

Joseph M. Smith

Research Associate

School of Aquatic and Fishery Sciences



UNIVERSITY of
WASHINGTON

Education

- 2012** PhD. School of Marine Sciences, Department of Environmental Conservation, Massachusetts Cooperative Fish and Wildlife Research Unit, University of Massachusetts, Amherst, MA 01003.
- 2005** M.S. Biology, Eastern Washington University, Department of Biology, Cheney, WA 99004.
- 2003** B.S. Biology, Minor Chemistry, Eastern Washington University, Department of Biology, Cheney, WA 99004.

Professional Research Experience

Research Associate 2013-Present (40 hr/week): University of Washington, School of Aquatic and Fishery Sciences. I am currently working with Dr. Thomas Quinn on the following projects:

- Examining horizontal and vertical movements of Chinook and Coho Salmon in Puget Sound using acoustic telemetry.
- Examining non-native fish predator ecology in the Sacramento-San Joaquin Delta.
- Determining how California drought affects Striped Bass distribution using otolith microchemistry, telemetry, and mark-recapture datasets. Delta Science Fellowship.

Research Associate 2012-2013 (40 hr/week): Postdoctoral fellow at the Kansas Cooperative Fish and Wildlife Research Unit in the Division of Biology at Kansas State University, Manhattan, KS 66506. I worked with Dr. Martha Mather on the following projects:

- Determined the effect of low-head dams on fish assemblage structure above and below dams.
- Examined the relationships between habitat heterogeneity and fish assemblages in rivers.
- Investigated Blue Catfish behavior using acoustic telemetry.
- Determined abiotic and biotic covariates of Blue Catfish distribution within a reservoir.

Research and Teaching Assistantship 2005-2011 (20-40 hr/week): School of Marine Sciences, Department of Environmental Conservation, University of Massachusetts, Amherst, MA, 01003. I worked with Dr. Martha Mather on the following projects:

- Worked with an interdisciplinary team (MassWildlife, USGS, Riverways, and The Nature Conservancy) to examine the influence of stream flow on Massachusetts fish assemblages.
- Conducted research on the movement of stocked alewife in the Ipswich River, MA and striped bass in Plum Island Sound, MA using telemetry.
- Examined the effect of temperature on Atlantic Salmon distribution in the Connecticut River.
- Developed and conducted my dissertation research which examined the relationships between beaver dams, habitat heterogeneity and fish assemblages in a stream network.

Research Assistantship 2000-2005 (20-40 hr/week): Department of Biology, Eastern Washington University, Cheney, WA 99004. I worked with Dr. A. Ross Black on the following projects:

- Performed limnological assessments of lakes in the Pend Oreille River Drainage for the Kalispel Department of Natural Resources, Kalispel Tribe of Indians, Usk, WA.
- Performed limnology experiments in Lake Roosevelt, WA.
- Used stable isotope analysis to examine food webs in Turnbull Pond, Cheney, WA.
- Developed and conducted my Master's thesis which examined carbon utilization in three eastern Washington reservoirs with different summer water drawdown levels.

Peer-Reviewed Publications

Publications = 17, First Author = 5

17. Kennedy, C.G., M.E. Mather, **J.M. Smith**. 2017. Quantifying site-specific physical heterogeneity within an estuarine seascape. *Estuaries and Coasts*. *In press*.
16. Arostegui, M.C., **J.M. Smith**, A.N. Kagley, D. Spilsbury-Pucci, K.L., Fresh, T.P. Quinn. 2017. Spatially clustered patterns and segregation of sub-adult Chinook Salmon within the Salish Sea. *Marine and Coastal Fisheries* 9:1-12.
15. Demetras, N.J., D.D. Huff, C.J. Michel, **J.M. Smith**, G.R. Cutter, S.A. Hayes, S.T. Lindley. 2016. Development of baited predation event recorders to quantify juvenile Chinook salmon predation in a river environment. *Fishery Bulletin* 114:179-185.
14. Kennedy, C., M.E. Mather, **J.M. Smith**, J.T. Finn, L. Deegan. 2016. Discontinuities concentrate mobile predators: Quantifying organism-environment interactions at a seascape scale. *Ecosphere*. *In Press*.
13. **Smith, J.M.**, K.L. Fresh, A.N. Kagley, T.P. Quinn. 2015. Ultrasonic telemetry reveals seasonal variation in depth distribution and diel vertical migrations of sub-adult Chinook and Coho salmon in Puget Sound. *Marine Ecology Progress Series* 532:227-242.
12. **Smith, J.M.**, S. Wells, M.E. Mather, R. Muth. 2014. Fish biodiversity sampling in stream ecosystems: a process for evaluating the appropriate types and amount of gear. *Aquatic Conservation: Marine and Freshwater Ecosystems* 24:338-350.
11. Mather, M.E., J.T. Finn, C.G. Kennedy, L.A. Deegan, **J.M. Smith**. 2013. What happens in an estuary doesn't stay there: Patterns of biotic connectivity resulting from long term ecological research. *Oceanography* 26:168-179.
10. **Smith, J.M.**, and M.E. Mather. 2013. Beaver dams maintain fish biodiversity by increasing habitat heterogeneity throughout a low-gradient stream network. *Freshwater Biology* 58:1523-1538.
9. Dodds, W.K., C.T. Robinson, E.E. Gaiser, G.J.A. Hansen, H. Powell, **J.M. Smith**, N.B. Morse, S.L. Johnson, S.V. Gregory, T. Bell, T.K. Kratz, W.H. McDowell. 2012. Surprises and insights from long-term aquatic datasets and experiments. *BioScience* 62:709-721.
8. Mather, M.E., H.J. Frank, **J.M. Smith**, R. Cormier, R.M. Muth, J.T. Finn. 2012. Assessing freshwater habitat of adult anadromous alewives using multiple approaches. *Marine and Coastal Fisheries* 4:188-200.
7. **Smith, J.M.**, and M.E. Mather. 2012. Using assemblage data in ecological indicators: A comparison and evaluation of commonly available statistical tools. *Ecological Indicators* 13:253-262.
6. Frank, H.J., M.E. Mather, **J.M. Smith**, R.M. Muth, J.T. Finn. 2011. Role of origin and release location in pre-spawning distribution and movements of anadromous alewife. *Fisheries Management and Ecology* 18:12-24.
5. **Smith, J.M.**, M.E. Mather, R.M. Muth, J.T. Finn, S.D. McCormick. 2009. Evaluation of a gastric radio tag insertion technique for anadromous river herring. *North American Journal of Fisheries Management* 29:367-377.
4. Frank, H.J., M.E. Mather, **J.M. Smith**, R.M. Muth, J.T. Finn, S.D. McCormick. 2009. What is "fallback"? metrics needed to assess telemetry tag effects on anadromous fish behavior. *Hydrobiologia* 635:237-249.
3. Frank, H.J., M.E. Mather, R.M. Muth, S.M. Pautzke, **J.M. Smith**, J.T. Finn. 2009. The Adopt-a-herring program as a fisheries conservation tool. *Fisheries* 34:466-507.
2. Mather, M.E., D.L. Parrish, C.A. Campbell, J.R. McMenemy, **J.M. Smith**. 2008. Summer temperature variation and implications for juvenile Atlantic salmon. *Hydrobiologia* 603:183-196.

- Jessen, B., J. Black, R. Cormier, A. Gabela, J. Murt, S. Pautzke, **J.M. Smith**, F. Juanes. 2006. Elliott A. Norse and Larry B. Crowder (eds): Review of "Marine conservation biology: The science of maintaining the sea's biodiversity". *Reviews in Fish Biology and Fisheries* 16:229-231.

Manuscripts in Review

Publications in review = 3

- Kagley, A.N., **J.M. Smith**, K.L. Fresh, K. Frick, T.P. Quinn. Movements of sub-adult Chinook salmon *Oncorhynchus tshawytscha* in Puget Sound, Washington, as indicated by hydroacoustic tracking. Submitted to *Transactions of the American Fisheries Society*.
- Gerber, K.M., M.E. Mather, **J.M. Smith**, Z. M. Peterson. Implanting telemetry tags in fish: A review of surgical and post-tagging evaluation methodologies with an example. Submitted to *Reviews in Fish Biology and Fisheries*.
- Hitchman, S.M., M.E. Mather, **J.M. Smith**, J.S. Fencl. A mosaic-based approach is needed to conserve biodiversity in disturbed freshwater ecosystems. Submitted to *Global Change Biology*.

Grants, Fellowships and Awards

Awarded \$676,967 as a PI or Co-PI

- 2016 **\$188,242** - Awarded **Delta Science Fellowship**. Project title: Synthesis of the effect of drought on the distribution and movement of a non-native predator (striped bass) in the Sacramento-San Joaquin River Delta.
- 2015 **\$484,225** - **California Department of Fish and Wildlife PSP**. Project title: Linking predation mortality to predator density and survival for out-migrating Chinook salmon and Steelhead in the lower San Joaquin River and South Delta.
- 2009 **\$500** - **Travel Award**. Awarded to attend the Ecological Society of America's First Millennium Conference: Water-Ecosystem Services, Drought, and Environmental Justice. Athens, GA.
- 2008 **\$600** - **Richard Cronin Fisheries Research Award**. Awarded for outstanding achievement for a graduate student in fisheries, Department of Natural Resources Conservation, University of Massachusetts, Amherst.
- 2005 **\$400** - **Travel award**. Biology Department, Eastern Washington University, to attend and present a paper at the Northwest Scientific Association conference.
- 2004 **\$500** - **Research Mini Grant**. Biology Department, Eastern Washington University, to fund mass spectrometry isotope analysis.
- 2002 **\$2,500** - **Turnbull Laboratory for Ecological Studies Research Award**. Stipend for undergraduate ecological research on the Turnbull National Wildlife Refuge. Research included stable isotope analysis of the Turnbull Lab Pond, which examined trophic position and carbon utilization of all aquatic invertebrates.

Submitted

- 2016 **\$439,888 requested** - **Proposition 1 Watershed Restoration & Ecosystem Restoration Grant Programs, California Department of Fish and Wildlife**. Project title: Finding endangered fish and their predators in the southern Delta using eDNA.

Graduate and Undergraduate Mentoring

Graduate students = 10, Undergraduate students = 5

Committee Member

Sean Hitchman PhD Candidate, Biology Division, Kansas State University (manuscript in review)

Graduate Student Mentorship

Megan Sabal PhD Student, University of California Santa Cruz (manuscript in prep)
Martin Arostegui M.S. Student, University of Washington (manuscript)
Robert Mapes M.S. Student, Kansas State University (manuscript in prep)
Ryland Taylor M.S. Student, Kansas State University (manuscript in prep)
Zach Peterson M.S. Student, Kansas State University (manuscript in review)
Kayla Gerber M.S. Student, Kansas State University (manuscript in review)
Jane Fencil M.S. Student, Kansas State University (manuscript in review)
Cristina Kennedy M.S. Student, University of Massachusetts – Amherst (manuscript)
Holly Frank M.S. Student, University of Massachusetts – Amherst (manuscript)

Undergraduate Student Mentorship

Zach Houghtaling Senior capstone project, University of Washington
Jeremy Axworthy Senior capstone project, University of Washington
Sarah Wells University of Massachusetts – Amherst (manuscript)
Roxann Cormier University of Massachusetts – Amherst (manuscript)
Judith Patterson National Science Foundation REU – Kansas State University

Invited Professional Presentations and Workshops

Invited presentations = 11

11. **Smith, J.M.** Examining the ecology and predation impacts of non-native fishes in the San Joaquin River, California. NOAA Monster Jam Seminar. Northwest Fisheries Science Center. January, 2017.
10. **Smith, J.M.** Alien vs Predator: Determining the factors that influence salmon predation in the Sacramento-San Joaquin Delta. Wildlife Science Seminar. School of Environmental and Forest Sciences, University of Washington. February, 2016.
9. **Smith, J.M.** Quantifying piscine predation of salmon smolts in the San Joaquin River. Watershed Program Meeting, Northwest Fisheries Science Center. December, 2014.
8. **Smith, J.M.** Quantifying density, salmon smolt predation, and movement of piscine predators in the San Joaquin River. Eco-Lunch Seminar. School of Aquatic and Fishery Sciences, University of Washington. October, 2014.
7. **Smith, J.M.** Revealing distribution patterns of fish populations on the move. Department Seminar, School of Aquatic and Fishery Sciences, University of Washington. April, 2014.
6. **Smith, J.M.** Beaver dams maintain fish biodiversity throughout a riverscape by increasing habitat heterogeneity. Department of Biological Sciences Seminar. Emporia State University. November, 2012.

5. **Smith, J.M.**, M.E. Mather, R.M. Muth, and J.T. Finn. Integrating hydrology, anthropogenic impacts, and biotic measures of ecosystem function to protect ecosystems from flow stress. Poster presented at the Ecological Society of America's First Millennium Conference: Water-Ecosystem Services, Drought, and Environmental Justice. Athens, GA, November, 2009.
4. **Smith, J. M.**, M.E. Mather, R.M. Muth, J.T. Finn, L.A. Deegan. Do beaver dams alter coastal ecosystem structure and function by changing fish species diversity, increasing fragmentation, and altering habitat? Poster presented at the Long Term Ecological Research – National All Scientists Meeting. Estes Park, CO. September, 2009.
3. **Smith, J.M.**, M.E. Mather, L.A. Deegan, J.T. Finn, and R.M. Muth. The function of discontinuities on fish community coalescence in the Ipswich River: Do human dams and beaver dams create fish habitat or fragment the watershed. Poster presented at the Plum Island Ecosystems Long Term Ecological Research All Scientists Meeting. Woods Hole, MA. April, 2009.
2. **Smith, J.M.**, M.E. Mather, J.T. Finn, R.M. Muth, and L.A. Deegan. Linking physical habitat and land use impacts to fish community characteristics to improve river and estuarine management and restoration. Poster presented at the Plum Island Ecosystems Long Term Ecological Research – NSF Site Review. Ipswich, MA. 2007.
1. **Smith, J.M.**, M.E. Mather, J.T. Finn, R.M. Muth, H.J. Frank, and L.A. Deegan. Using anadromous herring to evaluate river restoration: examining the links between anthropogenic impacts, coastal watershed function, human attitudes, and biotic integrity in the Ipswich River, MA. Poster presented at the Long Term Ecological Research - National All Scientists Meeting. Estes Park, CO. September, 2006.

Contributed Professional Presentations

Author = 37, Presenter = 19

37. **Smith, J.M.**, D. Huff, C. Michel, D. Demer, G. Cutter, S. Manugian, T. Quinn, S. Hayes. Quantifying the abundance, distribution, and predation of salmon by non-native fish predators in the San Joaquin River. Bay-Delta Science Conference. Sacramento, CA. November, 2016.
36. **Smith, J.M.**, T.P. Quinn. Examining the spatial and temporal distribution of striped bass within the delta in wet vs. dry years. Bay-Delta Science Conference. Sacramento, CA. November, 2016.
35. Sabal, M., C. Michel, **J.M. Smith**, A. Hampton, S. Hayes. Seasonal movements and distribution of Central Valley striped bass (*Morone saxatilis*). Bay-Delta Science Conference. Sacramento, CA. November, 2016.
34. **Smith, J.M.**, M. E. Mather, S.M. Hitchman. Operationalizing riverscapes. American Fisheries Society Annual Meeting. Kansas City, MO. August, 2016.
33. **Smith, J.M.**, M.E. Mather, K. Gerber. Seasonal and diel patterns of depth and temperature distribution of Blue Catfish in Milford Reservoir, KS. American Fisheries Society Annual Meeting. Kansas City, MO. August, 2016.
32. **Smith, J.M.**, C. Michel, D. Huff, S. Hayes, T. Quinn. Determining the factors that influence salmon predation in the Sacramento-San Joaquin Delta: Insights from sonic telemetry. Salish Sea Ecosystem Conference. Vancouver, BC, Canada. April 2016.
31. **Smith, J.M.**, S. Hayes, D. Huff, C. Michel, T. Quinn, M. Cane, G. Cutter, D. Demer. Quantifying factors that influence salmon smolt predation in the San Joaquin River. State of the San Francisco Estuary Conference. Oakland, CA. September, 2015.
30. Mapes, R., M.E. Mather, **J.M. Smith**, S.M. Hitchman, A. Earl and J. Romine. Is All Heterogeneity Created Equal? How Types of Habitat Heterogeneity Differentially Alter Distribution, Abundance, and Diets of Age-0 Largemouth Bass. American Fisheries Society Annual Meeting. Portland, OR. August, 2015.

29. Hitchman, S.M., M.E. Mather, **J.M. Smith** and J.S. Fencl. Are Riffles Keystone Habitats in a Low-Gradient Prairie Stream?; Implications for Riverscape Ecology and Stream Conservation. American Fisheries Society. Portland, OR. August, 2015.
28. **Smith, J.M.**, S. Hayes, D. Huff, C. Michel, D. Demer. Predator diet and movement behavior in the San Joaquin River: Are bass the only bad guys? Interagency Ecological Program for the San Francisco Estuary. Folsom, CA. March, 2015.
27. **Smith, J.M.**, M. Cane, G. Cutter, D. Demer, M. Gingras, S. Hayes, D. Huff, C. Michel. Using a predator density manipulation study to quantify salmon smolt predation in the San Joaquin River. Paper presented at the Bay-Delta Science Conference. Sacramento, CA. October, 2014.
26. **Smith, J.M.**, K. Fresh, A. Kagley, T. Quinn. Ultrasonic telemetry reveals seasonal variation in depth distribution and diel vertical migrations of sub-adult Chinook and coho salmon in Puget Sound. Paper presented at the Salish Sea Ecosystem Conference. Seattle, WA. April, 2014.
25. Kennedy, C.G., M.E. Mather, **J.M. Smith**. Habitat heterogeneity concentrates predators in the seascape: linking intermediate-scale estuarine habitat to striped bass distribution. Paper presented at the New England Estuarine Research Society meeting. Portland, ME. April, 2013.
24. **Smith, J.M.**, M.E. Mather, S.M. Hitchman, J.S. Fencl. Stopping biodiversity loss: An evaluation of metrics that quantify the composition of fish communities in aquatic ecosystems. Paper presented at the 73rd Midwest Fish and Wildlife Conference. Wichita, KS. December, 2012.
23. Peterson, Z., M. Mather, K. Gerber, **J. Smith**. Quantifying spatially-explicit patterns in a large reservoir: an approach for determining associations between a top predator and physical habitat. Poster presented at the 73rd Midwest Fish and Wildlife Conference. Wichita, KS. December, 2012.
22. Gerber, K., M. Mather, Z. Peterson, **J. Smith**. Where are those fish? Distribution and movement of a top predator (blue catfish) in a large, highly-variable Midwestern reservoir. Paper presented at the 73rd Midwest Fish and Wildlife Conference. Wichita, KS. December, 2012.
21. Mather, M.E., **J.M. Smith**, J. Gerken, J. Patterson. Can animal movement change the outcome of ecological interactions in a grassland ecosystem?: speculations and preliminary data on the role of a stream invertebrate. Poster presented at the Grassland in a Global Context at Konza Prairie Biological Station (KPBS). Manhattan, KS. September, 2011.
20. Kennedy, C., M. E. Mather, **J.M. Smith**, J.T. Finn, L. Deegan. The geomorphological complexity of a New England estuary and its role in shaping seasonal habitat use and site fidelity of striped bass on a foraging migration. Paper presented at the American Fisheries Society Annual Meeting. Seattle, WA. September, 2011.
19. **Smith, J.M.** The function of beaver dams across a low-gradient stream network: Habitat alteration and fish assemblage dynamics at the landscape scale. Paper presented at the Plum Island Ecosystems Long Term Research All Scientists Meeting, Woods Hole, MA. April, 2010.
18. Wells, S.P., **J.M. Smith**, M.E. Mather, R.M. Muth, and J.T. Finn. An approach to evaluating the combination of gear that representatively samples fish assemblages in small coastal streams. Paper presented at the Northeast Fish and Wildlife Conference, Newton, MA. April, 2010.
17. Cormier, R., H.J. Frank, M.E. Mather, R.M. Muth, **J.M. Smith**, and J.T. Finn. Relationship between movements of anadromous alewives and large- and small-scale habitat features. Paper presented at the Northeast Fish and Wildlife Conference, Newton, MA. April, 2010.
16. Frank, H.J., M.E. Mather, **J.M. Smith**, R.M. Muth, and J.T. Finn. Understanding prespawning behavior of individual anadromous alewives in order to interpret distributional patterns: Using tagging to improve the efficiency of coastal watershed restoration. Paper presented at the ICES Annual Science Conference, Berlin, Germany. September, 2009.
15. Kennedy, C.G., **J.M. Smith**, and M.E. Mather. Strategies for understanding striped bass and associated fish prey use of Plum Island Sound Estuary: a preliminary sampling proposal. Poster

- presented at the Plum Island Ecosystems Long Term Ecological Research All Scientists Meeting, Woods Hole, MA. April, 2009.
14. Frank, H.J., M.E. Mather, **J.M. Smith**, J. T. Finn, and R. M. Muth. Improving strategies for coastal river restoration: Tracking anadromous river herring in a coastal Massachusetts stream. Paper presented at the Annual Meeting of the Ecological Society of America, Milwaukee, WI. August, 2008.
 13. **Smith, J.M.**, M.E. Mather, J.T. Finn, L.A. Deegan, and R.M. Muth. Networks, connectivity and scale: linking watersheds to higher trophic levels. Paper presented at the Plum Island Ecosystems Long Term Ecological Research All Scientists Meeting. Woods Hole, MA. April, 2008.
 12. **Smith, J.M.**, M.E. Mather, R.M. Muth, and J.T. Finn. What science is needed for effective, sustainable, ecosystem-based management of estuaries? Paper presented at the Second Annual School of Marine Sciences Research Colloquium. Boston, MA. January, 2008.
 11. **Smith, J.M.**, Finn J.T, M.E. Mather, R.M. Muth, R.R. Zwick. Putting it all together: interdisciplinary integration through agent-based modeling. Presented at the biennial conference of the Estuarine Research Federation, Providence, RI. November, 2007.
 10. **Smith, J.M.**, M.E. Mather, and J.T. Finn. A roadmap for statistically evaluating fish-flow relationships using real world data. Paper presented at the Northeast Fish and Wildlife Conference. Mystic, CT. April, 2007.
 9. Frank, H.J., M.E. Mather, **J.M. Smith**, R.M. Muth, J.T. Finn, M. Armstrong, K. Ferry. Examining spawning behavior and habitat use of stocked river herring: a preliminary analysis of restoration efforts using radio telemetry. Paper presented at the American Fisheries Society Southern New England Chapter Winter Meeting. Old Lyme, CT. January, 2007.
 8. Frank, H.J., M.E. Mather, J.T. Finn, R.M. Muth, **J.M. Smith**, L.A. Deegan. Examining behavior and habitat use of spawning river herring in the Ipswich River. Poster presented at the Plum Island Ecosystems Long Term Ecological Research – NSF Site Review. Ipswich, MA. September, 2007.
 7. Burak, M.K., M.E. Mather, J.T. Finn, R.M. Muth, J. Kim, **J.M. Smith**, H.J. Frank. A research approach for monitoring river herring: perspectives of a starting graduate student. Poster presented at the Plum Island Ecosystems Long Term Ecological Research – NSF Site Review. Ipswich, MA. September, 2007.
 6. **Smith, J.M.**, K. Ferry, M.E. Mather, J.T. Finn, R.M. Muth, H.J. Frank. In search of “The Right Side of the Tracks”: identifying desirable habitat for river herring restoration. Paper presented at the American Fisheries Society Annual Meeting. Lake Placid, NY. September, 2006.
 5. Mather, M.E., J.T. Finn, R.M. Muth, K H. Ferry, H.J. Frank, **J.M. Smith**. 2006. Stopping the bleeding: a case study for managing estuarine fish in the face of multiple adverse human impacts. Invited Symposium: Death by a thousand cuts: Cumulative impacts of human activities in estuarine environments. Paper presented at the American Fisheries Society Annual Meeting, Lake Placid, NY, September, 2006.
 4. Mather, M.E., K.H. Ferry, B.J. Jessen, **J.M. Smith**, R.M. Muth, and J.T. Finn. Update of Ipswich river herring stocking. Paper presented at the Ipswich River Watershed Association 20th Anniversary Meeting. Fall, 2006.
 3. **Smith, J.M.**, and M.E. Mather. 2005. Effectiveness of indices of biotic integrity for diagnosing stream health: Implications for a stream flow-sensitive IBI. Paper presented at the Association of State Wetlands Managers. University of Massachusetts, Amherst, MA. November, 2005.
 2. **Smith, J.M.**, and A.R. Black. Examining draw-down significance and ontogenetic shifts of trophic position and energy utilization using stable isotope analysis in two eastern Washington reservoirs. Paper presented at the Northwest Scientific Association. Oregon State University, Corvallis, OR. March, 2005.

1. **Smith, J.M.**, and A.R. Black. Determining trophic position and energy utilization using stable isotope analysis in two eastern Washington reservoirs. Pacific Ecology and Evolution Conference. Central Washington University, Ellensburg, WA. February, 2005.

Outreach

NSF GK-12 field trip: Co-led field trip to Konza Prairie Biological Station for local high school students as a part of the NSF GK-12 program.

Flint Hills Discovery Center: Provided a video interview about the value of aquatic research which is on display at the Flint Hills Discovery Center, Manhattan, KS.

Teaching Experience

Guest Lecturer: Salmon and Society FISH 493, University of Alaska, Fairbanks. Instructor: Peter Westley. March 2016

Co-instructor: GEOG 840 (River Regimes), with Dr. Martha Mather and Dr. Melinda Daniels in the Division of Biology, Kansas State University, Manhattan, KS. January-May 2012.

Guest Lecturer: for Keith Gido, BIOL 433 (Introduction to Wildlife, Fisheries and Conservation Biology), Division of Biology, Kansas State University, Manhattan, KS. March, 2012.

Teaching Assistant: FOREST 492A (Verbal Communication) Department of Natural Resources Conservation, University of Massachusetts, Amherst, MA, 01003, September-December, 2008 and 2009.

Teaching Assistant: NRC 409 (Natural Resource Policy and Administration), Department of Natural Resources Conservation, University of Massachusetts, Amherst, MA, 01003, January-May, 2006 and 2007.

Teaching Assistant: BIOL 405 (Limnology), Department of Biology, Eastern Washington University, Cheney, WA 99004, March-June, 2005.

Teaching Assistant: BIOL 444 (Field Ecology), Department of Biology, Eastern Washington University, Cheney, WA 99004, March-June, 2004.

Teaching Assistant: BIOL 332 and 333 (Human Anatomy and Physiology I and II for Biology Majors), Biology Department, Eastern Washington University, Cheney, WA 99004, September-March, 2004 and 2005.

Peer Technical Reviewer

Reviewed 11 papers for 8 journals

<u>Journal</u>	<u>Years</u>
Fisheries Research	2016
Marine Ecology Progress Series	2015
Freshwater Science	2015
Ecology of Freshwater Fish	2014
Aquatic Living Resources	2012
Journal of Applied Ichthyology	2011
North American Journal of Fisheries Management	2009, 2011, 2012
Wetlands Ecology and Management	2009, 2013