveillance and monitoring program for invasive carps in the Ohio River, Middle Mississippi River, Chicago Area Waterway System, Illinois River, lower Missouri River and associated backwaters and tributaries.

USFWS Detail – Southwestern Native Aquatic Recovery Resources Center; U.S. Fish and Wildlife Service, Dexter, NM.

* Performed humane fish necropsies and disease testing as part of annual National Fish Hatchery

USFWS Detail – Biochemistry and Physiology; U.S. Geological Survey, Center for

Environmental Research, Columbia, MO.

* Strict adherence to federal policies and protocols for successfully spawning, rearing, husbandry and preservation of federally endangered larval Pallid Sturgeon. Independently developing, designing, implementing and executing larval Pallid Sturgeon behavioral experiments.

USFWS Detail – Ecological Services; U.S. Fish and Wildlife Service, Columbia Missouri Ecological Services Field Office, Columbia, MO.

* Assessing potential threats posed by environmental contaminants to National Wildlife Refuges; providing Contaminant Assessment Process (CAP) for Great Rivers National Fish & Wildlife Refuge. Evaluating environmental impacts of proposed development projects, conducted consultations and prepared written responses pursuant to Section 7 of the Endangered Species Act, Clean Water Act Section 404, Migratory Bird Treaty Act, Bald and Golden Eagle Treaty Act and Contaminants Review.

Natural Resource Specialist; Mecklenburg County Park and Recreation Department, Charlotte, NC Division of Natural Resources, McDowell Nature Preserve

* Nature Preserve, Natural Areas management, restoration and monitoring; endangered and threatened species monitoring, management and mapping.

**Presentations**

Jones, C., J. Rocks, D. Henderson, M. Brodnicki, P. Herman, S. Adams, K. Kosa, J. Rose and K. Schulz. 1998. Tree seedling recruitment and mortality over three years in damaged Mississippi River lowland forest. Illinois State Academy of Sciences. University of Illinois at Chicago, Chicago, Illinois.

Herman, P., S. Welch and P. Brunkow. 1999. Morphological differences in fish from an unvegetated reservoir. Illinois State Academy of Sciences. Carbondale, Illinois. April 9-10.

Herman, P., S. Welch and P. Brunkow. 1999. Morphological variation in sunfish from deep and shallow sites in a vegetation-free reservoir. American Society of Ichthyologists and Herpetologists. State College, Pennsylvania. June 24-30.

Herman, P., S. Welch and P. Brunkow. 1999. Morphological variation of sunfish in a vegetation-free reservoir. Ecological Society of America. Spokane, Washington. August 8-12.

Herman, P. and P. Brunkow. 2000. Fluctuating asymmetry in fish from a lead-contaminated Ozark stream. Illinois State Academy of Sciences. Rock Island, Illinois. April 7-8.

Brunkow, P., J. Badasch and P. Herman. 2000. Decline of salamander populations due to the great flood of 1993? Illinois State Academy of Sciences. Rock Island, Illinois. April 7-8.

Brunkow, P., J. Badasch and P. Herman. 2000. Effects of flooding on salamanders in the Horseshoe Lake State Conservation Area. Illinois Groundwater Consortium. April 13.

Herman, P. and P. Brunkow. 2000. Lead contamination and fluctuating asymmetry in Ozark stream fish. Ecological Society of America. Snowbird, Utah. August 6-10.

Herman, P. and P. Brunkow. 2001. Fluctuating asymmetry of stonerollers from regions of varying lead contamination in the Ozark Mountains. Illinois Academy of Sciences. Macomb, Illinois. April 20-21.

Herman, P. and P. Brunkow. 2001. Fluctuating asymmetry in stonerollers from streams of varying lead contamination history. Ecological Society of America. Madison, Wisconsin. August 5-10.

Brunkow, P. and P. Herman. 2001. Lead contamination and developmental stability in an Ozark stream fish. Pioneer Forest Symposium. St. Louis, Missouri. October 18.

Herman, P. 2001. Fluctuating asymmetry as a sublethal indicator of lead contamination history in an Ozark stream fish. Master of Science Thesis Defense. Southern Illinois University-Edwardsville. December 7.

Herman, P. 2004. Catawba River corridor coverboard project. Central Carolina Amphibian and Reptile Initiative. North Carolina State Museum of Natural Resources, Raleigh, North Carolina.

Herman, P. 2005. Catawba River corridor coverboard project. Central Carolina Amphibian and Reptile Initiative. Davidson College. Davidson, North Carolina.

Herman, P. 2005. Catawba River corridor coverboard project. Central Carolina Amphibian and Reptile Initiative. North Carolina State Museum of Natural Resources, Raleigh, North Carolina.

Herman, P., W. Doyle, E. Kunz and T. Hill. 2008. Evaluating wound treatments of shovelnose sturgeon egg checks. Missouri River Natural Resources Conference, Nebraska City, Nebraska.

Herman, P., W. Doyle, E. Kunz and T. Hill. 2008. Evaluating wound treatments of shovelnose sturgeon egg checks. 69th Annual Midwest Fish and Wildlife Conference, Columbus, Ohio.

Herman, P., L. Johnson, J. Candrl, A. Delonay and D. Papoulias. 2012. Passive and active drift patterns of pallid sturgeon from hatch to bottom settling. 73rd Annual Midwest Fish and Wildlife Conference, Wichita, Kansas.

Candrl, J., P. Herman, L. Johnson, R. Claunch and D. Papoulias. 2012. Defining the point-of-no-return in first-feeding pallid sturgeon larvae using environmental temperature profiles. 73rd Annual Midwest Fish and Wildlife Conference, Wichita, KS.

Herman, P., L. Johnson, J. Candrl, V. Velez, A. Delonay and D. Papoulias. 2014. Pallid sturgeon free embryo drift behavior from hatch to swim bladder inflation. 2014 Missouri River Natural Resources Conference, Nebraska City, Nebraska.

Herman, P. 2015. Aquatic invasive species – potential threats to Missouri. 2015 Annual Missouri Natural Resources Conference, Osage Beach, Missouri.

Herman, P., L. Johnson, J. Candrl, A. Delonay and D. Papoulias. 2015. Pallid sturgeon drift behavior from hatch to swim bladder inflation. 53rd Annual Meeting of the Illinois Chapter of American Fisheries Society, Grafton, Illinois.

**PUBLICATIONS**

Schulz, K., C. Jones, J. Rocks, M. Brodnicki, D. Henderson, P. Herman, K. Kosa and S. Adams. 1998. Contrasting demography and contrasting process: tree seedling recruitment on Mississippi River bottomlands near St. Louis, Missouri. Proceedings of Eighth Annual Groundwater Consortium, April 1-2. Makanda, Illinois. Pages 247-258.

Brunkow, P., J. Badasch and P. Herman. 2000. Effects of flooding on salamanders in the Horseshoe Lake State Conservation Area. Proceedings of the Tenth Annual Groundwater Consortium. Carbondale, Illinois. Pages 111-124.

Herman, P. 2005. Piedmont prairies. Natural Connections. Vol.105 Issue 1. Mecklenburg County Division of Natural Resources. Charlotte, North Carolina. Page 3.

Plauck, A., N. Utrup, W. Doyle, P. Herman and T. Hill. 2007. Pallid sturgeon population monitoring for the Missouri River: Segment 13. 2006 Annual Report. U.S. Fish and Wildlife Service.

Utrup, N., A. Plauck, W. Doyle, P. Herman and T. Hill. 2007. Pallid sturgeon population monitoring for the Missouri River: Segment 14. 2006 Annual Report. U.S. Fish and Wildlife Service.

Herman, P., A. Plauck, N. Utrup and T. Hill. 2008. Three year age and growth report for sicklefin chub (*Macrhybopsis meeki*). Contract report to the U.S. Army Corps of Engineers - Northwest Division. U.S. Fish and Wildlife Service, Columbia National Fish and Wildlife Conservation Office, Columbia, Missouri.

Herman, P., A. Plauck, N. Utrup and T. Hill. 2008. Three year age and growth report for sturgeon chub (*Macrhybopsis gelida*). Contract report to the U.S. Army Corps of Engineers - Northwest Division. U.S. Fish and Wildlife Service, Columbia National Fish and Wildlife Conservation Office, Columbia, Missouri.

Herman, P., A. Plauck, N. Utrup and T. Hill. 2008. Three year age and growth report for speckled chub (*Macrhybopsis aestivalis*). Contract report to the U.S. Army Corps of Engineers - Northwest Division. U.S. Fish and Wildlife Service, Columbia National Fish and Wildlife Conservation Office, Columbia, Missouri.

Plauck, A., N. Utrup, W. Doyle, P. Herman and T. Hill. 2008. Pallid sturgeon population monitoring for the Missouri River: Segment 13. 2007 Annual Report. U.S. Fish and Wildlife Service.

Utrup, N., A. Plauck, W. Doyle, P. Herman and T. Hill. 2008. Pallid sturgeon population monitoring for the Missouri River: Segment 14. 2007 Annual Report. U.S. Fish and Wildlife Service.

Plauck, A., P. Herman, W. Doyle and T. Hill. 2009. Pallid sturgeon population monitoring for the Missouri River: Segment 13. 2008 Annual Report. U.S. Fish and Wildlife Service.

Herman, P., A. Plauck, W. Doyle and T. Hill. 2009. Pallid sturgeon population monitoring for the Missouri River: Segment 14. 2008 Annual Report. U.S. Fish and Wildlife Service.

Plauck, A., P. Herman, W. Doyle and T. Hill. 2010. Pallid sturgeon population monitoring for the Missouri River: Segment 13. 2009 Annual Report. U.S. Fish and Wildlife Service.

Herman, P., A. Plauck, W. Doyle and T. Hill. 2010. Pallid sturgeon population monitoring for the Missouri River: Segment 14. 2009 Annual Report. U.S. Fish and Wildlife Service.

Herman, P. and T. Hill. 2012. A survey of Lock and Dam #1 on the lower Osage River, Missouri. Final report prepared for U.S. Fish and Wildlife Service, Ecological Services - Columbia Field Office. U.S. Fish and Wildlife Service, Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.

Wrasse, C., P. Herman and C. Ridenour. 2014. 2013 Annual report: Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 13. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.

Herman, P., C. Wrasse and A. McDaniel. 2014. 2013 Annual report: Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 14. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.

Wrasse, C., P. Herman, J. Smith, A. Masters, C. Yonce and J. Henry. 2015. 2014 Annual report: Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 13. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.

Herman, P. and C. Wrasse. 2015. 2014 Annual report: Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 14. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.

Garrison, H., P. Herman and J. Finley. 2015. Fish species survey of select creeks in the U.S. Forest Service Mark Twain National Forest: Poplar Bluff Ranger District. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, MO.

Herman, P. and C. Wrasse. 2016. 2015 Annual report: Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 14. United States Fish and Wildlife Service Columbia Fish and Wildlife Conservation Office. Columbia, Missouri.