

CURRICULUM VITAE
Darren J. Thornbrugh

Aquatic Ecologist
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RESEARCH INTERESTS

- Aquatic Landscape Ecology
- Watershed Integrity/Health/Resources
- Geospatial Analysis
- Community Assembly Theory
- Trait-Based Ecology and Biological Assessment
- Native Fish Species Conservation
- Native/Introduced Fish Species Interactions
- Whole Stream/River Ecology
- Integrated use of GIS and Remote Sensing with Stream Ecology

EDUCATION

Doctor of Philosophy. 2009-2014. Department of Fisheries & Wildlife, College of Agriculture & Natural Resources, Michigan State University, East Lansing, Michigan

Master of Science. 2006-2007. Division of Biology, College of Arts & Sciences, Kansas State University, Manhattan, Kansas

Bachelor of Arts. 1999-2001. Environmental Studies, College of Arts & Sciences, University of Nebraska, Lincoln, Nebraska

Bachelor of Science. 1994-2000. Geography, Minor Biology, College of Arts & Sciences, University of Nebraska, Lincoln, Nebraska

FELLOWSHIP AWARDS AND FUNDING

- **Austrian Marshall Plan Foundation Scholarship.** 2013. \$10931, Exchange student at Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria.
- **Dr. Howard A. Tanner Fisheries Excellence Fellowship.** 2011-2012. \$2500, Department of Fisheries and Wildlife Fellowship, Michigan State University

- **Red Cedar Fly Fishers Graduate Fellowship in Fisheries Management.** 2011. \$1000, Red Cedar Fly Fishers, Okemos, Michigan
- **Robert C. and Betty A. Ball Department of Fisheries and Wildlife Fellowship.** 2010-2011. \$5000, Michigan State University
- **Bridge Fellowship.** 2009-2010. College of Agriculture and Natural Resources, Michigan State University
- **Summer Recruitment Fellowship.** 2009. College of Agriculture and Natural Resources, Michigan State University

PUBLICATIONS

11 publications since 2005

IN REVIEW

- (4) **Thornbrugh, D. J.**, S. G. Leibowitz, R. A. Hill, M. H. Weber, A. R. Olsen, J. E. Flotemersch, J. L. Stoddard, and D. V. Peck. *In Review*. Mapping Watershed Integrity for the Conterminous United States. Ecological Indicators.
- (3) Fox, E. W., R. A. Hill, S. G. Leibowitz, A. R. Olsen, **D. J. Thornbrugh** and M. H. Weber *In Review*. Assessing the accuracy and stability of variable selection methods for random forest modeling in ecology. Ecological Applications.
- (2) Hill, R. A., E. W. Fox, S. G. Leibowitz, A. R. Olsen, **D. J. Thornbrugh** and M. H. Weber *In Review*. Predictive Mapping of the Biotic Condition of Conterminous-USA Rivers and Streams. Ecological Applications.
- (1) Bellmore, R. A., J. E. Compton, J. R. Brooks, E. W. Fox, R. A. Hill and **D. J. Thornbrugh** *In Review*. Relative importance of anthropogenic sources and internal sinks for nitrogen concentration in US national streams and rivers. Proceedings of the National Academy of Sciences.

IN PRESS

- (11) Tsang, Y., D. M. Infante, J. Stewart, L. Wang, R. Tingly III, **D. Thornbrugh**. 2016. StreamThermal1.0: A software package for calculating thermal metrics from stream temperature data. Fisheries, 41:9, 548-554.
- (10) Hill, R. A., M. H. Weber, S. G. Leibowitz, A. R. Olsen, and **D. J. Thornbrugh**. 2016. The Stream-Catchment (StreamCat) Dataset: A database of watershed metrics for the conterminous United States. Journal of the American Water Resources Association. 52:120-128.
- (9) **Thornbrugh, D. J.** 2014. Regional Influences of Landscape Features and Processes on Fluvial Fish Assemblages. Doctoral dissertation, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI, ProQuest. < <http://etd.lib.msu.edu/islandora/object/etd%3A2967> >.

- (8) Esselman, P. C., D. M. Infante, L. Wang, A. Cooper, D. Wieferich, Y. Tsang, **D. Thornbrugh**, and W. W. Taylor. 2013. Regional fish community indicators of landscape disturbance to catchments of the conterminous United States. *Ecological Indicators* 26:163-173.
- (7) **Thornbrugh, D. J.** and K. B. Gido. 2010. Influence of spatial positioning within stream networks on fish assemblage structure in the Kansas River basin, USA. *Canadian Journal of Fisheries and Aquatic Sciences* 67(1): 143-156, Erratum 67(3): 596.
- (6) Dodds, W. K., Wes W. Bouska, J. L. Etizmann, T. J. Pilger, K. L. Pitts, A. J. Riley, J.T. Schloesser, **D. J. Thornbrugh**. 2009. Eutrophication of the U.S. Freshwaters: Analysis of Potential Economic Damages. *Environmental Science and Technology* 43:12-19.
- (5) Paukert, C. P., J. Schloesser, J. Eitzmann, J. Fischer, K. Pitts, and **D. Thornbrugh**. 2008. Effect of Instream Sand Dredging on Fish Communities in the Kansas River USA: Current and Historical Perspectives. *Journal of Freshwater Ecology* 23:623-633.
- (4) **Thornbrugh, D. J.** 2008. Influence of stream connectance and network spatial position on fish assemblage structure in the Kansas River basin, USA. Master thesis, Division of Biology, Kansas State University, Manhattan, KS, K-REx. [Thesis](#)
- (3) Schooley, J. D., A. P. Karam, B. R. Kesner, P. C. Marsh, C. A. Pacey, and **D. J. Thornbrugh**. 2008. Detection of Larval Remains after Consumption by Fishes. *Transactions of the American Fisheries Society* 137: 1044-1049.
- (2) Mueller G. A., J. Carpenter, and **D. J. Thornbrugh**. 2006. Bullfrog Tadpole (*Rana catesbeiana*) and Red Swamp Crayfish (*Procambarus clarkii*) predation on early life stages of endangered razorback sucker (*Xyrauchen texanus*). *The Southwestern Naturalist* 51:2 258-261
- (1) Schooley, J. D., P.C. Marsh, B. R. Kesner, J. C. Lee, and **D. J. Thornbrugh**. *In press*. Survival of razorback suckers stocked to the lower Colorado River, Parker-Laguna: perspective on historical and present recovery efforts. *Proceedings of the Desert Fishes Council*. 2005.

IN PREPARATION

- (3) **Thornbrugh, D. J.**, D. M. Infante and Y. Tsang. *In Preparation*. Regional trends of biodiversity indices: natural landscape and human land use controls on stream fish assemblages. *Ecography*.
- (2) **Thornbrugh, D. J.**, and D. M. Infante. *In Preparation*. Landscape effects on fluvial fish assemblage structure: region-specific response to human land uses. *Ecological Application*.
- (1) **Thornbrugh, D. J.**, D. M. Infante, Y. Tsang, A. Moerke, T. Brenden, and C. Huckins. *In Preparation*. Multiple facets of a streams's thermal regime: effects of stream temperature on Michigan's fluvial fish assemblages. *Transactions of the American*

Fisheries Society.

TECHNICAL REPORTS

- (4) **Thornbrugh, D.** 2013. Developing greater understanding of functional response of stream fishes to natural and anthropogenic landscape gradients across large regions. Marshall Plan Scholarship papers, Austrian Marshall Plan Foundation, University of Natural Resources and Applied Life Sciences (BOKU) Vienna, Austria. < [report](#) >
- (3) **Thornbrugh, D.,** D. Infante, A. Moerke, T. Brenden and C. Huckins. 2010. Effects of temperature on functional relationships among Michigan's fluvial fish assemblages: Identifying management opportunities in the face of environmental change. Michigan Department of Natural Resources (MDNR) report, 230565
- (2) Esselman, P. C., D. M. Infante, L. Wang, W. W. Taylor, R. Tingley, J. Fenner, A. Cooper, D. Wiewerich, **D. Thornbrugh,** J. Ross. *In Review*. A landscape assessment of fish habitat conditions in United States rivers and their watersheds. Report by the Assessment Team to the Science and Data Committee and Board of the National Fish Habitat Action Plan.
- (1) Lee, J. C., J. D. Schooley, B. R. Kesner, **D. J. Thornbrugh,** and P. C. Marsh. 2005. Dispersal of Radio-Tagged Razorback Suckers Released into the Lower Colorado River. 52 pages

PROFESSIONAL/WORK EXPERIENCE

May 2016 – present	<u>Aquatic Ecologist</u> , Northern Great Plains Inventory & Monitoring Network, National Park Service, Rapid City, SD
Dec. 2014 – May 2016	<u>Post-Doctoral Research Fellow</u> w/, Oak Ridge Institute for Science and Education (ORISE), at U.S. Environmental Protection Agency (EPA) National Health and Environmental Effects research Laboratory (NHEERL), Western Ecology Division (WED), Freshwater Ecology Branch (FEB), Corvallis, OR
May 2009 – Dec. 2014	<u>Graduate Research Assistant (PhD)</u> , Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI. (Dana M. Infante)
Oct. 2008 – May 2009	<u>Fish & Wildlife Biologist I</u> , Nebraska Game & Parks Commission, Lincoln, NE
Feb. 2008 - Sept. 2008	<u>North Pacific Groundfish Observer</u> , Alaskan Observers Inc. Seattle, WA
Aug. 2005 - Jan. 2008	<u>Graduate Research/Teaching Assistant (MS)</u> , Kansas State University, Division of Biology, Manhattan, KS. (Keith B. Gido)
Jan. 2005 - July 2005	<u>Research Technician</u> , Kansas State University, Division of Biology, Manhattan, KS
Jan. 2004 - Dec. 2005	<u>Research/Laboratory Assistant</u> , Arizona State University, School of Life Sciences, Tempe, AZ

Jan. 2003 - Dec. 2003	<u>Biological Science Technician (fisheries) GS-05</u> , U. S. Department of Interior, Fish & Wildlife Service, AZ-FRO Parker, AZ
Jan. 2002 - Dec. 2002	<u>Environmental Compliance Specialist</u> , Department of Environmental Quality, Ground Water Division, Wellhead Protection Program, State of Nebraska, Lincoln, NE.
June 2001 - Nov. 2001	<u>Biological Field Technician</u> , University of Notre Dame – Department of Biological Sciences, MDN project, Juneau, AK.
April 2001 - June 2001	<u>Laboratory Technician I</u> , Department of Environmental Quality, Surface Water Division, State of Nebraska. Lincoln, NE
Nov. 2000 - March 2001	<u>Cartographic Technician</u> , Conservation and Survey Division, University of Nebraska, Lincoln, NE
Oct. 2000 - Dec. 2000	<u>Biological Technician</u> , McBride Benthic Consulting Inc., Lincoln, NE.
June 2000	<u>Biological Field Technician</u> , Nebraska Lakes Management Lincoln, NE
June 1999 - Aug. 2000	<u>Laboratory Technician I</u> , Department of Environmental Quality, Surface Water Division, State of Nebraska. Lincoln, NE
March 1999 - June 1999	<u>Horticulture Assistant</u> , Campbell's Nurseries and Garden Center Inc. Lincoln, NE

COURSE INSTRUCTION

2013	Hydrobiology (in Eng.), guest teaching assistant, Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria.
2011	Ichthyology Lab guest lecture x2 Teaching Assistant, Michigan State University, East Lansing, Michigan
2010	Hydrology for Watershed Management Research Assistant, Michigan State University, East Lansing, Michigan
2009	Aquatic Ecosystem Management, guest lecture x1 Teaching Assistant, Michigan State University, East Lansing Michigan
2006 – 2007	Principles of Biology, 3 semesters Graduate Teaching Assistant, Kansas State University, Manhattan, Kansas

MANUSCRIPT REVIEWER

- Ecology of Freshwater Fish
- Transaction of the American Fisheries Society

PROFESSIONAL SOCIETY AFFILIATIONS

- Society of Freshwater Science (2014 - present)
- American Fisheries Society (2009 - present)
- Michigan Chapter of American Fisheries Society (2010 - 2014)
- Michigan State University FW Graduate Student Organization (2009 - 2014)
- Nebraska Chapter of American Fisheries Society (2008 - 2009)

- North American Benthological Society (2007)
- Kansas State University Biology Graduate Student Association (2006 - 2007)
- Kansas State Student Sub-Unit of the American Fisheries Society (2006 - 2007)
- Kansas Chapter of the American Fisheries Society (2006 - 2007)
- Southwestern Association of Naturalists (2006 - 2007)
- Colorado River Native Fish Work Group (2004-2005)
- Desert Fishes Council (2004-2005)
- Colorado River Aquatic Biologist's (2004-2005)

PRESENTATIONS

- (26) **Thornbrugh D.**, S. Leibowitz, R. Hill, M. Weber, J. Stoddard and J. Flotemersch. May 24, 2016. Mapping Watershed Integrity for the Conterminous United States. Annual Meeting for Society of Freshwater Science (SFS) in Sacramento, California USA. (oral presentation)
- (25) Hill R., S. Leibowitz, A. Olsen, **D. Thornbrugh**, E. Fox and M. Weber. August 27, 2015. Variable Selection with Random Forest: Balancing Stability, Performance, and Interpretation in Ecological and Environmental Modeling. Annual Meeting for Society of Freshwater Science (SFS) in Sacramento, California USA. (oral presentation)
- (24) **Thornbrugh D.**, S. Leibowitz, R. Hill, M. Weber, A. Olsen, J. Stoddard and J. Flotemersch. May 18, 2016. Mapping Watershed Integrity for the Conterminous United States. USEPA, National Health and Environmental Effects research Laboratory (NHEERL) Western Ecology Division (WED) Science Seminar, Corvallis, Oregon (invited oral presentation)
- (23) Weber M., R. Debbout, R. Hill, S. Leibowitz, **D. Thornbrugh**, A. Olsen and T. Larsen. Feb. 25, 2016. The Stream Catchment (StreamCat) Dataset. Spatial Data Management group Oregon State University, Corvallis, Oregon. (oral presentation)
- (22) Flotemersch J., S. Leibowitz, R. Hill, J. Stoddard, M. Thoms, R. Tharme and **D. Thornbrugh**. August 27, 2015. A Watershed Integrity Definition and Assessment Approach to Support Strategic Management of Watersheds. Biennial Symposium of the International Society for River Science, La Crosse, Wisconsin USA. (oral presentation)
- (21) **Thornbrugh D.**, S. Leibowitz, R. Hill, J. Flotemersch, M. Weber and J. Stoddard. August 20, 2015. Mapping Watershed Integrity for the Conterminous United States. 145th Annual Meeting of American Fisheries Society (AFS) Portland, Oregon USA. (oral presentation)
- (20) Hill R., M. Weber, S. Leibowitz, T. Olsen and **D. Thornbrugh**. May 19, 2015. Mapping the biological condition of USA rivers and streams. Annual Meeting for the Society for Freshwater Science, Milwaukee, Wisconsin USA. (poster presentation)
- (19) Weber M., R. Hill, S. Leibowitz, T. Olsen and **D. Thornbrugh**. March 5, 2015.

- Creating Flexible Basins and Building Stream-Catchment and Lake-Catchment Datasets. EPA GIS Workgroup lightning talk, US EPA NHEERL Western Ecology Division, Corvallis, OR. (interweb seminar presentation)
- (18) **Thornbrugh, D.** and D. Infante. Dec. 2014. Regional Influences of Landscape Features and Processes on Fluvial Fish Assemblages. USEPA, National Health and Environmental Effects research Laboratory (NHEERL) Western Ecology Division (WED) Science Seminar, Corvallis, Oregon (invited oral presentation)
- (17) **Thornbrugh, D.** Nov. 3 2014. Regional Influences of Landscape Features & Processes on Fluvial Fish Assemblages. Doctoral Defense Seminar, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI. (oral presentation)
- (16) **Thornbrugh, D.** and D. Infante. 2014. Landscape effects on fluvial fish assemblage structure: region-specific response to anthropogenic stressors. Society of Freshwater Science, Joint Aquatic Sciences Meeting, Portland, Oregon (oral presentation)
- (15) **Thornbrugh, D.**, D. Infante, A. Moerke and T. Brenden. March. 2013. Some like it hot some don't, stream temperatures and Michigan's fishes: Identifying management opportunities. Masters seminar series, Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria. (invited oral presentation)
- (14) Krueger, D., D. Infante, K. Wehrly, T. Tsang, W. Daniel, J. Breck, **D. Thornbrugh**, A. Cooper, D. Wieferich, J. Ross, R. Tingley, K. Herreman, A. David. 2012. Landscape ecology principles and practice: An overview of research at Michigan State University and the Institute for Fisheries Research. Shiga University, Otsu, Shiga Prefecture, Japan.
- (13) **Thornbrugh, D. J.**, D. M. Infante, Ashley Moerke and T. O. Brenden. Dec. 2011. Some like it hot some don't, stream temperatures and Michigan's fishes: Identifying management opportunities in the face of environmental changes. Red Cedar Fly Fishers, Okemos, Michigan. (invited oral presentation)
- (12) **Thornbrugh, D. J.**, D. M. Infante, Lizhu Wang, Ashley Moerke and T. O. Brenden. Sept. 2011. Effects of temperature on relationships among Michigan's fluvial fish assemblages: Identifying management opportunities in the face of environmental changes. National American Fisheries Society Meeting, Seattle, Washington. (oral presentation)
- (11) **Thornbrugh, D. J.**, D. M. Infante and T. O. Brenden. Feb. 2011. Effects of temperature on functional relationships among Michigan's fluvial fish assemblages. Graduate Student Organization Research Symposium, Michigan State University (MSU), East Lansing, Michigan. (prospective oral presentation)
- (10) Esselman, P., D. M. Infante, L. Wang, W. W. Taylor, A. Cooper, R. Tingley, D. Wieferich, J. Fenner, **D. Thornbrugh**, and J. Ross. Sept. 16, 2010. An assessment

- of fish habitat condition for United States streams and rivers. National Fish Habitat Action Plan Science and Data Committee Meeting, Pittsburgh, Pennsylvania.
- (9) **Thornbrugh, D. J.** and D. M. Infante. Oct. 2009. “Short Snapper”, Structure of fish assemblages along environmental gradients. The Partnership for Ecosystem Research and Management (PERM) meeting at Michigan State University (MSU). East Lansing, Michigan. (invited oral presentation)
- (8) **Thornbrugh, D. J.** and K. B. Gido. June 2007. Fish dynamics in a Great Plains riverscape: A landscape level approach. Northern American Benthological Society. Columbia, South Carolina. (poster)
- (7) **Thornbrugh, D. J.** and K. B. Gido. May 2007. Fish dynamics in a Great Plains riverscape: A landscape level approach. American Ecological Engineering Society Meeting, Ecological Engineering in the Great Plains Ecosystem, Kansas State University, Manhattan, KS. (poster)
- (6) **Thornbrugh, D. J.** and K. B. Gido. March 2007. Fish community dynamics in a Great Plains riverscape. 33rd annual graduate student research forum, Division of Biology, Kansas State University, Manhattan, KS. (oral presentation)
- (5) Paukert, C. P., J. Eitzmann, J. Fischer, K. Pitts, J. Schloesser, and **D. J. Thornbrugh** (best professional presentation). January 2007. Fish community and habitat differences in dredges and undredged sites on the Lower Kansas River. KS, NE, IA Tri-State American Fisheries Society Meeting, Council Bluffs, IA.
- (4) **Thornbrugh, D. J.** and K. B. Gido. January 2007. Fish Community Dynamics in a Great Plains Riverscape. Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting, Council Bluffs, IA. (oral presentation)
- (3) **Thornbrugh, D. J.** and K. B. Gido. October 2006. Fish Community Dynamics in a Great Plains Riverscape. Great Plains Limnology Conference. Manhattan, KS. (oral presentation)
- (2) Gido, K. B., J. Schaefer, J. Falke, **D. J. Thornbrugh**, T. Strakosh. April 2006. Assembling fish communities in reservoirs. Southwestern Association of Naturalists.
- (1) Gido, K. B., **D. J. Thornbrugh**, B. Oakes, J. Falke, L. Knight. January 2006. Development of aquatic GAP in Kansas. Kansas Chapter of the American Fisheries Society. (poster)

References:

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