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Education

Ph.D. in Forest Resources; University of Georgia, 12-93
M.S. in Statistics; University of Georgia, 3-93
M.S. in Fishery and Wildlife Biology; Colorado State University, 5-89
B.S. in Wildlife Biology; Colorado State University, 12-86

Positions Held

Research Biological Statistician, USGS, Leetown Science Center, Aquatic Ecology Lab, Kearneysville, WV 1993 to present
Lecturer, Department of Mathematics and Engineering and Institute for Environmental Studies, Shepherd University, Shepherdstown, WV Fall 1994-1998 and 2001
Biological Statistician, US Fish and Wildlife Service, Patuxent Wildlife Research Center, MD; 1991
Research Assistant, Savannah River Ecology Laboratory, University of Georgia, Aiken, SC; 1991

Adjunct Positions and Academic Committees

Adjunct Assistant Professor, Division of Forestry, Davis College of Agriculture, Forestry and Consumer Science, West Virginia University, Morgantown, WV
Graduate Committee for Alyssa Butler, M.S. Candidate, Auburn University (in progress)
Graduate Committee for Sheila Eyler, Ph.D. Candidate, West Virginia University (in progress)
Graduate Committee for Missy Braham, M.S. Candidate, West Virginia University (in progress)
Graduate Committee for Sherestha Saini, Ph.D. Candidate, New Jersey Institute of Technology (completed)
Co-chair, Graduate Committee for Penelope Pooler, Ph.D. Candidate in Department of Statistics, Virginia Tech (completed)

Publications and Presentations

Books, monographs, and chapters

- 1) **Smith, D. R.**, Y. Lei, C. A. Walter, and J. A. Young. 2012. Incorporating predicted species distribution in conventional and adaptive sampling designs. Pages 381-396 in R. A. Gitzen, *et al.* (ed.) Design and Analysis of Long-term Ecological Monitoring Studies. Cambridge
- 2) **Smith, D. R.**, M. J. Millard, and R. Carmichael. 2009. Comparative status and assessment of *Limulus polyphemus* with emphasis on the New England and Delaware Bay populations. Pages 361-386 In J. T. Tanacredi, M. L. Botton, and D. R. Smith, editors. Biology and conservation of Horseshoe Crabs. Springer, NY
- 3) Tanacredi, J. T., M. L. Botton, and **D. R. Smith**, editors. 2009. The Biology and Conservation of Horseshoe Crabs. Springer, NY.
- 4) Jackson, N. L., **D. R. Smith**, and K. F. Nordstrom. 2006. Application of geomorphology to assess and enhance beach habitat for horseshoe crabs. In D. Janelle, B. Warf, and K. Hansen, editors. WorldMinds: Geographical Perspectives on 100 Problems. Association of American Geographers. Washington DC.
- 5) **Smith, D. R.**, J. A. Brown, and N. C. H. Lo. 2004. Application of adaptive cluster sampling to biological populations. Pages 77-122 In W. L. Thompson, editor. Sampling rare or elusive species:

Concepts, designs, and techniques for estimating population parameters. Island Press, Covelo, CA. (This book won The Wildlife Society's 2006 Wildlife Publications Award for Outstanding Edited Book Category)

- 6) Strayer, D. L. and **Smith, D. R.** 2003. A guide to sampling freshwater mussel populations. American Fisheries Society Monograph No. 8

Publications in refereed journals or symposia

- 7) **Smith, D. R.**, C. Snyder, N. Hitt, and P. Geissler. (*in press*) Monitoring for threshold-dependent decisions. Ecological thresholds in natural resource management. Springer.
- 8) Snyder, C., N. P. Hitt, **D. R. Smith**, and J. Daily. (*in press*) Optimizing bioassessment decision thresholds using simulation techniques. Ecological thresholds in natural resource management. Springer.
- 9) Dryver, A. L., U. Netharn, and **D. R. Smith**. (*in press*) Partial systematic adaptive cluster sampling. *Environmetrics*
- 10) Daily, J. P., N. P. Hitt, **D. R. Smith**, and C. D. Snyder. 2012. Experimental and environmental factors affect spurious detection of ecological thresholds. *Ecology* 93:17-23.
- 11) Panahbehagh, B., **Smith, D.R.**, Salehi M., M., Hornbach, D.J. and Brown, J.A. (2011). Multi-species attributes as the condition for adaptive sampling of rare species using two-stage sequential sampling with an auxiliary variable. In Chan, F., Marinova, D. and Anderssen, R.S. (eds) MODSIM2011, 19th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2011, pp. 2093-2099. ISBN: 978-0-9872143-1-7
- 12) Brown, J. A., M. Salehi M., M. Moradi, B. Panahbehagh, and **D. R. Smith**. (2011). Adaptive and unequal probability survey designs for environmental management. In Chan, F., Marinova, D. and Anderssen, R.S. (eds) MODSIM2011, 19th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2011, pp.____ - _____. ISBN: 978-0-9872143-1-7
- 13) McGowan, C. P., J. E. Hines, J. D. Nichols, J. E. Lyons, **D. R. Smith**, P. W. Atkinson, N. A. Clark, M. Dey, P. M. Gonzalez, L. J. Niles, K. S. Kalasz, and W. Kendall. 2011. Linking red knot survival to the timing and abundance of horseshoe crab spawning in Delaware Bay. *Ecosphere* 2(6): art69
- 14) **Smith, D. R.**, N. L. Jackson, K. L. Nordstrom, R. G. Weber. 2011. Beach characteristics mitigate effects of onshore wind on horseshoe crab spawning: implications for matching with shorebird migration in Delaware Bay. *Animal Conservation* 14:575-584.
- 15) McGowan, C. P., **D. R. Smith**, J. A. Sweka, J. Martin, and J. D. Nichols. 2011. Multi-species modeling for adaptive management of horseshoe crabs and red knots in the Delaware Bay. *Natural Resource Modeling* 24:117-156.
- 16) **Smith, D. R.**, J. T. Rogala, B. R. Gray, S. J. Zigler, and T. J. Newton. 2011. Evaluation of single and two-stage adaptive sampling designs for estimation of density and abundance of freshwater mussels in a large river. *Rivers Research and Applications* 27:122-133.
- 17) Jackson, N. L., K. F. Nordstrom, S. Saini, and **D. R. Smith**. 2010. Effects of nourishment on the form and function of an estuarine beach. *Ecological Engineering* 36:1709-1718. doi:10.1016/j.ecoleng.2010.07.016
- 18) **Smith, D. R.**, L. J. Brousseau, M. T. Mandt, and M. J. Millard. 2010. Age and sex specific migration timing and frequency of horseshoe crab spawning in Delaware Bay: insights from a large-scale radio telemetry array. *Current Zoology* 56(5):563-574.

- 19) **Smith, D. R.**, B. R. Gray, T. J. Newton, and D. Nichols. 2010 Effect of imperfect detectability on adaptive and conventional sampling: simulated sampling of freshwater mussels in the Upper Mississippi River. *Environmental Monitoring and Assessment* 170:499-507.
- 20) Blomquist SM, Johnson TD, **Smith DR**, Call GP, Miller BN, Thurman WM, McFadden JE, Parkin MJ, Boomer GS. 2010. Structured decision-making and rapid prototyping to plan a management response to an invasive species. *Journal of Fish and Wildlife Management* 1(1):19–32;e1944–687X.doi:10.3996/JFWM-025
- 21) Jackson, N. L., K. F. Nordstrom, and **D. R. Smith**. 2010. Armoring of estuarine shorelines: geomorphic-biotic relationship in Delaware Bay. Proceedings of USACOE conference.
- 22) Salehi, M., M. Moradi, J. A. Brown, and **D. R. Smith**. 2010. Efficient estimators for adaptive stratified sequential sampling. *Journal of Statistical Computation and Simulation* 80:1163-1179.
- 23) Millard, M. J., **D. R. Smith**, J. Grazio, and E. Obert. 2009. Movements of brown bullheads in Presque Isle Bay, Lake Erie, Pennsylvania. *Journal of Great Lakes Research* 35: 613-319.
- 24) **Smith, D. R.**, M. T. Mandt, and P. D. M. Macdonald. 2009. Proximate causes of sexual size dimorphism in horseshoe crabs (*Limulus polyphemus*) of the Delaware Bay. *Journal of Shellfish Research* 28:405-417.
- 25) **Smith, D. R.**, E. M. Hallerman, M. J. Millard, J. A. Sweka, and R. G. Weber. 2009. An incomplete analysis: response to Niles et al. ‘Are harvest restrictions working?’. *Bioscience* 59:541.
- 26) Morrison, L. W., **D. R. Smith**, D. Nichols, and C. C. Young. 2008. Using computer simulations to evaluate sample design: an example with the Missouri bladderpod. *Population Ecology* 50:417-425
- 27) Diefenbach, D. R., E. S. Long, C. S. Rosenberry, B. D. Wallingford, and **D. R. Smith**. 2008. Modeling the distribution of dispersal distances in male white-tailed deer. *Journal of Wildlife Management* 72:1296-1303.
- 28) Brown, J. A., M. M. Salehi, M. Moradi, G. Bell, and **D. R. Smith**. 2008. Adaptive two-stage sequential sampling. *Population Ecology* 50:239–245.
- 29) Jackson, N. L., **D. R. Smith**, and K. F. Nordstrom. 2008. Physical and chemical changes in the foreshore of an estuarine beach: implications for viability and development of horseshoe crab (*Limulus polyphemus*) eggs. *Marine Ecology Progress Series*.355:209-218.
- 30) Blazer, V. S., L. Iwanowicz, D. D. Iwanowicz, **D. R. Smith**, J. A. Young, S. W. Foster, and S. J. Reeser 2007. Intersex (testicular oocytes) in smallmouth bass *Micropterus dolomieu* from the Potomac River and selected nearby drainages. *Journal of Aquatic Animal Health* 19:242-253.
- 31) **Smith, D. R.** 2007. Effect of horseshoe crab spawning density on nest disturbance and exhumation of eggs: a simulation study. *Estuaries and Coasts* 30(2):287-295.
- 32) Sweka, J. A., **D. R. Smith**, and M. J. Millard. 2007. An age-structured population model for horseshoe crabs in the Delaware Bay area to assess harvest and egg availability for shorebirds. *Estuaries and Coasts* 30(2):277-286.
- 33) Jackson, N.L., **D.R. Smith**, R. Tiyyarattanachi, and K.F. Nordstrom.2007. Evaluation of a small sediment nourishment on an estuarine beach to enhance habitat suitability for horseshoe crabs. *Geomorphology* 89:172-185.
- 34) Welsh, S. A., **D. R. Smith**, R. W. Laney, and R. C. Tipton. 2007. Tag-based estimates of annual fishing mortality of a mixed coastal stock of Atlantic striped bass. *Transactions of the American Fisheries Society* 136:104-113.
- 35) **Smith, D. R.**, and S. F. Michels. 2006. Seeing the elephant: importance of spatial and temporal coverage in a large-scale volunteer-based program to monitor horseshoe crabs. *Fisheries* 31(10):485-491.

- 36) Nordstrom, K. F., N. L. Jackson, **D. R. Smith**, and R. G. Weber. 2006. Transport of horseshoe crab eggs by waves and swash on an estuarine beach: implications for foraging shorebirds. *Estuarine Coastal and Shelf Science*. 70:438-448.
- 37) **Smith, D. R.** 2006. Survey design for detecting rare freshwater mussels. *Journal of North American Benthological Society* 25(3):701-711.
- 38) **Smith, D. R.**, M. J. Millard, S. Eyler. 2006. Abundance of adult horseshoe crabs in Delaware Bay estimated from a large-scale mark-recapture study. *Fishery Bulletin* 104(3):456-464.
- 39) Pooler, P. S. and **D. R. Smith**. 2005. Optimal sampling design for estimating spatial distribution and abundance of a freshwater mussel population. *Journal of North American Benthological Society* 24(3):525-537.
- 40) Villella, R. F. and **D. R. Smith**. 2005. Two-phase sampling to estimate river-wide populations of freshwater mussels. *Journal of North American Benthological Society* 24(2):357-368.
- 41) Jackson, N.L., K.F. Nordstrom, and **D.R. Smith**. 2005. Influence of waves and horseshoe crab spawning on beach morphology and sediment characteristics on a sandy estuarine beach, Delaware Bay, New Jersey, USA. *Sedimentology*. 52:1097-1108.
- 42) Jackson, N.L., **D.R. Smith**, and K.F. Nordstrom. 2005. Comparison of sediment characteristics on nourished and un-nourished estuarine beaches in Delaware Bay, New Jersey. *Zeitschrift fur Geomorphologie Suppl* 141: 31-45.
- 43) Salehi, M. M. and **Smith, D. R.** 2005. Two-stage sequential sampling: a neighborhood-free adaptive sampling procedure. *Journal of Agricultural, Biological, and Environmental Statistics* 10:84-103.
- 44) **Smith, D. R.** 2005. The life and times of a living fossil: review of "The American Horseshoe Crab". *Bioscience* 55:180-182.
- 45) Brousseau, L. J., M. Sclafani, **D. R. Smith**, and D. B. Carter. 2004. Acoustic and radio tracking horseshoe crabs (*Limulus polyphemus*) to assess spawning behavior and subtidal habitat use in Delaware Bay. *North American Journal of Fisheries Management* 24:1376-1384.
- 46) Densmore, C., C. Ottinger, V. Blazer, L. Iwanowicz, and **D. R. Smith**. 2004. Immunomodulation and disease resistance in post-yearling rainbow trout (*Oncorhynchus mykiss*) infected with *Myxobolus cerebralis*, the causative agent of whirling disease. *Journal of Aquatic Animal Health*
- 47) Villella, R. F., **D. R. Smith**, and D. P. Lemarie. 2004. Estimating survival and recruitment in a freshwater mussel population using mark-recapture techniques. *American Midland Naturalist* 151:114-133.
- 48) Pooler, P. S., **D. R. Smith**, R. E. Loveland, M. L. Botton, and S. F. Michels. 2003. Assessment of sampling methods to estimate horseshoe crab (*Limulus polyphemus*) egg density in Delaware Bay. *Fisheries Bulletin* 101(3):698-703.
- 49) Ross, R. M., R. M. Bennett, C. S. Snyder, J. A. Young, **D. R. Smith**, and D. P. Lemarie. 2003. Influence of eastern hemlock (*Tsuga canadensis* L.) on fish community structure and function in headwater streams of the Delaware River basin. *Ecology of Freshwater Fish* 12:60-65.
- 50) Blazer, V. S., T. B. Waldrop, W. B. Schill, C. L. Densmore, and **D. R. Smith**. 2003. Effects of water temperature and substrate type on spore production and release of eastern Tubifex tubifex worms infected with Myxobolus cerebralis. *Journal of Parasitology* 89:21-26.
- 51) **Smith, D. R.**, R. F. Villella, and D. P. Lemarié. 2003. Application of adaptive cluster sampling to low-density populations of freshwater mussels. *Environmental and Ecological Statistics* 10:7-15.
- 52) Jackson, N. L., K. F. Nordstrom, and **D. R. Smith**. 2002. Geomorphic – biotic interactions on beach foreshores in estuaries. *Proceedings of the International Coastal Symposium (ICS 2002)*, *Journal of Coastal Research Special Issue* 36:414-424.
- 53) **Smith, D. R.**, P. S. Pooler, R. E. Loveland, M. L. Botton, S. F. Michels, R. G. Weber, and D. B. Carter. 2002. Horseshoe crab (Limulus polyphemus) reproductive activity on Delaware Bay

- beaches: interaction with beach characteristics. *Journal of Coastal Research* 18:730-740.
Corrigendum in: *Journal of Coastal Research* 20:357
- 54) Young, J. A., **D. R. Smith**, C. S. Snyder, and D. P. Lemarié. 2002. A landscape-based paired-site sampling design to assess biodiversity loss from eastern hemlock decline. *Environmental Monitoring and Assessment* 76:167-183.
- 55) Snyder, C. S., J. A. Young, D. P. Lemarié, and **D. R. Smith**. 2002. Influence of eastern hemlock on aquatic biodiversity in headwater streams. *Canadian Journal of Fisheries and Aquatic Sciences* 59(2):262-275.
- 56) **Smith, D. R.**, P. S. Pooler, B. L. Swan, S. Michels, W. R. Hall, P. Himchak, and M. Millard. 2002. Spatial and temporal distribution of horseshoe crab (*Limulus polyphemus*) spawning in Delaware Bay: implications for monitoring. *Estuaries* 25(1):115-125.
- 57) **Smith, D. R.**, R. F. Vilella, and D. P. Lemarié. 2001. Survey protocol for assessment of endangered freshwater mussels in the Allegheny River. *Journal of North American Benthological Society* 20(1):118-132.
- 58) **Smith, D. R.**, R. F. Vilella, D. P. Lemarié, and S. von Oettingen. 2001. How much excavation is needed to monitor freshwater mussels? Pages 203-218. *In* Tankersley, R. A., D.I. Warmolts, G.T. Watters, B.J. Armitage, P.D. Johnson, and R.S. Butler (editors). *Freshwater Mollusk Symposium Proceedings*. Ohio Biological Survey, Columbus, Ohio. xxi + 274 pp.
- 59) Lemarié, D. P., **D. R. Smith**, R. F. Vilella, and D. A. Weller. 2000. Evaluation of tag types and adhesives for marking freshwater mussels (Mollusca:Unionidae). *Journal of Shellfish Research* 19:247-250.
- 60) **Smith, D. R.**, K. P. Burnham, D. M. Kahn, X. He, C. J. Goshorn, K. A. Hattala, and A. Kahnle. 2000. Bias in survival estimates from tag-recovery models where catch-and-release is common, with an example from Atlantic striped bass. *Canadian Journal of Fisheries and Aquatic Sciences* 57:886-897.
- 61) Gerard, P. D., **D. R. Smith**, and G. Weerakkody. 1998. The limits of retrospective power analysis. *Journal of Wildlife Management* 62:801-807.
- 62) Watten, B. J., **D. R. Smith**, and W. J. Ridge. 1998. Continuous monitoring of dissolved oxygen and total dissolved gas pressure based on head-space partial pressures. *Journal of the World Aquaculture Society* 28:316-333.
- 63) Johnson, J. H., R. M. Ross, and **D. R. Smith**. 1997. Evidence of secondary consumption of invertebrate prey by double-crested cormorants. *Journal of the Colonial Waterbird Society* 20:547-551.
- 64) Cipriano, R. C., L. A. Ford, **D. R. Smith**, J. H. Schachte, and C. J. Petrie. 1997. Differences in detection of *Aeromonas salmonicida* among covertly infected salmonid fishes by the Stress Induced Furunculosis test and culture-based assays. *Journal of Aquatic Animal Health* 9:108-113.
- 65) Starliper, C. E., **D. R. Smith**, and T. Shatzer. 1997. Virulence of *Renibacterium salmoniarum* to Salmonids. *Journal of Aquatic Animal Health* 9:1-7.
- 66) **Smith, D. R.** 1996. Improved access to software published in the *Wildlife Society Bulletin*. *Wildlife Society Bulletin* 24:339.
- 67) **Smith, D. R.**, M. J. Conroy, and D. H. Brakhage. 1995. Efficiency of adaptive cluster sampling for estimating density of wintering waterfowl. *Biometrics* 51:777-788.
- 68) **Smith, D. R.**, K. J. Reinecke, M. J. Conroy, M. W. Brown, and J. R. Nassar. 1995. Factors affecting visibility rate in waterfowl surveys in the Mississippi Alluvial Valley. *Journal of Wildlife Management* 59:515-527.
- 69) Dawson, D. K., **D. R. Smith**, and C. S. Robbins. 1995. Point count length and detection of forest neotropical birds. Pages 35-43 *In* *Monitoring bird populations by point counts*. C. J. Ralph, J. R. Sauer, and S. Droege, editors. USDA Forest Service General Technical Report PSW-GTR-149.

- 70) Kremetz, D. G., J. T. Seginak, **D. R. Smith**, and G. W. Pendleton. 1994. Survival rates of American woodcock wintering along the Atlantic Coast. *Journal of Wildlife Management* 58:147-155.
- 71) Conroy, M. J. and **D. R. Smith**. 1994. Designing large-scale surveys of wildlife abundance and diversity using statistical sampling principles. *Transactions of the 59th North American Wildlife and Natural Resources Conference* 59:159-169.
- 72) **Smith, D. R.**, D. R. Diefenbach, and M. J. Conroy. 1992. Effect of density-dependent harvest rates on inferences about compensatory mortality. Pages 676-686 *In Wildlife 2001: Populations*. D. R. McCullough and R. H. Barrett, editors. Elsevier Science Publishers LTD, England.
- 73) **Smith, D. R.**, and J. F. Smeltzer. 1991. Occurrence of fishing without a license on the Cache la Poudre River, Colorado. *North American Journal of Fisheries Management* 11:109-112.
- 74) **Smith, D. R.**, D. R. Anderson, and J. F. Smeltzer. 1989. Assessment of the violation simulation method. *Wildlife Society Bulletin* 17:179-184.
- 75) **Smith, D. R.**, and D. R. Anderson. 1987. Effects of lengthy ringing periods on estimators of annual survival. *Acta Ornithologica* 23:69-76.

Manuscripts in prep or submitted

- Smith, D. R., M. Eaton, J. Sweka, R. Anderson, N. Welte, C. Urban, J. Arway, T. Zawisa, T. Watters, D. Crabtree, M. Bartron, T. Wagner, D. Garst, and R. Evans. Structured decision making for relocation of northern riffleshell (*Epioblasma torulosa rangiana*) for species recovery. Structured decision making in natural resources.
- Hitt, N. P., D. R. Smith, C. D. Snyder, and J. P. Daily. Rare taxa affect precision and responsiveness tradeoffs in stream bioassessment. (pending submission)
- Salehi, M., B. Panahbehagh, A. Parvardeh, D. R. Smith, and Y. Lei. Regression-type estimators for adaptive two-stage sequential sampling (submitted to JEES)
- McGowan, C. P., D. R. Smith, and J. E. Lyons. Developing consensus objectives with multiple stakeholders: adaptive management of horseshoe crabs and red knots in Delaware Bay (pending submission)

Technical reports or nonrefereed publications

- Hitt, N. P., D. R. Smith, P. Roth, J. Brodnicki, T. Casilio, T. Gagnolet, J. Hyland, M. Kowalski, K. Maloney, J. V. Mead, J. Piekara, D. Yeager, M. A. Larson, D. C. Brewer, and M. C. Runge. 2011. Monitoring Marcellus shale development in the Appalachian Landscape Conservation Cooperative. A Case Study from the Structured Decision Making Workshop, Sept 2011, USFWS NCTC, Shepherdstown, WV
- Grant, E. H. C., D. R. Smith, J. Gannon, J. Wofford, T. Dean, A. Brand, R. Wiederholt, S. DeWekker, T. Lee, D. C. Brewer, and M. C. Runge. 2011. Management and monitoring of an endangered high-elevation salamander under future climate change. A Case Study from the Structured Decision Making Workshop, Jan 2011, USFWS NCTC, Shepherdstown, WV
- Runge, M.C., Bean, Ellen, Smith, D.R., and Kokos, Sonja, 2011, Non-native fish control below Glen Canyon Dam—Report from a structured decision-making project: U.S. Geological Survey Open-File Report 2011–1012, 74 p
- McGowan, C. P., D. R. Smith, J. D. Nichols, J. Martin, J. A. Sweka, J. E. Lyons, L. J. Niles, K. Kalasz, R. Wong, J. Brust, M. Davis. 2009. A framework for the adaptive management of horseshoe crab harvests in the Delaware Bay constrained by Red Knot conservation. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.
- ASMFC Horseshoe Crab Stock Assessment Subcommittee (D. R. Smith, chair). 2009. Horseshoe crab 2009 stock assessment report. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.

- Smith, D. R. 2009. Structured decision making workshop for Virginia aquatic species specific protective measures: summary report. 22-24 Sept 2009, Lebanon, VA
- Blomquist, S., T. Johnson, D. Smith, M. Parkin, J. McFadden, S. Boomer, G. Call, B. Miller, and M. Thurman. 2009. Planning for potential threats to mature riparian forests: invasion of hemlock woolly adelgid in the Northern Cumberlands. A Case Study from the Structured Decision Making Workshop, 10-14 Aug 2009, National Conservation Training Center, Shepherdstown, WV, USA
- Smith, D., and M. Eaton. 2009. Structured decision making workshop on management of northern riffleshell (*Epioblasma torulosa rangiana*) in the Allegheny River for species recovery: summary report 12-14 May 2009, Bellefonte, PA
- Smith, D. R., D. J. Rogala, B. Gray, S. Zigler, and T. Newton. 2009. Evaluation of single and two-stage adaptive sampling designs for estimation of density and abundance of freshwater mussels in the Upper Mississippi River. LTRMP Completion Report, Upper Mississippi Ecological Science Center, La Crosse, WI
- Patronski, T. C. Charbonneau, P. Dryer, J. Cochrane, D. R. Smith, A. Ania, C. Deloria, C. Kaye. 2009. Fish passage and stream barrier management in the Bad River watershed in northern Wisconsin. A Case Study from the Structured Decision Making Workshop, 8-12 Dec 2008, National Conservation Training Center, Shepherdstown, WV, USA
- Welsh, S. A., D. R. Smith, S. Eyster, J. L. Zimmerman, M. T. Mandt. 2009. Migration of silver-phase and yellow-phase American eels in relation to hydroelectric dams on the Shenandoah River. Phase I – Final Report to WV Department of Natural Resources, Elkins, WV.
- Breese, G., D. Smith, J. Nichols, J. Lyons, A. Hecht, N. Clark, S. Michels, M. Millard, A. Scherer, B. Spear, D. C. Brewer, A. M. Starfield, M. C. Runge. 2007. Application of structure decision making to multi-species management of the horseshoe crab and shorebird populations in Delaware Bay. A Case Study from the Structured Decision Making Workshop, 9-13 July 2007, National Conservation Training Center, Shepherdstown, WV, USA
- Smith, D. R., and D. Nichols. 2006. Evaluating the effect of imperfect detectability on adaptive sampling: a simulation study based on mussel populations in Pool 10 of the Mississippi River. Report to UMESC Director Funds Program.
- Nichols, D., and D. Smith. 2006. User's manual for program SAMPLE. Report to USGS National Park Monitoring Program.
- Smith, D. R., J. A. Young, and F. van Manen. 2006. Incorporating habitat model predictions into an adaptive sampling design to increase species detection. Report to USGS National Park Monitoring Program.
- Smith, D. R., D. Nichols, and P. Young. 2006. Sampling recommendations for the Missouri Bladderpod (*Lesquerella filiformis*): Report to the Heartland I&M Network of the National Park Service.
- Smith, D. R. 2006. Understanding horseshoe crab spawning activity in Delaware Bay. Estuary News 16(3):4-5.
- Michels, S., D. Smith, and S. Bennett. 2006. Horseshoe crab spawning activity in Delaware Bay 1999-2005. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee, Washington DC.
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- Smith, D. R. 2004. Mark-recapture estimates of the abundance of adult horseshoe crabs in Delaware Bay during 28 May to 2 June 2003. Report to the ASMFC Horseshoe Crab Technical Committee
- Smith, D. R., N. L. Jackson, S. Love, K. Nordstrom, R. Weber, and D. Carter. 2002. Beach nourishment on Delaware Bay beaches to restore habitat for horseshoe crabs spawning and shorebird foraging. Report to The Nature Conservancy, Delaware Bayshores Office, Wilmington, DE.

- Villella, R. F. and D. R. Smith. 2002. Survey of freshwater mussels within the direct and indirect areas of impact at Kennerdell Bridge S. R. 3008, Section B00. Report to the Pennsylvania Department of Transportation, District 1-0, Oil City, PA.
- Smith, D.R. and S. Bennett. 2002. Horseshoe crab spawning activity in Delaware Bay: a preliminary report on 2001 and a comparison from 1999 to 2001. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.
- Smith, D. R. 2002. User's guide to Mussel Estimation Program. Available for download at <http://www.lsc.usgs.gov/aeb/2068/index.asp>
- Smith, D.R., M.J. Millard, and S. Bennett. 2001. Horseshoe crab spawning activity in Delaware Bay: 1999 – 2000. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.
- Millard, M.J., D.R. Smith, S. Michels, J. Brust, and J. Berkson. 2000. Stock assessment of Atlantic coast horseshoe crabs: a proposed framework. Horseshoe Crab Stock Assessment Committee, Report to the Atlantic States Marine Fisheries Commission, Washington, D.C.
- Lemarie, D. P., J. A. Young, C. D. Snyder, R. M. Ross, D. R. Smith, and R. M. Bennett. 1999. Relationships of eastern hemlock (*Tsuga canadensis*) to the ecology of small streams. Proceedings: Symposium on Sustainable Management of Hemlock Ecosystems in Eastern North America. U.S. Forest service General Technical Report NE-267: 182-183.
- Smith, D. R. 1999. Cooperative striped bass tagging program. Pages 18-19. *In* Atlantic States Marine Fisheries Commission Special Report No. 67.
- Waldrop, T., V. Blazer, D. Smith, B. Schill, and C. Densmore. 1999. Influence of temperature and substrate on infection rate, triactinomyxon production, and release duration from eastern tubifex worms infected with *Myxobolus cerebralis*. Pages 251-255 *In* 5th Annual Whirling Disease Symposium: Research and Management Perspectives, Holiday Inn Parkside, Missoula, Montana. 18-20 February 1999. Whirling Disease Foundation, Bozeman, Montana. Conference Paper.
- Goshorn, C., D. R. Smith, B. Rodgers, L. Warner, and H. Hornick. 1999. Estimates of the 1997 striped bass rate of fishing mortality in Chesapeake Bay. Report to the Atlantic States Marine Fisheries Commission Striped Bass Stock Assessment Committee.
- Hattala, K. A., A. W. Kahnle, D. R. Smith, R. V. Jesien, and V. Wharton. 1998. Total mortality, population size, and exploitation rates of American shad in the Hudson River Estuary, New York. Report to the Atlantic States Marine Fisheries Commission.
- Smith, D. R., and X. He. 1998. An overview of methods to estimate annual mortality of Atlantic striped bass from tag-recovery data. *In* Source Document to Amendment 5 to the Interstate Fishery Management Plan for Atlantic Striped Bass. Atlantic States Marine Fisheries Commission, Fishery Management Report No. 34.
- He, X., D. R. Smith, C. J. Goshorn, K. Hattala, A. Kahnle, and T. McCrobie. 1997. Estimated survival rates of adult striped bass along Atlantic coast from 1988 to 1996: preliminary results. Report to the Atlantic States Marine Fisheries Commission Striped Bass Stock Assessment Committee.
- Hebert, K. P., D. R. Smith, and P. W. Jones. 1997. Estimates of the 1995 striped bass fishing mortality in the Chesapeake Bay. Report to the Atlantic States Marine Fisheries Commission Striped Bass Stock Assessment Committee.
- Smith, D. R. 1996. Annual survival of Albemarle Sound striped bass. Report to the Atlantic States Marine Fisheries Commission Striped Bass Stock Assessment Committee.
- Smith, D. R. 1995. Estimating hatchery contribution of striped bass using log-linear modeling. Pages 90-91 *in* H. F. Upton, ed. Proceedings of a workshop on the striped bass binary coded wire tag recovery program. Special Report No. 43 of the Atlantic States Marine Fisheries Commission.
- Young-Dubovsky, C., G. R. Shepherd, D. R. Smith, and J. Field. 1995. Striped bass research study report for 1994. U.S. Dept. of Interior and U.S. Dept. of Commerce, Washington, DC. 38pp.

Smith, D. R., D. R. Anderson, and J. F. Smeltzer. 1990. Use of randomized response to study fishing without a license. *Human Dimensions in Wildlife Newsletter* 9(2):23-25.

Presentations

- Smith, D. R. 2011 Comparative methods for assessment of horseshoe crab populations. International Workshop on Science and Conservation of Asian Horseshoe Crabs, Hong Kong. [INVITED]
- Millard, M. J., and D. R. Smith. 2011 Adaptive management of horseshoe crab populations in the face of multiple objectives. International Workshop on Science and Conservation of Asian Horseshoe Crabs, Hong Kong. [INVITED]
- Smith, D. R. 2011 Introduction to adaptive sampling and incorporating predicted species distribution in conventional and adaptive sampling designs. Auburn University School of Forestry and Wildlife Sciences Seminar Series, Auburn, AL [INVITED]
- Eyler, S. M., S. A. Welsh, D. R. Smith, and M. T. Mandt. 2011. Silver eel migration and mortality associated with five hydroelectric dams on the Shenandoah River. Workshop on Eel Passage Technologies, Gloucester, MA.
- Smith, D. R. 2011. Adaptive management of horseshoe crabs in Delaware Bay: linking harvest to shorebird conservation. US Fish and Wildlife Service Region 5 Science Seminar Series (Webinar) [INVITED]
- Smith, D. R., N. L. Jackson, K. F. Nordstrom, and P. S. Pooler. 2011. Hierarchical selection of horseshoe crab spawning habitat: a sandy beach is the last thing on their ganglia. Delaware Estuary Science and Environmental Summit, Cape May, NJ
- Smith, D. R. 2011. Monitoring for fish and wildlife management. US Fish and Wildlife Service Northeast Region Biologists Conference, Baltimore, MD [INVITED]
- Smith, D. R. 2011. Role of science in policy: past, present, and future. Leetown Science Center Workshop on Understanding, Measuring, and Forecasting Ecosystem Services. Leetown, WV [INVITED]
- Mandt, M. T., S. M. Eyler, S. A. Welsh, and D. R. Smith. 2011. Combining aerial and underwater radio-telemetry antennas to monitor hydroelectric-dam passage by migrating American eels in the Shenandoah River. WV Chapter of the American Fisheries Society, Cacapon, WV.
- Smith, D. R., C. S. Snyder, N. P. Hitt, J. Daily. 2011. Utility values and simulation to optimize bioassessment designs. George Wright Society, New Orleans [INVITED]
- Smith, D., C. McGowan, J. Nichols, J. Martin, J. Sweka, J. Lyons, L. Niles, K. Kalasz, R. Wong, J. Brust, and M. Davis. 2010. Adaptive management of horseshoe crabs and red knots in Delaware Bay. American Fisheries Society 140th meeting in Pittsburgh, PA [INVITED]
- Eyler, S. M., S. A. Welsh, D. R. Smith, and M. T. Mandt. 2010. Silver eel migration and mortality associated with five hydroelectric dams on the Shenandoah River. American Fisheries Society 140th meeting in Pittsburgh, PA
- Welsh, S. A., D. R. Smith, and M. T. Mandt. 2010. Upstream migration of the American eel in the Shenandoah River, upper Potomac River drainage. American Fisheries Society 140th meeting in Pittsburgh, PA
- McGowan, C.P., J.D. Nichols, and D.R. Smith. 2010 Multispecies adaptive management in the Delaware Bay. March 2010. Adaptive Management Conference Series, Gainesville, Florida. [INVITED]
- Smith, D. R. 2009. Ecology and management of horseshoe crabs in Delaware Bay. Frederick Bird Club, Frederick, MD [INVITED]
- Daily, J. P., N. P. Hitt, D. R. Smith, and C. D. Snyder. 2010. Effect of sample size on threshold detection in freshwater bioassessment. North American Benthological Society 58th Annual Meeting, Santa Fe, NM.

- Snyder, C. S., N. P. Hitt, and D. R. Smith 2009. Combining thresholds and tipping points to optimize watershed monitoring programs. Catchment Science: Interactions of Hydrology, Biology & Geochemistry. Gordon Research Conferences, Andover, NH.
- Smith, D. R., J. T. Rogala, B. R. Gray, S. J. Zigler, and T. J. Newton. 2009. Evaluation of single and two-stage adaptive sampling designs for estimation of density and abundance of freshwater mussels in a large river. North American Benthological Society 57th Annual Meeting, Grand Rapids, Michigan
- Hitt, N. P., D. R. Smith, C. S. Snyder. 2009. Evaluating thresholds in stream macroinvertebrate community responses to stress. North American Benthological Society 57th Annual Meeting, Grand Rapids, Michigan
- Wicklow, B. J., D. R. Smith, K. Flanery, and S. von Oettingen. 2009. Translocation and monitoring of the brook floater, *Aalasmidonta varicosa*, after the 2006 avulsion in the Suncook River, New Hampshire. Freshwater Mussel Conservation Society Meeting, Baltimore, MD
- Lellis, W. A., J. C. Cole, S. J. White, D. R. Smith, D. A. Kreeger, and C. A. Campbell. 2009. Estimating population size and ecological impact of freshwater mussels in the upper Delaware River. Freshwater Mussel Conservation Society Meeting, Baltimore, MD
- McGowan, C. P., D. R. Smith, J. D. Nichols, J. Martin, J. Sweka, J. E. Lyons, L. J. Niles, K. Kalasz, R. Wong, M. Davis, and J. Brust. 2009. Using structured decision making to manage for both red knots and horseshoe crabs in the Delaware Bay. Shorebird Science in the Western Hemisphere, Mexico [INVITED]
- Smith, D. R., J. D. Nichols, and C. P. McGowan. 2009. Adaptive management of horseshoe crabs and red knots in Delaware Bay: Could it be home at last? Southern Division of the American Fisheries Society, New Orleans [INVITED]
- Smith, D. R., Vilella R. F., D. J. Hornbach, and M. C. Hove. 2008. Adaptive cluster, two-stage sequential, and two-phase sampling designs for estimation of freshwater mussel population density. North American Benthological Society 56th Annual Meeting, Salt Lake City, Utah [INVITED]
- Vilella, R. F. and D. R. Smith. 2008. Applying structured decision analysis to relocation of endangered freshwater mussels for species conservation. North American Benthological Society 56th Annual Meeting, Salt Lake City, Utah [INVITED]
- Smith, D. R. 2008. Horseshoe crab and shorebird connection. Prince George Audubon Society [INVITED]
- Smith, D. R. 2008. Structured decision making: a potential application to northern riffleshell relocation. Northern Riffleshell Strategy Meeting [INVITED]
- Baumann, P. C. and D. R. Smith. 2007. A framework for using lakewide background tumor prevalence in delisting decisions on Great Lakes Areas of Concern. SETAC, Milwaukee, WI
- Smith, D., C. Snyder, P. Baumann. 2007. Linking environmental change to decision making: case studies for monitoring ecological decline in National Parks and ecological restoration in the Great lakes of North America. Bio Eco 2007, Tianjin, China [INVITED]
- Smith, D. 2007. Application of adaptive cluster sampling and related designs to biological populations. Chinese Academy of Forestry Seminar, Beijing, China [INVITED]
- Smith, D. R. and M. Mandt. 2007. Sexual size dimorphism in horseshoe crabs (*Limulus polyphemus*): A test of competing hypotheses. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Millard, M. J., R. Carmichael, and D. R. Smith. 2007. Status and assessment of *Limulus* along the western Atlantic. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY. [INVITED]

- Michels, S. F., and D. R. Smith. 2007. Delaware Bay horseshoe crab spawning survey. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Eyler, S. M., D. R. Smith, and M. J. Millard. 2007. Results and benefits of a coordinated Atlantic coast tagging program for horseshoe crabs. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Mandt, M. T., D. R. Smith, J. Young, and L. Brousseau. 2007. Identification of horseshoe crab (*Limulus polyphemus*) migratory pathways using telemetry and archival tags. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Brousseau, L. J., D. R. Smith, M. S. Sclafani, and M. J. Millard. 2007. Use of a baywide radio telemetry array to study horseshoe crab (*Limulus polyphemus*) spawning behavior. International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Sclafani, M. S., L. J. Brousseau, K. M. Mckown, and D. R. Smith. 2007. An evaluation of a horseshoe crab (*Limulus polyphemus*) beach spawning survey for Long Island, NY: Is one sampling method suitable for the region? International Symposium on the Science and Conservation of Horseshoe Crabs, Dowling College, NY.
- Millard, M. J., D. R. Smith, and J. Grazio, 2007. Movements of brown bullheads in and around Presque Isle Bay, Lake Erie. The 50th Annual Conference of the International Association of Great Lakes Research, State College, PA.
- Smith, D. R. 2007. Sampling freshwater mussel populations in small and mid-sized rivers: *Does any of this apply to the mighty Mississippi?* USGS Upper Mississippi Environmental Science Center, Lacrosse, WI
- Smith, D. R. and M. J. Millard. 2006. Horseshoe crabs, shorebirds, and multi-species management. Brown bag seminar. USGS-HQ, Reston, VA
- Smith, D. R. 2006. The ecological relationship between horseshoe crabs and migrant shorebirds. Potomac Valley Audubon Society, Leetown, WV [INVITED]
- Sweka, J., D. Smith, and M. Millard. 2006. An age-structured population model for horseshoe crabs in the Delaware Bay area to assess harvest and egg availability for shorebirds. 62nd Annual Northeast Fish and Wildlife Conference.
- Densmore, C., E. Crawford, D. Smith, and M. Dykstra. 2005. Probable branchiomycosis among a captive population of horseshoe crabs, *Limulus polyphemus*, from Delaware Bay. 30th Eastern Fish Health Workshop, Shepherdstown, West Virginia.
- Brousseau, L., D. R. Smith, K. Kalasz, K. Bennett, and M. J. Millard. 2005. Simultaneous tracking of horseshoe crabs and shorebirds to study species interactions using a baywide radio telemetry array. American Fisheries Society Meeting, Anchorage, Alaska
- Smith, D. R., L. Brousseau, and M. J. Millard. 2005. Age and sex-specific spawning behavior and migration of horseshoe crabs in Delaware Bay. Estuarine Research Federation Conference, Norfolk, VA
- Sweka, J., M. J. Millard, and D. R. Smith. 2005. Identification of important population parameters and life stages in horseshoe crabs via simulation modeling. Estuarine Research Federation Conference, Norfolk, VA
- Pooler, P. S., D. R. Smith, and E. P. Smith. 2005. Characterizing horseshoe crab (*Limulus polyphemus*) spawning habitat in the Delaware Bay using Bayesian finite mixture models. Estuarine Research Federation Conference, Norfolk, VA
- Smith, D. R. 2005. Application of adaptive sampling to biological populations with an emphasis on edge units. Colloquium in the Department of Statistics, Virginia Tech. [INVITED]
- Smith, D., L. Brousseau, K. Kalasz, K. Bennett, and M. Millard. 2005. Species interactions along edge communities of the Delaware Bay estuary: using a baywide telemetry array to track horseshoe crabs and migrant shorebirds. Delaware Estuary Science Conference, Cape May, New Jersey.

- Smith, D., B. Swan, B. Hall, S. Michels, S. Bennett, and K. O'Connell. 2005. Spatial and temporal distribution of horseshoe crab spawning in Delaware Bay: insights from six years of standardized monitoring. Delaware Estuary Science Conference, Cape May, New Jersey.
- Young, J., A. Rafter, D. Smith, and W. Wright. 2005. Use of LIDAR remote sensing to characterize beach morphology for a study of horseshoe crab habitat selection in the Delaware Bay. Delaware Estuary Science Conference, Cape May, New Jersey.
- Jackson, N., D. Smith, and K. Nordstrom. 2005. Beach dynamics, shore protection, and habitat restoration for horseshoe crabs in Delaware Bay, USA. . Delaware Estuary Science Conference, Cape May, New Jersey.
- Smith, D. R. 2005. The American horseshoe crab: Ecology and management of the Delaware Bay population. National Institute of Oceanography, Dona Paula, Goa, INDIA [INVITED]
- Smith, D. R., J. A. Young, and F. van Manen. 2004. GIS-based adaptive sampling: a practical strategy to reduce the cost of edge units and increase detection of rare species. International Conference on Future of Statistical Theory, Practice, and Education, Hyderabad, Andhra Pradesh, INDIA [INVITED]
- Pooler, P.S., E.P. Smith, and D.R. Smith. 2004. Incorporating Response Uncertainty into Longitudinal Habitat Selection Data. Joint Statistical Meetings, Toronto, Canada.
- Smith, D. R. 2004. Population status and management of horseshoe crabs in Delaware Bay. Seminar West Virginia University. [INVITED]
- Smith, D. R. 2004. Horseshoe crabs in Delaware Bay: an arthropod with a lot on its back. Seminar New Mexico State University [INVITED]
- Brousseau, L. and D. R. Smith. 2004. Baywide telemetry study of horseshoe crabs in Delaware Bay. Presented to the ad hoc Shorebird Technical Committee of the Atlantic States Marine Fisheries Commission, Avalon, NJ. [INVITED]
- Young, J. A., D. R. Smith, and C. S. Snyder. 2004. Incorporating landscape variability in large-scale studies using GIS and statistical design: Lessons learned in a study of biodiversity losses from eastern hemlock decline. The Wildlife Society Annual Meeting [INVITED]
- Smith, D. R., R. E. Loveland, M. L. Botton, and C. N. Shuster, Jr. 2004. Horseshoe crab (*Limulus polyphemus*) fisheries and conservation challenges. Poster presented at Expanding the Ark: The Emerging Science and Practice of Invertebrate Conservation. American Museum of Natural History, New York.
- Smith, D., B. Andres, J. Nichols, and C. Elphick. 2003. An adaptive resource management approach for migratory shorebirds and horseshoe crabs that use Delaware Bay. Presented to the ad hoc Shorebird Technical Committee of the Atlantic States Marine Fisheries Commission, Smyrna, Delaware. [INVITED]
- Jackson, N. L., D. R. Smith, and K. F. Nordstrom. 2003. Beach nourishment in Delaware Bay: implications for horseshoe crabs. Poster presented at the Conference of the Estuarine Research Federation, Seattle, Washington.
- Smith, D. R. 2002. Practical considerations when using adaptive cluster sampling to survey rare species. Invited paper presented at The Wildlife Society Meeting, Bismarck, North Dakota. [INVITED]
- Smith, D. R., N. L. Jackson, R. G. Weber, K. F. Nordstrom, and D. B. Carter. 2002. Role of Beach Geomorphology on Horseshoe Crab Spawning Habitat Selection: Implications for the Horseshoe Crab-Shorebird Relationship. Invited paper presented at American Fisheries Society meeting, Baltimore Maryland. [INVITED]
- Smith, D. R., N. L. Jackson, and K. F. Nordstrom. 2002. Sediment activation by waves and horseshoe crabs on the foreshore of estuarine beaches. Invited poster presented at American Fisheries Society meeting, Baltimore, Maryland. [INVITED]

- Brousseau, L. J., M. Sclafani, D. R. Smith, and D. B. Carter. 2002. Acoustic and radio tracking of horseshoe crabs to assess foreshore and subtidal habitat uses in Delaware Bay. Poster presented at American Fisheries Society meeting, Baltimore, Maryland. [INVITED]
- McKown, K. and D. R. Smith. 2002. Age and year-specific survival rates for subadult and older striped bass, *Morone saxatilis*. Presented at American Fisheries Society meeting, Baltimore, Maryland.
- Smith, D. R., R. G. Weber, D. B. Carter, S. F. Michels, N. L. Jackson, and K. F. Nordstrom. 2001. A study of the beach as habitat for horseshoe crab spawning and shorebird foraging. Presented to Friends of Delaware National Estuarine Research Reserve, Dover, Delaware. [INVITED]
- Smith, D. R., P. S. Pooler, R. E. Loveland, M. L. Botton, and S. F. Michels. 2001. Temporal and spatial distribution of horseshoe crab eggs in relation to spawning activity and beach characteristics in Delaware Bay. Paper presented at American Fisheries Society meeting, Phoenix, Arizona.
- Smith, D. R., R. F. Vilella, and D. P. Lemarié. 2001. Evaluating freshwater mussel conservation by structuring management as an experiment: opportunities to learn by doing. Invited paper presented at 2nd Symposium of the Freshwater Mollusk Conservation Society, Pittsburgh, Pennsylvania. [INVITED]
- Swift, J. E., D. R. Smith, C. D. Snyder, D. P. Lemarié, and R. F. Vilella. 2001. Comparing efficiency of strategies to process freshwater mussels in deep water surveys. Poster presented at 2nd Symposium of the Freshwater Mollusk Conservation Society, Pittsburgh, Pennsylvania.
- Burnham, K. P. and D. R. Smith. 2000. Bias in survival estimates when tag-recovery models are applied to catch-and-release fisheries. Paper presented at International Biometrics Society Eastern North American Region 2000 Spring Meeting, Chicago, Illinois.
- Snyder, C. S., D. P. Lemarié, R. M. Ross, J. A. Young, D. R. Smith, and R. M. Bennett. 1999. Comparison of thermal and hydrologic stability between streams draining Eastern hemlock and mixed hardwood forests: implications to stream communities. Poster presented at the American Fisheries Society meeting Charlotte, North Carolina.
- Gatenby, C., B. Parker, D. Smith, K. Duncan, and R. Neves. 1999. Use of pond refugia for holding salvaged unionid mussels. Paper presented at 1st Symposium of the Freshwater Mollusk Conservation Society, March 17-19, 1999, Chattanooga, Tenn.
- Smith, D. R., and P. S. Pooler. 1999. Temporal and spatial variation in horseshoe crab spawning: implications for long-term monitoring. Invited paper presented at the American Fisheries Society meeting, Charlotte, North Carolina. [INVITED]
- Smith, D. R., Vilella, R. F., D. P. Lemarié, and S. von Oettingen. 1999. Recommendations for quantitative sampling of freshwater mussels. Paper presented at 55th Annual Northeast Fish and Wildlife Conference, Manchester, New Hampshire.
- Pooler, P. S., D. R. Smith. 1999. Sampling methodology for estimating the spatial distribution of a clustered immobile population. Paper presented at the Joint Statistical Meetings, Baltimore, Maryland.
- Smith, D. R. 1998. Application of adaptive cluster sampling to biological surveys: a biologist's perspective. Invited paper presented at the Joint Statistical Meetings, Dallas, Texas. [INVITED]
- Smith, D. R., X. He, V. Vecchio, C. Goshorn, K. Hattala, A. Kahnle, and T. McCrobie. 1998. Atlantic striped bass survival and harvest regulation: an analysis of coast-wide tag-recovery data. Invited paper presented at the American Fisheries Society meeting, Hartford, Connecticut. [INVITED]
- Smith, D. R. 1997. Anatomy of a quantitative survey: an overview of the way mussel sampling is done. Invited paper presented at the Eastern Heritage/Stewardship Conference, North Falmouth, Massachusetts. [INVITED]
- Smith, D. R. 1997. Analytical software useful in wildlife sciences: availability, reviews, and a cautionary tale. Computer Applications in Wildlife Management Workshop, Southeastern Association of Fish and Wildlife Agencies, Oklahoma City, Oklahoma. [INVITED]

- Smith, D. R., R. F. Vilella, and D. P. Lemarié. 1997. Two-phase adaptive sampling. International Biometrics Society Eastern North American Region Spring Meeting, Memphis, TN
- Johnson, J. H., R. M. Ross, and D. R. Smith. 1997. Evidence of secondary consumption of invertebrate prey by double-crested cormorants. 40th Annual Conference on Great Lakes Research, International Association for Great Lakes Research, Buffalo, NY
- Smith, D. R., D. P. Lemarié, R. F. Vilella, and D. A. Weller. 1995. Application and efficiency of adaptive cluster sampling in freshwater mussel surveys. Second Symposium on the Conservation and Management of Freshwater Mussels, St. Louis, Missouri
- Smith, D. R., R. F. Vilella, and D. P. Lemarié. 1995. A flexible multi-stage design for sampling freshwater mussel populations using double sampling for stratification. 51st Northeast Fish and Wildlife Conference, Ocean City, MD
- Smith, D. R., R. F. Vilella, and D. P. Lemarié. 1995. Evaluation of line transect sampling for estimating density of freshwater mussel assemblages. 51st Northeast Fish and Wildlife Conference, Ocean City, MD
- Smith, D. R. and M. J. Conroy. 1994. Adaptive cluster sampling for estimating wintering waterfowl density. VI International Congress of Ecology, Manchester, UK
- Smith, D. R. 1993. Initial sample selection with probability proportional to available habitat in adaptive sampling of wintering waterfowl. Southeast Fish and Wildlife Conference.

Teaching Experience

Semester courses

Shepherd University, Shepherdstown, WV
Environmental Statistics (ENVR 399: Spring 2001, Spring 2002),
Statistics (MATH 314: Spring 1998, Fall 1996, and Fall 1995),
Probability and Statistics (MATH 321: Spring 1997),
Finite Mathematics (MATH 154: Fall 1994)

Workshops and shortcourses

Scientific Writing for Publication, Aug 2011, National Conservation Training Center, US Fish and Wildlife Service, I taught section on writing about statistics

Introduction to Structured Decision Making and Adaptive Management for RGE Scientists (1/2 seminar) Oct 2009, I presented with Drs. Jim Nichols and Mitch Eaton, Leetown Science Center

Introduction to Structured Decision Making (I taught with 5 other instructors; one week course) Oct 2008, March 2009; National Conservation Training Center, US Fish and Wildlife Service

Designing Monitoring Surveys for National Parks (I taught with 7 other instructors; one week online course) Feb/Mar 2005, Apr 2006, Apr 2008; organized by Paul Geissler, UGSG

Monitoring and Adaptive Management for Endangered Species Conservation (I taught with 6 other instructors; one week course) Dec 2002, Sept 2004, and Jan 2006; National Conservation Training Center, US Fish and Wildlife Service

Workshop on Design and Methods for Sampling Freshwater Mussels at the 3rd Annual Pacific Northwest Native Mussel Symposium in Olympia, WA on June 15, 2005; Pacific Northwest Native Freshwater Mussel Workgroup (I presented on sampling design and statistical estimation)

Investigation and Valuation of Fish and Mussel Kills (I taught with 6 other instructors), continuing education workshop conducted at 134th annual meeting of the American Fisheries Society in Madison Wisconsin August 2004

Adaptive Cluster Sampling of Aquatic Populations (I organized the workshop with Nancy Lo, NMFS), continuing education workshop conducted at 131st annual meeting of the American Fisheries Society in Phoenix, AZ, 19 August 2001

Biostatistics (I taught course with Judy Gordon and Mike Millard, FWS), May of 1997, 1998, and 1999 in Shepherdstown, WV; April 1996 in Phoenix, AZ; March 1995 in Raleigh, NC; National Conservation Training Center, US Fish and Wildlife Service

Survival Estimation from Tag-recovery Data (13-14 April 1994/ Annapolis, MD), I organized and conducted the workshop for the Atlantic States Marine Fisheries Commission.

Professional Activities and Service

The International Biometric Society

American Fisheries Society

The Wildlife Society

Freshwater Mollusk Conservation Society

Guest Editor, *Northeastern Naturalist* (2009)

Associate Editor, *North American Journal of Fisheries Management* (2002-2007)

Member AFS Continuing Education Committee (2004-2005)

Software Editor, *Wildlife Society Bulletin* (1995-1998)

Elections Chair, Biometrics Working Group, The Wildlife Society (1999)

Chair, Adaptive Resource Management Subcommittee of the Delaware Bay Ecosystem Technical Committee, Atlantic States Marine Fisheries Commission

Co-chair, Planning Committee of the International Symposium on the Science and Conservation of Horseshoe Crabs

Co-chair, IUCN Species Specialist Group for Horseshoe Crabs (pending)

Chair, Horseshoe Crab Stock Assessment Committee of the Atlantic States Marine Fisheries Commission

Co-chair, Adaptive Resource Management Work Group for Horseshoe Crab Technical Committee of the Atlantic States Marine Fisheries Commission

Member, Science Advisory Committee for the National Park Service Inventory and Monitoring Program, Eastern Rivers and Mountains Network

Advisory Panel, Ecological Research and Development Group, Lewes, Delaware

Member, Striped Bass Tagging Working Group of the Atlantic States Marine Fisheries Commission

Member, Design team for the USGS-BRD Biomonitoring of Environmental Status and Trends (BEST) Large River Monitoring Network

Invited Participant, National Park Service workshop to develop biological inventories at Delaware Water Gap National Recreation Area and Upper Delaware Scenic and Recreational River (Oct. 24—25, 2000)

Invited Participant, Northeast Fisheries Science Center's review of the black sea bass tagging project, NMFS Woods Hole lab, Woods Hole, MA, April 27-28, 2004

Invited Participant, U.S. Fish and Wildlife, Hatchery Contaminant Workshop, Arlington, VA, Feb 16-18, 2005

Invited Participant, New York DEC Marine Program, Horseshoe Crab Research Meeting, East Setauket, NY, Feb 14, 2005

Invited Participant, Review Panel for Sampling Protocol for Freshwater Mussels in Large, Pennsylvania Rivers, Sponsored by Pennsylvania Fish and Boat Commission and Pennsylvania Department of Environmental Protection, April 4-8, 2005

Honors and Awards

Xi Sigma Pi 1987

Gamma Sigma Delta 1991

Delano F. Scott Scholarship 1986

Phi Beta Kappa 1987

USGS Star Awards 2009, 2010

Award of Excellence by Atlantic States Marine Fisheries Commission 2009