STEPHANI L. CLARK BARKALOW

Albuquerque, NM
stephani.clark-barkalow@env.nm.gov
505-819-9823

EDUCATION

University of Arizona, Tucson, AZ (2011-2014)
Master of Science, Fisheries Conservation and Management, School of Natural Resources and the Environment

- Master's thesis: Effects of suspended sediment on Yaqui chub, *Gila purpurea*

University of New Mexico, Albuquerque, NM (2005-2010)
Bachelor of Science in Biology, Concentration in Conservation Biology, Minor in Environmental Science

WORK EXPERIENCE

Water Quality Standards Scientist, New Mexico Environment Department, Surface Water Quality Bureau, Albuquerque, NM.
April 2025- present

- Evaluate proposed amendments to New Mexico's Surface Water Quality Standards and develop technically and scientifically defensible WQS proposals consistent with the federal Clean Water Act and New Mexico Water Quality Act.
- Conduct evaluations of scientific studies, environmental datasets, and technical literature to assess designated uses and criteria updates.
- Perform statistical analyses, data assessments, and calculations to support water quality standards revisions
- Support the triennial review of surface water quality standards under the federal Clean Water Act. Responsibilities involve evaluating new scientific findings and regulatory updates, considering public input, and aiding in subsequent rulemaking.

Four Corners Power Plant Biologist, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, Albuquerque, NM.
November 2024-February 2025

- Organized partner meetings within the San Juan River Basin and Colorado River Basin
- Collaborated with state and federal agencies, tribal nations, water users, and non-profit organizations to develop adaptive management strategies for aquatic ecosystems
- Developed partnerships with private landowners and management at Four Corners Power Plant
- Administered National Fish and Wildlife Foundation funds in compliance with Endangered Species Act and Clean Water Act
- Developed and directed projects related to water quality monitoring, habitat creation, habitat monitoring, and monitoring of native and nonnative fishes in the Colorado River Basin
- Evaluated research proposals and prioritized funding based on program goals
- Conducted independent evaluations of environmental data

- Assisted principal investigators with project development, data analysis, and field logistics

Senior Fisheries Biologist, American Southwest Ichthyological Researchers, Albuquerque, NM
March 2014-November 2024; March 2025 to April 2025

- Provide federal agencies compliance information through data and review of projects for compliance with Endangered Species Act, National Environmental Policy Act (NEPA), and the Clean Water Act especially in relation to use of water resources for irrigation, energy, and urbanization projects
- Conducted ecological studies and implemented projects in support of management goals of San Juan Recovery Implementation Program, June Sucker Recovery Implementation Program, and Rio Grande Chub and Sucker Conservation Team to inform management efforts related to recruitment, habitat use, and impacts of land and water development on aquatic biodiversity
- Provided and reviewed compliance in regard to ESA Section 10 permits
- Served as lead technical writer of scientific reports and manuscripts
- Worked with federal, state, and tribal cooperators to perform nonnative fish removal and monitoring in the San Juan River
- Coordinated with private landowners along the San Juan River to perform ichthyofaunal surveys adjacent to private land
- Monitored projects and modified as needed in response to emerging technologies and scientific methods
- Managed employees and acted as mentor for fisheries and technical staff at American Southwest Ichthyological Researchers
- Developed proposals and budgets for federal and state recovery programs
- Participate in recovery planning for listed San Juan River species with San Juan River Implementation Program (SJRIP) including providing reports, presenting scientific data and participating in workshops to develop management plans for fishes and habitat in the San Juan River
- Monitored project deadlines to ensure deliverables were submitted in a timely manner.
- Prepared reports on progress and completion of studies for distribution to recovery programs
- Served as in-office point of contact on contracts administered by U.S. Bureau of Reclamation and New Mexico Department of Game and Fish
- Prepared and published results of endangered fish research in peer reviewed journals
- Worked with federal, state and tribal partners and coordinate with private landowners to implement research projects
- Conducted internal reviews of fisheries project proposals

Research Assistant, University of Arizona, Tucson, AZ
August 2011-May 2014

- Investigated the effects of sedimentation on aquatic ecosystems and developed recommendations to mitigate water quality degradation.
- Assisted in the development of site-specific water quality criteria for federally protected water bodies.

- Assessed impacts of U.S. Border Patrol activities along the U.S./Mexico border on federally endangered Yaqui Chub, protected under the Endangered Species Act
- Utilized principles of conservation and ecology to develop projects to determine the impact of U.S. Border Patrol construction projects and road raking on the aquatic ecosystem of the Rio Yaqui in compliance with the Endangered Species Act
- Designed and conducted field and laboratory study on effects of suspended sediment on diet, growth, and reproduction of federally endangered Yaqui Chub
- Designed and implemented aquatic invertebrate surveys and performed invertebrate identification
- Performed suspended sediment sampling during flood events to evaluate impact of U.S. Border Patrol activities on water quality in the Rio Yaqui and survival of endangered species in the river
- Collaborated with private landowners and scientists in the United States and Mexico.
- Coordinated with refuge managers at San Bernardino national wildlife refuge and private landowners in the U.S. and Mexico to implement research project
- Summarized results and drafted report to San Bernardino National Wildlife Refuge
- Recommended management practices needed to negate deleterious effects of U.S. Border Patrol activities and ensure protection of endangered fishes and their habitat
- Reviewed fish and wildlife project grant proposals for the University of Arizona Graduate and Professional Student Council
- Obtain and report on federal and state collection permits

Curatorial Assistant, Museum of Southwestern Biology Division of Fishes, University of New Mexico, Albuquerque, NM
November 2008-August 2011

- Curated and preserved collections of fishes.
- Catalogued new fish collections to the museum from historic and contemporary sources.
- Worked with and helped maintain museum database.
- Performed reviews of collection filing system and data to ensure accuracy.
- Managed other student employees.

Field and Laboratory Technician, New Mexico Department of Game and Fish, Santa Fe, NM May 2008- October 2008

- Participated in long term mark/recapture study of Texas Hornshell Mussel a New Mexico state endangered species in the Pecos River Drainage.
- Performed fish surveys in the Black River and Pecos River, NM.
- Performed freshwater snail surveys in Gila River Drainage
- Sampled aquatic invertebrates in different settings.
- Perform detail-oriented work sorting and identifying invertebrate samples

PUBLICATIONS

Gilbert, E.I, T.A. Diver, S.M. Mussman, M.J. Saltzgiver, W.K. Knight, S.L. Durst, M.A. Farrington, **S.L. Clark Barkalow**, M. Tobler, and N.R. Franssen. 2025. Why is it too cold? Towards a mechanistic understand of cold-water pollution effects on recruitment of an imperiled warmwater fish. Molecular Ecology 34: e17588.

Clark Barkalow, S.L., R.K. Dudley, S.P. Platania, W.H. Brandenburg, M.C. McKinstry, and G.C. White. 2024. Assessing entrainment of larval fish in the Hogback Diversion Canal, San Juan River. River Research and Applications 40:612–626.

Clark Barkalow, S. L., J. J. Chavez, and S. P. Platania. 2021. Otolith microstructure analysis elucidates spawning and early life histories of federally endangered fishes in the San Juan River. Ichthyology & Herpetology 109(3):860–873.

Clark Barkalow, S. L., M. A. Brandenburg, and S. P. Platania. 2020. Otoliths reveal spawning ecology and early life history of sympatric catostomids. North American Journal of Fisheries Management 40:415426.

Brandenburg, W.H., T.A. Francis, D.E. Snyder, K.R. Bestgen, B.A. Hines, W.D. Wilson, S. Bohn, A.S. Harrison, and **S.L. Clark Barkalow**. 2019. Discovery of Grass Carp *Ctenopharyngodon idella* larvae in the Colorado River arm of Lake Powell. North American Journal of Fisheries Management 39:166171.

Barkstedt, J.M., **S.L. Clark Barkalow**, M.A. Farrington, J.L. Kennedy, and S.P. Platania. 2018. Frequency of opercular deformities in age-0 catostomids in the San Juan River from 1998 to 2012. Transactions of the American Fisheries Society. DOI: 10.1002/tafs.10107.

Clark Barkalow, S.L. and S.A. Bonar. 2015. The effects of suspended sediment on early-life stage survival of Yaqui Chub, an endangered USA-Mexico Borderlands Cyprinid. Transactions of the American Fisheries Society. 144:2

REPORTS

Grey, R., **S.L. Clark Barkalow**, and T.A. Diver. 2024. Evaluating temporal and spatial spawning patterns of Channel Catfish *Ictalurus punctatus* to provide alternatives for nonnative fish control in the San Juan River-Task 1. Report to the San Juan River Recovery Implementation Program, Albuquerque, NM.

Clark Barkalow, S.L., S.P. Platania, A.L. Barkalow, and M.P. Zeigler. 2024. Using mobile PIT tag antennas to detect Razorback Sucker spawning areas in the San Juan River. Report to the San Juan River Recovery Implementation Program, Albuquerque, NM.

Clark Barkalow, S.L., S.P. Platania, A.L. Barkalow, and M.P. Zeigler. 2023. Using mobile PIT tag antennas to detect Razorback Sucker spawning areas in the San Juan River. Report to the San Juan River Recovery Implementation Program, Albuquerque, NM.

Clark Barkalow, S.L. A.D. Urioste, and A.C. Wedemeyer. 2023. Effects of habitat and nonnative fishes on the presence and relative abundance of Rio Grande Chub and Rio Grande Sucker in New Mexico. New Mexico Department of Game and Fish, Santa Fe, NM.

Clark Barkalow, S.L., A.T. Willis, and S.P. Platania. 2022. Otolith aging of age-0 Colorado River Brown Trout and Rainbow Trout in Grand Canyon National Park. Report to U.S.

Geological Survey Grand Canyon Monitoring and Research Center. Flagstaff, AZ.

Clark Barkalow, S.L. and A.D. Urioste. 2022. Investigating origins of unmarked June Sucker using elemental microchemistry. Central Water Conservancy District, Orem, UT.

Farrington, M.A., R.K. Dudley, **S.L. Clark Barkalow**, and G.C. White. 2022. Colorado Pikeminnow and Razorback Sucker larval fish survey in the San Juan River during 2020. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.

Clark Barkalow, S.L., M.J. Chavez, and S.P. Platania. 2019. San Juan River-specific growth functions for larval Colorado Pikeminnow and Razorback Sucker from otolith microstructure and somatic size. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.

Clark Barkalow, S.L. 2017. June Sucker natal source determination using elemental microchemistry. June Sucker Recovery Implementation Program, Utah Division of Wildlife Resources, Salta Lake City, UT.

Clark Barkalow, S.L. and S.P. Platania. 2017. Natal origin Razorback Suckers collected in the San Juan Arm of Lake Powell in 2016. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.

Clark Barkalow, S.L. 2017. Determining origin of San Juan River basin Razorback Suckers. Swimming Upstream Field Report 2017. www.coloradoriverrecovery.org

Clark Barkalow, S.L. and S.P. Platania. 2016. Natal origin Razorback Suckers collected in the San Juan Arm in 2015. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.

Clark Barkalow, S.L., W. H. Brandenburg, R.K. Dudley, S.P. Platania, and M.C. McKinstry. 2016. Evaluation of larval fish entrainment in the Hogback Diversion Canal- 2015. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.

Clark Barkalow, S.L., M.A. Brandenburg, S.P. Platania, and J.L. Kennedy. 2016. Reproductive ecology and early life history of Bluehead and Flannelmouth Suckers in the San Juan River. New Mexico Department of Game and Fish, Santa Fe, NM.

Clark Barkalow, S.L., S.P. Platania, J.L. Kennedy, and M.A. Brandenburg. 2015. Natal origin of San Juan River Razorback Suckers collected in 2014. San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, NM.