

BRETT J. K. OSTBY

Senior Biologist and Co-Owner
Daguna Consulting, LLC
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EDUCATION

Virginia Tech, Blacksburg, VA

Master of Science in Fisheries and Wildlife Sciences

Graduated May 2005

Thesis: Characterization of Suitable Freshwater Mussel Habitat in the Clinch River, Virginia and Tennessee

Relevant Graduate and Post-graduate Course Work: Endangered Species Management, Population and Habitat Analysis, Advanced Fish Ecology, Fluvial Geomorphology, Stream Habitat Management, Population Parameter Estimation, Analysis of Spatial Data, Applied Fisheries Genetics, Statistics in Research, Programming for ArcGIS, Pedagogy for the Natural Resource Sciences

Luther College, Decorah, IA

Bachelor of Arts in Biology, Minor in History

Graduated May 2001, *cum laude*

Senior Thesis: Freshwater Mussels of the Streams of Northeastern Iowa

CERTIFICATIONS AND PROFESSIONAL MALACOLOGY QUALIFICATIONS

- U. S. Fish & Wildlife Service (USFWS) Region 3 & 4 Threatened & Endangered Species Recovery Permit #TE59798B-2 for 35 federally listed mussel species (in renewal/expansion process)
- Minnesota Department of Natural Resources (MNDNR) Threatened & Endangered Species Permit (Special Permit) #20835; MNDNR approved mussel surveyor for State of Minnesota
- Iowa Department of Natural Resources (IADNR) Scientific Collectors Permit #SC1321 and Wildlife Salvage Permit #SC1321; IADNR approved mussel surveyor for State of Iowa
- Wisconsin Department of Natural Resources (WIDNR) Endangered & Threatened Species Permit #1015
- Virginia Department of Wildlife Resources (VDWR) Threatened & Endangered Species Permit and Scientific Collection Permit; USFWS/VDWR approved mussel surveyor for State of Virginia
- Illinois Department of Natural Resources (ILDNR) Endangered and Threatened Species Permit #12080
- Tennessee Wildlife Resources Agency (TWRA) Scientific Collection Permit #1768
- PADI Open Water Diver #010935915

COMPUTER SYSTEMS AND TOOLS

- Programming and application of ERSI software; including ArcMap and ArcObjects
- Application of advanced ecological software; including Program PRESENCE, Program MARK, and PC-ORD
- SAS Statical Software, including JMP
- Microsoft products; including but not limited to Word, Excel, Teams, PowerPoint
- Google Suite of software; including but not limited to Drive, Meet, Docs, Sheets, Google Earth

- Zoom, Adobe Photoshop, Adobe Lightroom

ENDANGERED SPECIES CONSULTING AND BUSINESS EXPERIENCE

Senior Biologist and Co-owner

Daguna Consulting, LLC, Bristol, VA

December 2011 to present

Duties:

- Proposal preparation, grant writing, project and business budgeting, contracting, tax preparation, and drafting of technical reports
- Coordination, scheduling and oversight of multiple independent contractors
- Coordination with construction crews, engineers, towboat pilots, railroad workers, agency scientists, professional dive crews, students, and clients at job sites
- Assisting clients through state and federal endangered species regulatory process, including representation of clients in meetings with state and federal agencies (often conducted via online communication platforms, i.e Zoom and Microsoft Teams)
- Identification of rare and endangered mollusks; curation of reference collection
- Study design and implementation of studies on native freshwater mussels, water quality and habitat ecology
- Statistical analysis, GIS analysis and mapping
- Permit reporting to state and federal agencies, including submittal to relevant databases
- Presentation of research findings in peer-reviewed journals and at professional meetings
- Build and maintenance of business website
- Photography of mollusks, fish and habitats

Projects:

- Quantifying change in occupancy rate of the Federally Endangered Purplebean (*Villosa perpurpurea*) in Copper Creek (Virginia) and Federally threatened Yellow Lance in Hungry Run (Virginia) using occupancy models and related statistics
- Biological Assessments prepared on behalf of U. S. Army Corps of Engineers for projects in Iowa, Wisconsin, and Virginia
- Quantifying occupancy, detection, and meta-population dynamics of federally endangered James spiny mussel (*Pleurobema collina*) in cooperation with James Madison University and VDWR, including student instruction
- Capture-Mark-Recapture (CMR) and population dynamics study of federally endangered James spiny mussel for VDWR in cooperation with Three Oaks Engineering, including study design and modeling
- Development of conservation plan for the state-listed freshwater mussels of the Upper Tennessee River Basin in Virginia
- Development and execution of biological and water quality monitoring plans to fulfill requirements of federally issued Biological Opinions
- Monitoring survival of translocated mussels in the Clinch River marked with Passive Integrated Transponder (PIT) tags using Program MARK models
- Design and execution of long-term quantitative monitoring of mussel populations in the Upper Tennessee River Basin for VDWR and USFWS in cooperation with Virginia Tech, including population dynamics analyses

- *In situ* monitoring of hatchery-propagated juvenile mussels in the Clinch River to detect water quality issues from a wastewater treatment plant

RESEARCH EXPERIENCE

Research Specialist II

Freshwater Mollusk Conservation Center, Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, VA

April 2005 to December 2015

Duties:

- Research development, grant writing, project management and budgeting
- Hired, supervised, mentored, and trained teams of technicians from diverse backgrounds in field and laboratory settings
- Participated in multidisciplinary research teams
- Identification of rare and endangered mollusks for state and federal agencies
- Assisted graduate students and other biologists at the Freshwater Mollusk Conservation Center with mussel and fish surveys, propagation and restoration of endangered mussel species, statistical analysis, and publication

Projects:

- Investigator in a multidisciplinary U. S. Geological Survey (USGS) study documenting water quality, habitat and biological patterns in the Clinch River
- Design and execution of endangered mussel population monitoring in the Clinch River in cooperation with USFWS, TWRA, VDWR, and Tennessee Valley Authority (TVA)
- Occupancy study of the federally endangered purple bean mussel (*Villosa perpurpurea*) in Beech Creek, TN for USFWS using Program Occupancy models and related statistics
- Endangered mussel surveys for Virginia Department of Transportation (VDOT), The Nature Conservancy (TNC), USFWS, VDWR, Duke Energy, and the National Park Service; including identification of rare mussels and snails
- Risk assessment analysis for mussel assemblages and potential restoration sites for TVA
- Developed aquaculture systems to expose mussels to low dissolved oxygen treatments and conducted preliminary experiments to determine effects of low dissolved oxygen on mussels
- Developed and conducted freshwater mussel habitat studies in the Duck River, French Broad River, Nolichucky River, and Clinch River for TVA to test habitat suitability models
- Assessed impacts to habitat associated with a gas pipeline construction in southwest Virginia for VDGIF and USFWS

Graduate Research Assistant

Department of Fisheries and Wildlife Sciences, Virginia Tech, Blacksburg, VA

May 2002 to April 2005

- Developed and completed mussel habitat ecology study in the Clinch River
- Participated in mussel surveys in the Tennessee River, James River, and Dan River drainages
- Conducted proximate physiological analysis for study of carbohydrate diets aquaculture species
- Assisted graduate students and other biologists at the Freshwater Mollusk Conservation Center with mussel and fish surveys, propagation of endangered mussel species, and research
- Hired, supervised and trained student workers

Minnesota Department of Natural Resources Intern

Statewide Mussel Survey Program, St. Paul, MN

June to August 2000

- Assisted with mussel surveys in a variety of habitats from the navigation channel of the Mississippi River to small streams draining prairies and wilderness areas

Survey of Mussel Populations in Northeastern Iowa

Luther College, Decorah, IA

June to October 1999

- Planned, conducted, and analyzed results of a survey for mussel populations in major tributaries of the Mississippi River in northeastern Iowa

RELEVANT OUTREACH EXPERIENCE AND COMMUNITY SERVICE

Zumbro Watershed Partnership

February 2013 to December 2018

- Elected to the board as a citizen representative in March 2013; re-elected March 2016
- Served as chair (5 terms); led board meetings, oversaw staff and non-profit's operations
- Led, planned and participated in public outreach/education events and campaigns
- Cooperated local Soil and Water Districts (SWCDs) and County governments on joint projects
- Grant-writing, grant oversight, grant reporting, fundraising
- Co-authored and published public outreach materials

Rochester EarthFest and Expo

Rochester, MN

February 2015 to April 2017

- Member of informal group composed of community leaders that organized and ran Rochester's Earth Fest and Expo (<http://www.earthfestrochestermn.org/>)

Iowa Mussel Blitz

Anamosa and LeClair, IA (August 2015), Cedar River Surveys, IA (August 2021)

- Volunteer SCUBA diver
- Mussel identification and data collection

Outreach Committee Chair, Virginia Tech Chapter of the American Fisheries Society

Virginia Tech, Blacksburg, VA

September 2002 to August 2005

- Organized and led educational activities for the 4H Biodiversity Day Program
- Developed educational activities teaching key lessons in aquatic ecology, one of which was disseminated in a publication of the Virginia Foundation for Agriculture in the Classroom

Volunteer Coach with Rochester Nordic Ski Team

Rochester Active Sports Club, Rochester, MN

November 2021 to present

- Coaching and instructing middle school and high school students from a diverse community
- Basic instruction as part of Rochester Community Educational program for beginning skiers

Board Director of We Bike Rochester

Rochester, MN

December 2018 to present

- Working with diverse communities to normalize non-motorized, active transportation in Rochester
- Steering Committee for City of Rochester Active Transportation Plan
- Fundraising and planning for annual Bike Summits

Miscellaneous Public Engagement

- **Ostby, B. J. K.** 2013. What are those shells on the lakeshore? Informational flyer/poster prepared for Chester Woods County Park. 1pp.
- Guest Columnist on Natural Resource Issues, Rochester Post Bulletin, 2019-2021
- Master Naturalist Instructor

TEACHING EXPERIENCE

Adjunct Faculty Instructor of Biology

Rochester Community and Technical College, Rochester, MN
August 2012 to December 2013

- Instructed multicultural student body in lab sections of Environmental Biology (BIOL 1100) and General Biology (BIOL 1220)
- Altered labs to include current issues of environmental justice

Summer Nature Camp Instructor

Quarry Hill Nature Center, Rochester, MN
June to August 2001

- Instructor in ecological educational programs for K-12 students from multicultural community of greater Rochester
- Supervised students on extended overnight trips on water and to state parks

PUBLICATIONS AND TECHNICAL REPORTS

Peer Reviewed Publications:

Lane, T., Jones, J., **B. Ostby** and R. Butler. 2021. Long-term monitoring of two endangered freshwater mussels (*Bivalvia*: Unionidae) reveals how demographic vital rates are influenced by life history traits of each species. *PLoS ONE* 16(8): e0256279.

Jones, J., T. Lane, **B. Ostby**, B. Beaty, S. Ahlstedt, R. Butler, D. Hubbs and C. Walker. 2018. Collapse of the Pendleton Island Mussel Fauna in the Clinch River, Virginia: Setting Baseline Conditions to Guide Recovery and Restoration. *Freshwater Mollusk Biology and Conservation* 21: 36-56.

Ostby, B. J. K., J.L. Krstolic, and G.C. Johnson. 2014. Reach-scale comparison of habitat and mollusk assemblages for select sites in the Clinch River. *Journal of the American Water Resources Association* 50(4): 859-877.

Johnson G.C., J.L. Krstolic, and **B. J. K. Ostby**. 2014. Influences of water and sediment quality and hydrologic processes on mussels in the Clinch River. *Journal of the American Water Resources Association* 50(4): 878-897.

Jones J., S. Ahlstedt, **B. J. K. Ostby**, B. Beaty, M. Pinder, N. Eckert, R. Butler, D. Hubbs, C. Walker, S. Hanlon, J. Schmerfeld, and R. Neves. 2014. Clinch River Freshwater Mussels Upstream of Norris Reservoir, Tennessee and Virginia: A Quantitative Assessment from 2004 to 2009. *Journal of the American Water Resources Association* 50(4): 820-836

Zipper, C. E, B. Beaty, G.C. Johnson, J.W. Jones, J.L. Krstolic, **B. J. K. Ostby**, W.J. Wolfe, and P. Donovan. 2014. Freshwater mussel population status and habitat quality in the Clinch River, Virginia and Tennessee, USA: A featured collection. *Journal of the American Water Resources Association* 50 (4): 807-819.

Duncan, M., S. DuRant, **B. J. K. Ostby**, J. H. Roberts, and J. D. Willson. 2011. A multi-taxa survey of biota and biotic integrity in Passage Creek (Potomac drainage), Virginia. *The Northeastern Naturalist* 18:357-369.

Jones, J. W., R. J. Neves, S. A. Ahlstedt, D. Hubbs, M. Johnson, H. Dan, and **B. J. K. Ostby**. 2010. Life history and demographics of the endangered birdwing pearl mussel (*Lemiox rimosus*) (Bivalvia: Unionidae). *The American Midland Naturalist* 163(2):335-350.

Liberty, A. J., **B. J. Ostby**, and R. J. Neves. 2007. Determining a suitable substrate size and sampling frequency for rearing juvenile rainbow mussels *Villosa iris* (Bivalvia: Unionidae). *North American Journal of Aquaculture* 69: 44-52.

Eckblad, J., **B. Ostby** and K. Tenneson. 2002. The unionid mussels of the Upper Iowa and Turkey River watersheds. *Journal of the Iowa Academy of Science* 109(3/4): 43-49.

Selected Technical Reports:

Ostby, B. J. K. 2021. Biological Assessment: Alter East Dock Dredge Site in Scott County, Iowa. Prepared for U. S. Army Corps of Engineers, Rock Island, IL. 82 pp.

Ostby, B. J. K. 2021. Mussel Reconnaissance Survey and Habitat Assessment for the Proposed Central Iowa Water Trails Whitewater Recreational Area in Des Moines, Iowa. Report for Snyder and Associates, Ames, IA. 57 pp.

Ostby B. J. K., N. Berg and M. Berg. 2020. Mussel Survey of the St. Croix River at a Proposed Riverbank Restoration and Riverwalk Project in Stillwater, Minnesota. Report of City of Stillwater, Stillwater, MN. 33 pp.

Ostby, B. J. K. 2019. Relocation Destination Survey Report: Relocation of Higgins Eye Mussel and Other Mussels at the Proposed Hanke Barge Docking and Loading Facility in La Crosse, WI. 7 pp. Report prepared for U. S. Fish and Wildlife Service and Wisconsin Department of Natural Resources. 7 pp.

Ostby, B. J. K. 2018. Mussel Survey of the Upper Iowa River at the Chimney Rock Bridge in Winneshiek County, Iowa; Project # BROS-SWAP-CO96(147) - - 8J-96. Report of Winneshiek County, Decorah, IA. 18 pp.

Ostby, B. J. K. 2017. Mussel Relocation at Pier 7 of the Ford Parkway Bridge in Ramsey County, MN. Contract PW2017-09 for Ramsey County Public Works, Arden Hills, MN. 26 pp.

Ostby, B. J. K. 2016. Using Mark-Recapture Techniques to Estimate Population Parameters and Detection Probability for the Federally Endangered James Spiny mussel. Reporting Under Virginia Contract No. 2014-14665 (2015 Renewal). 83 pp.

Ostby, B. J. K. and B. B. Beaty. 2016. Conservation Plan for the State-listed Freshwater Mussels of the Upper Tennessee River Basin in Virginia. Contract Number 2014-14593 for Virginia Department of Game and Inland Fisheries, Richmond, VA. 210 pp.

Ostby, B. J. K. 2015. Stream Surveys for Protected Mollusks in Tributaries to the Black River, La Crosse and Trempealeau Counties, Wisconsin. Report for AECOM, Minneapolis, MN. 40 pp.

Ostby, B. J. K. and B. B. Beaty. 2014. Stream surveys of freshwater mussels along the proposed route of the Manville Water Project (Phase III) in Scott County, Virginia. Report for Crossroads Engineering, St. Paul, VA. 102 pp.

Ostby, B. J. K. and B. B. Beaty. 2014. Relocation of the Mussel Assemblage at Speer's Ferry Water Pipeline Crossing: Monitoring Efforts through October 2014. Report for Scott County PSA, Gate City, VA. 17 pp.

Ostby, B. J. K. and B. B. Beaty. 2012. Mussel Assemblage Monitoring and Juvenile Mussel Deployment Upstream and Downstream of the Upgraded Sewer Treatment Effluent in St. Paul, Virginia.

Ostby, B. J. K. and P. L. Angermeier. 2012. Survey of the Freshwater Mollusk Assemblages in the Little River, Virginia. Contract Number: 2010-12421. Virginia Department of Game and Inland Fisheries. Richmond, VA.

Ostby, B. J. K., P. L. Angermeier, and R. J. Neves. 2010. Freshwater Mussel Survey in the Upper North Fork Holston River, Virginia. Report for U. S. Fish and Wildlife Service, Abingdon, Virginia.

Ostby, B. J. K. and R. J. Neves. 2009. Dissolved Oxygen Requirements for Freshwater Mussels Phase 1: Development of Test Systems and Experimental Protocols. U. S. Fish and Wildlife Service, Alabama Ecological Services Field Office, AL.

Mattson, K. M., **B. J. K. Ostby**, P. L. Angermeier. 2009. Cost Effective Mussel Restoration and Conservation in TVA Streams and Tailwaters: Contract Supplement. Tennessee Valley Authority, Chattanooga, TN.

Ostby, B. J. K. and P. L. Angermeier. 2009. Reconnaissance Surveys for Native Mussel Habitat, James Spiny mussel (*Pleurobema collina*), and Other Protected Mussels in the Upper James River, Botetourt County, Virginia. U. S. Fish and Wildlife Service, Gloucester, VA.

Ostby, B. J. K. 2009. Survey for Freshwater Mussels in Small Streams on the Quantico Marine Base. ECS Mid-Atlantic, LLC. Fredericksburg, VA

Jones J. J., S. Ahlstedt, **B. Ostby**, B. Beaty, M. Pinder, N. Eckert, R. Butler, D. Hubbs, C. Walker, J. Schmerfeld, and R. Neves. 2009. Status and Trends of Freshwater Mussel Populations in the Clinch and Powell Rivers, Tennessee and Virginia. A summary report for the Clinch-Powell Clean Rivers Initiative, Spring Meeting, May 27-28, 2009, Abingdon, VA.

Ostby, B. J. K. and R. J. Neves. 2008. Annual Report 2008: A Qualitative Survey for Mussels in Lower Indian Creek: Follow-up Monitoring of the Route 460 Bridge Replacement Project. Virginia Department of Transportation. Richmond, VA.

Ostby, B. J. K. and R. J. Neves. 2007. An Evaluation of Substratum and Flow Preferences for Rare Freshwater Mussels in the Upper Tennessee River Drainage. Tennessee Valley Authority, Chattanooga, TN.

Ostby, B. J. K., M. A. Petty, and R. J. Neves. 2006. Plot Establishment for Monitoring *Alasmidonta varicosa* in the National Capital Region Network, Nation Park Service. Conservation Management Institute, Blacksburg, VA.

Ostby, B. J. K. and R. J. Neves. 2006. Assessment of a Sedimentation Event on Mussel Habitat in Indian Creek, Tazewell County, Virginia. U. S. Fish and Wildlife Service, Gloucester, VA.

Kopeny, M., L. Green, P. Angermeier, T. Wynn, P. Diplas, J. Little, M. Aust, C. Burcher, **B. Ostby**, M. Henderson, R. Zeckoski, J. Jessick, K. Greer, V. Singleton, and S. Bowler. 2005. Summary report supporting development of building blocks to prescribe ecological flows for the Rivanna River Watershed. The Nature Conservancy, Charlottesville, VA.

PRESENTATIONS

Ostby, B. and B. Beaty. 2021. Monitoring survival of federally endangered mussels relocated from pipeline crossing in the Clinch River, Virginia. Twelfth Biennial Freshwater Mollusk Conservation Society Symposium, Virtual Symposium, April 12-14, 2021.

- C. Carey, A. Phipps, J. Richard, **B. Ostby**, T. Lane, and J. Jones. 2019. Assessing a suspected mass mortality event of Pheasantshell (*Actinoaias pectorosa*) in the Clinch River using long-term monitoring data. Eleventh Biennial Freshwater Mollusk Conservation Society Symposium, San Antonio, TX, April 14-18, 2019.
- Ostby, B.**, T. Lane, S. Hanlon, M. Bradley, B. Beaty. 2015. Using occupancy approaches to monitor rare freshwater mussels in Virginia and Tennessee. Ninth Biennial Freshwater Mollusk Conservation Society Symposium and Seventy-first Annual UMRCC Meeting, St. Charles, Missouri, March 22-26, 2015.
- Ostby, B.**, P. Angermeier, M. Pinder. 2013. Semi-quantitative surveys of the freshwater mollusk assemblages in the Little River, Virginia. Eighth Biennial Freshwater Mollusk Conservation Society Symposium, Guntersville, Alabama, March 10-14, 2013.
- Watson, B., **B. Ostby**, C. Carey. 2013. Using mark-recapture sampling to assess populations of the endangered James Spiny mussel (*Pleurobema collina*). Eighth Biennial Freshwater Mollusk Conservation Society Symposium, Guntersville, Alabama, March 10-14, 2013.
- Lane, T., J. Jones, and **B. Ostby**. 2013. Long-term monitoring and demographic assessment of the freshwater mussel populations in the upper Clinch River, Tennessee. Eighth Biennial Freshwater Mollusk Conservation Society Symposium, Guntersville, Alabama, March 10-14, 2013.
- Hanlon, S., **B. Ostby**, and S. Fraley. 2013. Now you see them, now you don't: Applying occupancy modeling to monitor a rare and cryptic species. Eighth Biennial Freshwater Mollusk Conservation Society Symposium, Guntersville, Alabama, March 10-14, 2013.
- Ostby, B. J. K.**, J. Krstolic, and G. Johnson. 2011. A Multidisciplinary investigation of natural and anthropogenic factors affecting Clinch River Mollusk Assemblages. Seventh Biennial Symposium of the Freshwater Mussel Conservation Society, Louisville, Kentucky, April 12, 2011.
- Ostby, B. J. K.** and J. W. Jones. 2010. Annual monitoring of mussel assemblages in the Tennessee reach of the Clinch River. Report presented at the Annual Tennessee Rare Mussel Meeting, Cookeville, TN, December 8, 2010.
- Ostby, B. J. K.** and R. J. Neves. 2009. Testing habitat suitability models with mussel translocations. Sixth Biennial Symposium of the Freshwater Mussel Conservation Society, Baltimore, MD, April 22, 2009
- Ostby, B. J. K.** and R. J. Neves. 2007. Use of microhabitat patches by freshwater mussels in two tributaries of the Tennessee River System and relevance for tailwater management. Fifth Biennial Symposium of the Freshwater Mussel Conservation Society, Little Rock, AR, March 13, 2007.
- Ostby, B. J. K.** 2007. Does electrofishing affect short-term survival and physiological conditions of mussels? Poster presented at the Fifth Biennial Symposium of the Freshwater Mussel Conservation Society, Little Rock, AR, March 13, 2007.
- Ostby, B. J. K.** 2006. Habitat considerations for mussel re-establishments and translocations. Invited presentation for Strategies for Recovery and Protection of Freshwater Mussels in the Cumberlandian Region, Cookeville, TN, February 7, 2006.
- Ostby, B. J. K.** and R. J. Neves 2005. Characterization of low flow microhabitat requirements for freshwater mussels. Report presented at Tennessee Endangered Mollusk Meeting, Knoxville, TN, December 13, 2005.

Ostby, B. J. K., 2005. Use of mesohabitat and microhabitat patches by freshwater mussels in the Clinch River, Virginia and Tennessee. Fourth Biennial Symposium of the Freshwater Mussel Conservation Society, St. Paul, MN, May 17, 2005.

Ostby, B. J. K. & R. J. Neves. 2004. Characterization of suitable freshwater mussel habitat in the Upper Clinch River, Virginia. Paper presented at the 82nd Annual Meeting of the Virginia Academy of Science. Richmond, VA.

Ostby, B. J. K., and J. Eckblad. 2000. Preliminary findings from a survey of unionid mussel populations of the streams of the Iowa driftless region. Poster paper presented at the 32nd annual meeting of Mississippi River Research Consortium, La Crosse, WI. April 13, 2000.

AWARDED RESEARCH CONTRACTS AND GRANTS

Ostby, B. J. K. Ostby. 2021. Occupancy Survey of James Spiny mussel in Rocky Creek and Swift Run, Virginia. Virginia Department of Wildlife Resources, Henrico, VA. \$7,500

Carey, C. S. and **B. J. K. Ostby.** 2021. A semi-quantitative mussel survey of the Upper North Fork Holston River, Virginia. Virginia Department of Wildlife Resources, Henrico, VA. Cooperative project with Virginia Tech. \$25,000

Carey, C. S. and **B. J. K. Ostby.** 2021. A semi-quantitative mussel survey of the Little River, Virginia. Virginia Department of Wildlife Resources. Henrico, VA Cooperative project with Virginia Tech. \$42,000.

Ostby, B. J. K. Ostby. 2019. Surveys for James Spiny mussel (*Parvaspina collina*) in 1st and 2nd order impoundment tailwaters of the upper James River Drainage. Contract EP3009932. Virginia Department of Game and Inland Fisheries, Henrico, VA. Initial award \$6,000, renewed/expanded in 2020, \$3,000.

Carey, C. S. and **B. J. K. Ostby.** 2018. Essential monitoring in the Clinch and Powell needed to assess the status and distribution of federally listed freshwater mussel populations and evaluate long-term success of restoration efforts across the Upper Tennessee River Basin. U. S. Fish and Wildlife Service, Hadley, MA. Cooperative project with Virginia Tech. Initial award \$69,999; renewed in 2020 \$70,000

Carey, C. S. and **B. J. K. Ostby.** 2019. Survey for Yellow Lance (*Elliptio lanceolata*) in Rappahannock Management Unit, Virginia. Virginia Department of Wildlife Resources, Richmond, VA. Cooperative project with Virginia Tech. \$73,250

Ostby, B. J. K. and B. B. Beaty. 2015. Mussel Occupancy in Copper Creek. Contract 2016-15733. Virginia Department of Game and Inland Fisheries, Richmond, VA. \$24,000, plus \$8,000 cost-share by Daguna Consulting, LLC.

May, C. and **B. J. K. Ostby.** 2015. Quantifying Detection Probabilities and Source-Sink Dynamics for the Endangered James spiny mussel (*Pleurobema collina*). Virginia Department of Game and Inland Fisheries, Richmond, VA. \$24,280, plus \$13,074 cost-share by James Madison University.

Ostby, B. J. K. and B. B. Beaty. 2013. Conservation Plan for State-listed Freshwater Mussels of the Upper Tennessee River system in Virginia. Virginia Department of Game and Inland Fisheries, Richmond, VA. \$25,000, plus \$12,500 cost-share by Daguna Consulting.

Ostby, B. J. K. and P. L. Angermeier. 2013. Evaluation of streams for population expansion of the federally listed endangered purple bean (*Villosa perpurpurea*). U. S. Fish and Wildlife Service, Gloucester, VA. \$31,000

Ostby, B. J. K., T. Dickenson and B. Watson. 2012. Using Mark-Recapture Techniques to Estimate Population Parameters, Quantify Detection Probability, and Determine Factors Affecting both for the

Endangered James Spiny mussel. Virginia Department of Game and Inland Fisheries. Richmond, VA. \$30,000 annually; renewed in 2013, 2014, 2015, 2016, 2017, 2019

Ostby, B. J. K. and P. L. Angermeier. 2012. Occupancy Surveys and Modeling for *Villosa perpurpurea* in Beech Creek. U. S. Fish and Wildlife Service, Gloucester, VA. Initial \$25,000; renewed and expanded 2014 \$18,000

Ostby, B. J. K. and P. L. Angermeier. 2011. Semi-quantitative Freshwater Mussel Surveys in the Wards Creek, Rocky Creek, Buck Mountain Creek and Swift Run Sub-watersheds of the Rivanna River. The Nature Conservancy, Charlottesville, VA. \$17,000

Krstolic, J. L. and **B. J. K. Ostby**. 2011. An Evaluation of Freshwater Mussel Contaminant Body Burden Following 18-month *in situ* Exposure Experiments in the Clinch River, Virginia and Tennessee. U. S. Fish and Wildlife Service, Gloucester, VA. \$33,000

Ostby, B. J. K. and P. L. Angermeier. 2010. Survey of the Freshwater Mollusk Assemblage in the Little River, Virginia. Virginia Department of Game and Inland Fisheries. Richmond, VA. \$30,000

Ostby, B. J. K., R. J. Neves, and P. L. Angermeier. 2010. Freshwater Mussel Survey in the North Fork Holston River. For U. S. Fish and Wildlife Service, Gloucester, VA. \$10,000

Ostby, B. J. K. and R. J. Neves. 2009. Dissolved Oxygen Requirements for Freshwater Mussels Phase 1: Development of Test Systems and Experimental Protocols. U. S. Fish and Wildlife Service, Alabama Ecological Services Field Office, AL. \$60,000

Ostby, B. J. K. and P. L. Angermeier. 2009. Biological Monitoring and Geomorphological Characterization for the USGS Eastern Region Initiative on the Clinch. USGS Virginia Water Science Center, Richmond, VA. \$69,000

Ostby, B. J. K. and P. L. Angermeier. 2008. Reconnaissance Surveys for Native Mussel Habitat, James Spiny mussel (*Pleurobema collina*), and Other Protected Mussels in the Upper James River, Botetourt County, Virginia. U. S. Fish and Wildlife Service, Gloucester, VA. \$10,000

Ostby, B. J. K., K. M. Mattson, P. L. Angermeier, R. J. Neves. Original grant in 2005. Renewed 2007. An Evaluation of Substratum and Flow Preferences for Rare Freshwater Mussels in the Upper Tennessee River Drainage (TVA Contract No: 00014204). For Tennessee Valley Authority, Chattanooga, TN. \$300,000

PROFESSIONAL AFFILIATIONS

Freshwater Mollusk Conservation Society, member 2002 to present