## PATRICK STEPHEN FORSYTHE

Department of Natural and Applied Sciences

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## **EDUCATION**

Ph.D. Michigan State University (2010). Zoology, Ecology, Evolutionary Biology and Behavior Dissertation: Exogenous correlates of migration, spawning, egg deposition and egg mortality in the lake sturgeon (*Acipenser fulvescens*).

M.S. Eastern Illinois University (2003). Biology

Independent Study: Influence of exotic shrubs on seed predation rates in forested wood lots.

Internship: Detecting changes in stream communities in response to dam removal.

B.S. Eastern Illinois University (2001). Environmental Biology

Thesis: Effects of previous experience and body size on refuge choice in crayfish.

# PROFESSIONAL EXPERIENCE

Position Title: ASSOCIATE PROFESSOR

Employer: Department of Natural and Applied Sciences, University of Wisconsin – Green Bay

Research Focus: Fish ecology, early life history, survival and recruitment

Dates Employed: August 2016 – Current Department Chair: Dr. Mike Draney

Position Title: ASSISTANT PROFESSOR

Employer: Department of Natural and Applied Sciences, University of Wisconsin – Green Bay

Research Focus: Fish ecology, early life history, survival and recruitment

Dates Employed: August 2011 – August 2016

Department Chair: Dr. John Katers

Position Title: FISHERIES RESEARCH BIOLOGIST (GS-09)

Employer: United States Fish and Wildlife Service

Job Focus: Lake Michigan Lakewide Management Plan (LaMP) Coordinator

Dates Employed: December 2010 – July 2011 Supervisor: Robert Elliott and Mark Holey

Position Title: ENVIRONMENTAL CONSULTANT AND WORKSHOP ORGANIZER

Employer: Great Lake Fishery Trust

Job Focus: Enhancing lake sturgeon passage at hydroelectric facilities

Dates Employed: August 2010 – December 2010

Supervisor: Mark Coscarelli

Position Title: RESEARCH ASSOCIATE

Employer: Molecular Ecology Lab, Dept. of Fisheries and Wildlife, Michigan State University Project Focus: Lake sturgeon reproductive timing, spawning site selection and early life history.

Dates Employed: April 2010 – August 2010

Supervisor: Dr. Kim Scribner

Position Title: LAKE MICHIGAN FISHERIES RESEARCH BIOLOGIST

Employer: Aquatic Biology and Fisheries Center, Department of Biology, Ball State University

Project Focus: Population dynamics and early life history of Lake Michigan yellow perch.

Dates Employed: May 2008 - March 2010

Supervisor: Dr. Tom Lauer

Position Title: GRADUATE RESEARCH ASSISTANT

Employer: Molecular Ecology Lab, Dept. of Zoology, Michigan State University

Project Focus: Lake sturgeon early life history, behavior, supplementation and rehabilitation.

Dates Employed: April 2003 – May 2008 Academic Advisor: Dr. Kim Scribner

Position Title: AQUATIC ECOLOGY TECHNICIAN

Employer: INHS Section for Aquatic Ecology & Conservation, University of Illinois

Project Focus: Aquatic ecosystem monitoring and assessment of best management practices.

Dates Employed: August 2002 - April 2003

Supervisor: Hope Dodd

#### **GRANTS AND FELLOWSHIPS**

- Department of the Interior, United States Fish and Wildlife Service (2014). Landscape surveillance of native and non-native larval fish distribution and occurrence in upper and lower waters of Green Bay. Forsythe, P.S. and T. Strakosh (USFWS) \$65,467
- Great Lakes Protection Fund and Wisconsin DNR (2014). Larval lake whitefish outmigration from Lake Michigan tributaries with respect to timing, abundance, and vertical distribution. Forsythe, P.S. and S. Hansen (Wisconsin DNR) \$41,507
- Oconto Electric Cooperative and Wisconsin DNR (2014). Spatio-temporal assessment of larval lake sturgeon production and behavior during outmigration drift in the Oconto River, Wisconsin. Forsythe, P.S. and M. Donofrio (Wisconsin DNR) \$14,565
- UW-Green Bay Research Council (2013). The effects of dam removal and habitat restoration on the migratory movements of northern pike at the time of reproduction. Forsythe, P.S. \$1000
- Wisconsin Sea Grant and Illinois/Indiana Sea Grant (2014). Coastal wetland nearshore linkages in Lake Michigan for sustaining sport fishes. Forsythe, P.S., G. Lamberti (Notre Dame), D. Uzarski (C Michigan) and M. Berg (Loyola) \$440,000 (\$220K to UWGB; \$220K to Notre Dame)
- Department of the Interior, U.S. Fish and Wildlife Service (2013). Survey of the Lake Michigan microzooplankton community: critical information for understanding the risk from

- aquatic nuisance species. Czesny (INHS), S. Thomas (INHS), J. Chick (INHS) and Forsythe, P.S. \$15,060
- John G. Shedd Aquarium (2013). The effects of dam removal and habitat restoration on migratory fishes of the Green Bay with emphasis on Northern Pike. Forsythe, P.S. and S. David (Shedd Aquarium) \$17,850
- Environmental Protection Agency and Nature Conservancy (2013). Effects of dam removal on a Great Lakes tributary to inform the management and conservation of native fish species. Forsythe, P.S. and S. David (Shedd Aquarium) \$12,020
- Oconto Electric, U.S. Fish and Wildlife Service, and Wisconsin Department of Natural Resources (2013). Assessment of larval lake sturgeon production and drift below Stiles Dam, Oconto River. **P.S. Forsythe** \$12,893.
- North American Hydro, U.S. Fish and Wildlife Service and Wisconsin Department of Natural Resources (2012). Assessment of larval lake sturgeon production and drift below the Menominee Dam Menominee River. P.S. Forsythe \$35,789.
- Great Lakes Restoration Initiative, Environmental Protection Agency and the Wisconsin Department of Natural Resources (2011). *Lower Sheboygan River AOC Benthic Habitat Mapping and Improvement Study*. **P.S. Forsythe** \$39,854.
- College of Natural Science, Michigan State University (2007). Dissertation completion fellowship for research on early life history and migratory behavior of lake sturgeon. **P.S.** Forsythe \$6000.
- Ecology, Evolutionary Biology and Behavior Program, Michigan State University (2007). Summer research fellowship for experimental assessment of early life mortality in lake sturgeon. **P.S. Forsythe** \$1700.
- National Fish and Wildlife Foundation, Budweiser Conservation Fellowship. (2006) *Stage-based analysis of potential barriers to the reproductive success of imperiled fish species*. **P.S. Forsythe** \$10,000.
- Presque Isle Electric & Gas Cooperative, Communities First Fund. (2005). Assessment of simulated lake sturgeon supplementations in Michigan drainages of the Great Lakes. P.S. Forsythe and J.A. Crossman \$2000.
- Honors College, Eastern Illinois University. (2001). *Undergraduate support for research on refuge selection in crayfish*. **P.S. Forsythe** \$1500.

### PEER-REVIEWED PUBLICATIONS

- Parsley, M, Jager, H., Cech, Joseph, McLaughlin, R., Elliot R. and **Forsythe P.S.** (Accepted June 2015). Reconnecting fragmented sturgeon populations in North American rivers. *In press Fisheries*
- Switzer, P.V., **Forsythe, P.S.,** Kruse, K.C. (2014). Male-male mounting and the unreliability of body size as a character for mate choice in male Japanese beetles. *Zoological Studies* 53(53):1-8.
- Draney, M.L., Hegnet, J.A.\*, Johnson, A.L.\*, Porter, B.C.\*, Justmann, C.K.\* and **Forsythe**, **P.S.** (2014). Microhabitat distribution of *Drapetisca alteranda*, a tree trunk Specialist sheet web weaver (Araneae, Linyphiidae). *Journal of Arachnology* 42(2):195-198.
- Crossman, J.A., **Forsythe, P.S.**, Baker, E.A. and Scribner K.T. (2014). Survival and growth of lake sturgeon during early life stages as a function of rearing environment. *Transactions of the American Fisheries Society* 143(1):104-116.

- **Forsythe, P.S.**, Finley, A., Ragavendran, A., Crossman, J.A., Baker, E.A. and Scribner, K.T. (2013). Experimental assessment of the magnitude and sources of lake sturgeon egg mortality. *Transactions of the American Fishery Society* 142(4):1005-1011.
- Duong, Y. T., Scribner, K.T., Crossman, J.A., **Forsythe, P.S.** and Baker E.A. (2013). Interannual variation in effective number of breeders and estimation of effective population size in long-lived iteroparous lake sturgeon. (*Acipenser fulvescens*). *Molecular Ecology* 22(5):1282-1294.
- **Forsythe, P.S.,** Doll, J., Lauer, T.E. (2012). Abiotic and biotic mechanisms responsible for yellow perch recruitment to age-2 in southern Lake Michigan, 1984 2007. *North American Journal of Fisheries Management* 19(5):389-399.
- Forsythe, P.S., Crossman, J.A., Ragavendran, A., Davis, C.A., Smith K.K, Baker, E.A., Scribner, K.T. (2012). Environmental and lunar cues are predictive of the timing of river entry and spawning site arrival in lake sturgeon *Acipenser fulvescens*. *Journal of Fish Biology*, 81(1):35-53.
- Forsythe, P.S., Crossman, J.A., Bello, N.M., Baker, E.A. and Scribner, K.T. (2012). Individual-based analyses reveal high repeatability in timing and location of reproduction in lake sturgeon. *Canadian Journal of Fisheries and Aquatic Sciences* 69(1):60-72.
- Crossman, J.A., **Forsythe, P.S.**, Baker, E.A. and Scribner K.T. (2011). Hatchery rearing environment and age affect survival and movements of stocked juvenile lake sturgeon. *Fisheries Management and Ecology* 18(2):132-144.
- Duong, Y.T., Scribner, K.T., Crossman, J.A., **Forsythe, P.S.**, Baker, E.A., Kanefsky, J., Homola. J.J. and Davis, C. (2011). Relative larval loss among females during dispersal of lake sturgeon. *Environmental Biology of Fishes* 91(4):459-469.
- Duong, Y. T., Scribner, K.T., Crossman, J.A., **Forsythe, P.S.** and Baker E.A. (2011). Environmental and maternal effects on embryonic and larval development time until dispersal of lake sturgeon (*Acipenser fulvescens*). *Canadian Journal of Fishes and Aquatic Sciences* 68(4):643-654.
- Crossman, J.A., **Forsythe, P.S.**, Baker, E.A. and Scribner K.T. (2011). Gamete and larval collection methods and hatchery rearing environments affect levels of genetic diversity in early life stages of lake sturgeon (*Acipenser fulvescens*). Aquaculture 310(3-4):312-324.
- Rydell, J.J., Lauer, T.E. and **Forsythe, P.S.** (2010). The influence of abiotic factors on gillnet catch rates of yellow perch in southern Lake Michigan. *Fisheries Management and Ecology* 17(3): 284-290.
- Crossman, J.A., **Forsythe, P.S.**, Baker, E.A. and Scribner K.T. (2009). Over-winter survival of stocked age-0 lake sturgeon. *Journal of Applied Ichthyology* 25(5): 516-521.
- **Forsythe, P.S.**, B. Flitz, and S.J. Mullin. (2004). Radio telemetry and post-emergent habitat selection of neonate box turtles (Emydidae: *Terrapene carolina*) in central Illinois. *Herpetological Review* 35:333-335.
- Switzer P.V., **Forsythe, P.S.**, Escajeda K and Kruse K.C. (2004). Effects of environmental and social conditions on homosexual pairing in the Japanese beetle (*Popillia japonica*). *Journal of Insect Behavior* 17(1): 1-16.
- **Forsythe, P.S.**, Wyatt D. S., Switzer, P.V. (2003). Effects of experience and body size on refuge choice in the crayfish *Orconectes immunis*. *Journal of Freshwater Ecology* 18(2): 305-313.

### MANUSCRIPTS UNDER REVIEW

- Firkus, C.\*, **Forsythe, P.S.,** Crossman, J.A., Ragavendran, A., Baker, E.A., Scribner, K.T. Lake sturgeon egg predation is related to predator density, predator body size and substrate composition. Submitted to the *Journal of Great Lakes Research*
- Finley, A., **Forsythe, P.S.**, Crossman, J.A., Baker, E.A. and Scribner, K.T. Spatially explicit analysis of lake sturgeon egg deposition and mortality using hierarchal Bayesian models. Submitted to *Ecography*.
- Duong, Y. T., Crossman, J.A., **Forsythe, P.S.,** Baker E.A. and Scribner, K.T. Genetic data reveal no temporal reproductive isolation in long-lived lake sturgeon (*Acipenser fulvescens*) exhibiting repeatability in spawning time. *Canadian Journal of Fisheries and Aquatic Sciences*.

## **MANUSCRIPTS IN PREPARATION**

- Crossman, J.A., **Forsythe, P.S.**, Baker, E.A. and Scribner K.T. Lethal and non-lethal effects of predation on survival and habitat use of juvenile lake sturgeon. In prep for submission to the *Journal of Applied Ichthyology*.
- Draney, M.L., Kuklinski J.R.\*, Veriha, S.\*, Hendricks, D.E\*. and **Forsythe, P.S.** Spatial distribution, behavior and niche selection by a tree trunk specialist sheet web weaver: *Drapetisca alteranda* (Araneae, Linyphiidae). In prep for submission to *Arachnology*.
- Currier R., Grossmeier, C.\*, Laliberte, M.\*, Yagle, B\*. and **Forsythe, P.S.** On the formation of elliptical laccoliths: Inference from controlled laboratory experiments. In prep for submission to *Earth and Planetary Science Letters*
- **Forsythe, P.S.,** Baker, E.A, Crossman, J.A., and Scribner K.T. The timing of outmigration in larval lake sturgeon and the role of environmental and lunar cues. In prep for the *Journal of Great Lakes Research*.

### **OUTREACH PUBLICATIONS**

- Crossman, J.A., Davis C., and **Forsythe, P.S.** (2006). Lake Sturgeon Research Update 234 Sturgeon Tagged: 66 Females and 168 Males, Study Objectives, and Hatchery Overview (Winter Edition 2007): 1-1.
- Bott, K., Crossman, J.A., and **Forsythe, P.S.** (2006). Hooked on Sturgeon and Reeling in Results: Restoring a Living Fossil. Department of Fisheries and Wildlife Spotlight Summer 2006 Edition. http://www.fw.msu.edu/magazines/spotlight/
- Crossman, J.A., Davis C., and Forsythe, P.S. (2006). Lake Sturgeon Research Update Welcome to the 230 club SFT! Sturgeon General: Official Publication of Sturgeon For Tomorrow (Summer Edition 2006): 1-1.
- Crossman, J.A., and **Forsythe, P.S.** (2005). Annual Lake Sturgeon Research Review and Update. Sturgeon General: Official Publication of Sturgeon For Tomorrow (Winter Edition 2005/2006): 1-1.
- Forsythe, P.S. (2004). Annual Lake Sturgeon Research Review and Update. Sturgeon General: Official Publication of Sturgeon For Tomorrow (Winter Edition 2004): 1-1.

### TEACHING AND LECTURE EXPERIENCE

#### Primary Instructor

- Limnology (Fall 2015)
- Stream Ecology (Fall 2014)
- Capstone for Environmental Science (Fall 2014)
- Ichthyology (Spring 2014)
- Landscape Ecology (Spring 2013, Spring 2015)
- Issues in Biological Conservation (Spring 2012, Spring 2013)
- Introduction to Environmental Science (Spring 2012, Spring 2013, Fall 2013, Fall 2014)
- Aquatic Ecology (Fall 2011, Fall 2012, Fall 2013)
- Ecological Methods and Analysis (Fall 2011, Spring 2012, Fall 2012, Fall 2013)

### **Teaching Assistant**

- Honors Organismal Biology (Fall 2007)
- Conservation Genetics (Fall 2006)
- General Ecology (Fall 2003)

#### MENTORING AND SUPERVISORY EXPERIENCE

Post-doctoral students advised/mentored

Dr. Chris Houghton (Spring 2014 – Current)

o Major responsibilities include: (1) conducting a rigorous sampling of wetland and near-shore areas around Green Bay and Lake Michigan, (2) constructing cross-habitat food webs using stable isotope mixing models, (3) estimating coastal wetland habitat use fishes using otolith microchemistry, and (4) building predictive models of both linkage types that account for the major drivers of fish-mediated linkages in Lake Michigan wetland types

*Graduate students advised/mentored* (§ = major advisor; \* = committee member)

	Institution	Degree	Year	<b>Thesis Focus</b>
Collin Moratz§	UWGB	M.S.	2016	Life history of bowfin
Marian Shaffer§	UWGB	M.S.	2016	Larval fish ecology
Rachel Van Dam§	UWGB	M.S.	2015	Northern pike ecology
Angelena Kooseman§	UWGB	M.S.	2015	Fish biodiversity models
Dave Lawrence§	UWGB	M.S.	2015	Lake sturgeon recruitment
Tim Flood*	UWGB	M.S.	2014	Cat Island Chain restoration
Chris Firkus§	UWGB	M.S.	2013	Side scan sonar in small streams
Ben Micheals*	Ball State	M.S.	2010	Perch capture rates
Caleb Bollman*	Ball State	M.S.	2010	Perch mortality and growth
Justin Walters*	Ball State	M.S.	2010	Perch dynamics and spawn time

*Independent research studies and internships supervised* 

• Rick Sanderson (Fall 2014) – 3 credit senior thesis research project. "Dietary analysis of Rainbow Trout, *Oncorhynchus mykiss*, from the Colorado River

- Ryan Wehse (Summer 2014) 2 credit independent study. "Native and non-native larval fish distribution and occurrence in upper and lower waters of Green Bay".
- Brooke Porter (Summer 2012) Internship consisted of well testing with Vilas County Health Department, lake sampling for the Plum Lake Association, and volunteering with the WDNR Clean Boats and Clean Waters program.
- Marian Shaffer (Spring 2012) 1 credit independent study. "Role of abiotic and biotic conditions in mediating the interaction between invasive and native crayfish".
- Chris Firkus (Fall 2011) 2 credit independent study. "Substrate size, predator density and size are predictive of lake sturgeon egg predation rates".

Undergraduate research technicians supervised

Dalton Hendricks (UWGB), Mikhael Parrson (UWGB), Amy Cottrell (UWGB), Ryan Wehse (UWGB), Jon Logan (UWGB), Jacqueline Derepkowski (UWGB), Paul Meer (UWGB), Conor Benham (UW-Milwaukee), Tony Rieth (UWGB), Ashley Spink (UWGB), Jack Kasten (UWGB), Jason Brabant (UWGB), Brooke Porter (UWGB), Christin Davis (Michigan State University), Aaron Ohrn (Lake Superior State University), Holly Wellard (Michigan State University), Ken Ulicney (Kent State University), Rebecca Frager (Colorado State University), Jon Bivens (Eastern Illinois University), Jessica Clark (Michigan State University), Steve Warner (Lake Superior State University), Allison Ethridge (Kansas State University), Adam Merrlington (Lake Superior State University), Rachel Van Horn (North Carolina State University).

### **TECHNICAL REPORTS**

- **Forsythe, P.S.** and Strakosh T. (2015). Green Bay Ichthyoplankton Surveillance for Native and Non-Native Species: Spatiotemporal Variation of Asian Carp eDNA in Lotic Systems. Performance report submitted to the United States Fish and Wildlife Service.
- Lamberti, G.A., **Forsythe, P.S.**, Berg, M.B. and Uzarski D.G. (2015). Quantifying Coastal Wetland Nearshore Linkages in Lake Michigan for Sustaining Sport Fishes. Annual report submitted to Illinois-Indiana Sea Grant and Wisconsin Sea Grant College Program.
- Forsythe, P.S. and Lawrence D. (2015). Assessment of larval lake sturgeon (*Acipenser fulvescens*) production and drift periodicity on the Oconto River. Final report submitted electronically to Oconto Electric.
- **Forsythe, P.S.** and Lawrence D. (2014). Assessment of larval lake sturgeon (*Acipenser fulvescens*) production and drift periodicity on the Oconto River. Final report submitted electronically to Oconto Electric.
- **Forsythe, P.S.** and Lawrence D. (2013). Assessment of larval lake sturgeon (*Acipenser fulvescens*) production and drift periodicity on the Menominee River, Wisconsin. Annual report submitted electronically to North American Hydro.
- **Forsythe, P.S.** and Firkus C. (2013). Lower Sheboygan River AOC Habitat Mapping and Improvement Study. Final report submitted electronically and in person to the WIDNR
- M.A. Coscarelli, Elliot, R.F. **Forsythe, P.S.**, and Holey, M.E. (2011). Enhancing lake sturgeon passage at hydroelectric facilities in the Great Lakes: Results of a workshop sponsored by the Great Lakes Fishery Trust. Submitted to the Great Lakes Fishery Trust.

- Forsythe, P.S., and Lauer T. (2010). Dynamics and models of the yellow perch in Indiana waters of Lake Michigan and near-shore fish community characteristics. Annual performance report submitted to Indiana DNR.
- Forsythe, P.S., Michaels, S.B. and Lauer T. (2009). Preliminary results of Ball State University yellow perch research in Indiana waters of Lake Michigan. Fall performance report submitted to Indiana DNR.
- **Forsythe, P.S.,** and Lauer T. (2009). Dynamics and models of the yellow perch in Indiana waters of Lake Michigan and near-shore fish community characteristics. Annual performance report submitted to Indiana DNR.
- Forsythe, P.S., and Lauer T. (2008). Preliminary results of Ball State University yellow perch research in Indiana waters of Lake Michigan. Fall performance report submitted to Indiana DNR.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., and Baker, E. (2007). Factors affecting lake sturgeon recruitment: A model system for species recovery in Michigan waters. Final Report submitted to the Michigan DNR.
- Crossman, J.A., **Forsythe, P.S.**, Scribner, K.T., Baker, E. (2007). Assessment of simulated lake sturgeon supplementations. July 2007 Progress Report submitted to the Great Lakes Fishery Trust.
- Crossman, J.A., **Forsythe, P.S.**, Scribner, K.T., Baker, E. (2007). Assessment of simulated lake sturgeon supplementations. January 2007 Progress Report submitted to the Great Lakes Fishery Trust.
- Crossman, J.A. Scribner, K.T., Baker, E. and **Forsythe, P.S.** (2006). Assessment of simulated lake sturgeon supplementations. July 2006 Progress Report submitted to the Great Lakes Fishery Trust.
- **Forsythe, P.S.**, Crossman, J.A., Scribner, K.T., and Baker, E. (2006). Factors affecting lake sturgeon recruitment: A model system for species recovery in Michigan. Annual Performance Report submitted to the Michigan DNR.
- Crossman, J.A. Scribner, K.T., Baker, E. and **Forsythe, P.S.** (2006). Assessment of simulated lake sturgeon supplementations. Progress Report submitted to the Great Lakes Fishery Trust. Crossman, J.A.
- Scribner, K.T., Baker, E. and **Forsythe, P.S.** (2005). Assessment of simulated lake sturgeon supplementations. Progress Report submitted to the Great Lakes Fishery Trust.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., and Baker, E. (2005). Factors affecting lake sturgeon recruitment: A model system for species recovery in Michigan. Annual Performance Report submitted to the Michigan DNR.
- Crossman, J.A. Scribner, K.T., Baker, E. and **Forsythe, P.S.** (2005). Assessment of simulated lake sturgeon supplementations. Progress Report submitted to the Great Lakes Fishery Trust.
- **Forsythe, P.S.**, Crossman, J.A., Scribner, K.T., and Baker, E. (2004). Factors affecting lake sturgeon recruitment: A model system for species recovery in Michigan. Performance Report submitted to the Michigan DNR
- Scribner K.T., Bott K., **Forsythe P.S.** and Dehaan P. (2004). Lake Michigan Basin genetics sub-project. Progress Final Report submitted to the Great Lakes Fishery Trust.

### PRESENTATIONS AND PUBLISHED ABSTRACTS

Selected oral presentations

- Duong, Y. T., Crossman, J.A., **Forsythe, P.S.,** Baker E.A. and Scribner, K.T. Genetic data reveal no temporal reproductive isolation in long-lived lake sturgeon (*Acipenser fulvescens*) exhibiting repeatability in spawning time. 2015 Annual Meeting of North American Sturgeon and Paddlefish Society, Oshkosh, Wisconsin.
- Cottrell, A. Solomon, D., **Forsythe, P.S.**, and VanDam, R. (2015). Effects of dam removal and habitat restoration on migratory fishes of Green Bay with emphasis on Northern Pike (*Esox lucius*). *145*<sup>th</sup> *Annual Meeting of the American Fisheries Society, Portland, Oregon*.
- Lawrence, D. and **Forsythe, P.S.** (2014). Vertical distribution of larval lake sturgeon (*Acipenser fulvescens*) on the Menominee and Oconto Rivers, Wisconsin. *43<sup>rd</sup> Annual meeting of the Wisconsin Chapter American Fisheries Society, Green Bay, Wisconsin.*
- Koosmann, A. and **Forsythe, P.S.** (2014). The relative effects of water chemistry on the biodiversity, abundance and early life history of fishes across tributaries of lower Green Bay, a prospective study. *43<sup>rd</sup> Annual meeting of the Wisconsin Chapter American Fisheries Society, Green Bay, Wisconsin.*
- Shaffer, M., Rieth, T., Strakosh, T. and **Forsythe, P.S.** (2014). Early detection of non-native fishes using fish larvae while restoring native species to Green Bay. *43<sup>rd</sup> Annual meeting of the Wisconsin Chapter American Fisheries Society, Green Bay, Wisconsin.*
- Van Dam, R. and **Forsythe**, **P.S.** (2014). Northern Pike (*Esox lucius*) habitat selection and success in restored wetlands on the west shore of Green Bay. 43<sup>rd</sup> Annual meeting of the Wisconsin Chapter American Fisheries Society, Green Bay, Wisconsin.
- Scribner, K., Duong, Y., Crossman, J., **Forsythe, P.S.**, and Baker, E. (2012). Demographic factors and male behavioral plasticity affect male and female reproduction success and temporal variation in effective breeding number in lake sturgeon. *Great Lakes Lake Sturgeon Coordination Meeting, Sault St. Marie, Michigan*
- Finley, A., Forsythe, P.S., Scribner K., Crossman, J. and Baker, E. (2012). Spatially explicit analysis of lake sturgeon egg deposition and mortality in natural stream settings. *Great Lakes Lake Sturgeon Coordination Meeting, Sault St. Marie, Michigan*
- Forsythe, P.S. (2010). Exogenous correlates of migration, spawning, egg deposition and egg mortality in the lake sturgeon (*Acipenser fulvescens*). Dissertation seminar. Michigan State University, East Lansing, MI.
- **Forsythe, P.S.**, Doll, J., Lauer, T.E. (2009). Quantitative evaluation of yellow perch recruitment in southern Lake Michigan, 1984 2006. 70<sup>th</sup> Annual Midwest Fish and Wildlife Conference. Springfield, IL.
- **Forsythe, P.S.,** Crossman, J.A., Davis, C., Bello, N., Smith, K. Scribner, K.T., Baker, E. (2008). Effect of environmental variables on migratory movements and repeatability for spawning time in lake sturgeon. 69<sup>th</sup> Midwest Fish and Wildlife Conference, Columbus, OH.
- **Forsythe, P.S.,** Crossman, J.A., Scribner, K.T., Baker, E. (2007). Estimates of survival probabilities for lake sturgeon eggs in natural stream conditions using analytical and simulation approaches. 137<sup>th</sup> Annual Meeting of the American Fisheries Society, San Francisco, CA.

- Forsythe, P.S., Crossman, J.A., Scribner, K.T., Baker, E. (2007). Lake sturgeon spawning stock characteristics, spawning periodicity, and spawning chronology in the Black River, 2001-06. 2nd Annual Fisheries and Wildlife Graduate Research Symposium. Michigan State University, East Lansing, MI.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., Baker, E. (2006). Vulnerability of larval lake sturgeon to predation and evaluation of the bigger is better hypothesis. Great Lakes Lake Sturgeon Coordination Meeting, Sault St. Marie, MI.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., Baker, E. (2006). Egg deposition, predation and post emergent survival in the lake sturgeon *Acipenser fulvescens*. 136<sup>th</sup> Annual Meeting of the American Fisheries Society, Lake Placid, NY.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., Baker, E. (2006). Egg deposition, predation and post emergent survival in the lake sturgeon *Acipenser fulvescens*. 1<sup>st</sup> Annual Fisheries and Wildlife Graduate Research Symposium. Michigan State University, East Lansing, MI.
- Forsythe, P.S., Crossman, J.A., Scribner, K.T., Baker, E. (2005). Upper Black River Lake Sturgeon: Research for the rehabilitation of an imperiled species. Michigan Department of Natural Resources Research Status and Strategies Meeting. Michigan State University, East Lansing, MI.
- **Forsythe, P.S.,** Crossman, J.A., Scribner, K.T., Baker, E. (2005). Deposition, habitat association, and the survival of lake sturgeon eggs (Acipenser fulvescens): The relative importance of one potential barrier to recruitment. 66<sup>th</sup> Annual Midwest Fish and Wildlife Conference, Grand Rapids, MI.
- **Forsythe P.S.**, Scribner K.T., Bott K. Smith, K. and Baker E. (2004). Spawning stock characteristics, egg deposition and post emergent survival in the lake sturgeon (*Acipenser fulvescens*): The relative importance of potential barriers to recruitment. The Canadian Conference for Fisheries Research, Ontario, CA.
- Forsythe P.S., Scribner K.T., Bott K. Smith, K. and Baker E. (2004). Stage-based approach to studying the reproductive ecology, early life history and recruitment of the lake sturgeon. 135<sup>th</sup> Annual Meeting of the American Fisheries Society, Madison, WI
- Forsythe P.S., Scribner K.T., Bott K. Smith, K. and Baker E. (2004). Spawning stock characteristics, egg deposition and post emergent survival in the lake sturgeon (*Acipenser fulvescens*): The relative importance of potential barriers to recruitment. Great Lakes Lake Sturgeon Coordination Meeting, Sault St. Marie, MI.

### Selected poster presentations

- Vandam, R., **P.S. Forsythe**, David, S., Robinson, P. and Cogswell, S. (2015). Restored wetland contributions to Great Lakes migratory fish populations, with northern pike as a surrogate for success. *Wisconsin Chapter of the American Fisheries Society Annual Meeting, Eau Claire, Wisconsin.*
- Koosemann A., **P.S. Forsythe**, Paoli, T., Howe, R. and Zorn, M. (2015). Spatial and temporal assessment of fish assemblages in lower order tributaries of Green Bay, Wisconsin. 44<sup>th</sup> Wisconsin Chapter of the American Fisheries Society Annual Meeting, Eau Claire, Wisconsin.
- Firkus C. and **P.S. Forsythe** (2013). Application of side-scan sonar technology for benthic habitat analysis in small streams. 42<sup>nd</sup> Wisconsin Chapter of the American Fisheries Society Annual Meeting, Rothschild, Wisconsin.

- Lawrence, D. and **P.S. Forsythe** (2013). Assessment of larval lake sturgeon (*A fulvescens*) production and drift periodicity on the Menominee River, Wisconsin. 42<sup>nd</sup> Wisconsin Chapter of the American Fisheries Society Annual Meeting, Rothschild, Wisconsin.
- Lawrence, D. and **P.S. Forsythe** (2012). Assessment of larval lake sturgeon (*Acipenser fulvescens*) production and drift periodicity on the Menominee River, Wisconsin. *Great Lakes Lake Sturgeon Coordination Meeting, Sault St. Marie, Michigan*
- Bollman, C.E., **Forsythe, P.S**. and Lauer, T.E. (2010). Modeling growth of YOY yellow perch in southern Lake Michigan. *40<sup>th</sup> Meeting of the Indiana AFS. Elkhart, IN*.
- Walters, J., **Forsythe, P.S**. and Lauer, T.E. (2010). Pre-spawn and post-spawn yellow perch in the Indiana waters of Lake Michigan: Are they two different populations? 40<sup>th</sup> Meeting of the Indiana AFS. Elkhart, IN.
- Micheals S.B., **Forsythe, P.S**. and Lauer, T.E. (2010). Influence of gear type on inference of species composition in Lake Michigan. *40<sup>th</sup> Meeting of the Indiana AFS. Elkhart, IN*.
- Bollman, C.E., **Forsythe, P.S**. and Lauer, T.E. (2009). Growth of YOY yellow perch in Lake Michigan. 70<sup>th</sup> Midwest Fish and Wildlife Conference. Springfield, IL.
- Walters, J., **Forsythe**, **P.S**. and Lauer, T.E. (2009). Gonad development and spawning timing of Lake Michigan Yellow perch. 70<sup>th</sup> Midwest Fish and Wildlife Conference. Springfield, IL.
- Micheals S.B., **Forsythe, P.S**. and Lauer, T.E. (2009). Comparison of methods used to assess Lake Michigan fishes. 70<sup>th</sup> Midwest Fish and Wildlife Conference. Springfield, IL.
- Forsythe P.S., Wyatt D. S., Switzer, P.V. (2001). Effects of Experience and Body Size on Refuge Choice in the Crayfish. *Illinois Undergraduate Research Conference, Charleston, IL*.

## **OUTREACH PRESENTATIONS**

- **Forsythe, P.S.** (2012). Fisheries and aquatic ecology: What is it and how can I get involved? University of Wisconsin Green Bay Eco U: Water resources camp
- Crossman, J.A., **Forsythe P.S.** and Scribner K.T. (2007). Lake sturgeon research review and future plans for rehabilitation efforts in the Black Lake system. Sturgeon For Tomorrow Annual Banquet, Cheboygan, MI.
- Forsythe P.S., Crossman, J.A. and Scribner K.T. (2006). Lake sturgeon research season activities and progress to date –Welcome to the 230 club SFT! Sturgeon For Tomorrow Annual Banquet, Cheboygan, MI.
- **Forsythe P.S.**, Crossman, J.A., Scribner K.T., Baker, E. (2005). Lake sturgeon research review and highlights. Sturgeon For Tomorrow Annual Banquet, Cheboygan, MI.
- **Forsythe P.S.**, Scribner K.T., Bott K. and Baker, E. (2004) A stage-based approach to studying the reproductive ecology, early life history and recruitment of the lake sturgeon. Sturgeon For Tomorrow Annual Banquet, Cheboygan, MI.
- Forsythe P.S., Scribner K.T., Baker, E. (2003) Lake sturgeon field season review: activities, experiments, results and recommendations for future field seasons. Featured Speaker: Sturgeon For Tomorrow Annual Banquet

# PROFESSIONAL SERVICE

UWGB American Fisheries Society Subunit Faculty Sponsor (Fall 2012 - present)
Natural and Applied Science Seminar Series Chair (Fall 2013 - present)
Institutional Animal Use and Care Committee Member (Fall 2012 - present)

*University Faculty Senate Alternate* (Spring 2013 – present)

Statistics Search and Screen Committee Member (Fall 2014)

Cofrin Center for Biodiversity Faculty Advisory Committee Member (Fall 2014 – present)

Research Assistant/Teaching Assistant Selection Committee Member (Fall 2012 – present)

Environmental Statistics/Statistics Search and Screen Committee Member (Fall 2013)

- o Search and screen was for two separate faculty positions
- o Conducted six on-campus interviews

Environmental Science and Policy Thesis Award Committee Member (Spring 2012)

Environmental Statistics Search and Screen Committee Member (Fall 2011)

#### Manuscript Reviewer

- o North American Journal of Fisheries Management
- o Transactions of the American Fisheries Society
- o Aquatic Ecology

Lake Michigan Fisheries Forum Member (2012-present)

Sheboygan River Technical Advisory Committee Member (2011-present)

Technical Committee Member, Lake Michigan Yellow Perch Task Group (2008-2010)

*Planning Committee Member*, 2010 Spring Conference, "What have we learned as we continue to migrate", Indiana Chapter of the American Fisheries Society (2009-2010)

Technical Committee Member, Lake Michigan Lake Sturgeon Task Group (2004-2007)

*Treasurer*, MSU Ecology, Evolutionary Biology, and Behavior Program (2007)

Symposium Moderator, North American Sturgeon Symposium, San Francisco, CA (2007)

Poster Judge, American Fisheries Society, Lake Placid National Meeting (2006)

Featured Speaker, Annual Banquet, Sturgeon for Tomorrow (2003-2006)

Sturgeon Guard, Sturgeon for Tomorrow, Upper Black River, MI (2003-2006)

Council Member, Sturgeon Advisory Board, Black Lake, MI (2003-2006)

**Panel Member**, Careers in biology, Lake Superior State University (2006)

*Tour Guide*, Stream-side research facility, Black Lake, MI (2003-2006)

**K-12 Educator**, Lake Sturgeon rehabilitation and restoration, Black Lake, MI (2003-2006)

### SCHOLARSHIPS, AWARDS AND TRAVEL GRANTS

National Residence Hall Honorary "Of the Month" Nominee (Fall 2013)

• NRHH is an organization that recognizes individuals who go above and beyond the call of duty and show great leadership throughout the campus community

UWGB Student Nominated Teaching Award Nominee (Spring 2013)

• Purpose of the award is to recognize and reward teaching that has made a significant impact on students' learning at UW-Green Bay

Certificate of Outstanding Research, Sturgeon for Tomorrow (2007)

Fellowship in Support of Professional Development, MSU Department of Zoology (2007)

Travel Award, MSU Graduate School, (2007)

Fellowship in Support of Professional Development, MSU Department of Zoology (2006)

Graduate Research Award, Presque Isle Electric & Gas Cooperative (2004)

Undergraduate Research Award, Phi Sigma (2001)

Erret and Maize Warner Presidential Scholarship for Environmental Biology (2000, 2001)

Polish National Alliance Academic Scholarship (1997, 1998, 1999, 2000)

American Legion Leadership Award (1997)

# **PROFESSIONAL MEMBERSHIPS**

National Chapter of the American Fisheries Society (2003-present)

- Early Life History Section Member
- Fish Habitat Section Member
- Genetics Section Member

Wisconsin Chapter of the American Fisheries Society (2011-present) Indiana Chapter of the American Fisheries Society (2008-present) Michigan Chapter of the American Fisheries Society (2003-present) Ecological Society of America (2007-present) Society for Conservation Biology (2007-present)

### PROFESSIONAL REFERENCES

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Dr. Kim Scribner (Ph.D. Committee Chair) Michigan State University Department of Fisheries and Wildlife 13 Natural Resources East Lansing, MI 48824 (517) 353-3288 scribne3@msu.edu

Dr. Ed Baker (Ph.D. Committee Member) Michigan DNR Fish and Wildlife Fisheries Research Biologist 484 Cherry Creek Road Marquette, MI 49855 (906) 241-1611 bakere 1@michigan.gov