

LIZHU WANG
Curriculum Vitae

International Joint Commission, Great Lakes Office,
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Education:

Ph.D. in Aquatic Ecology, with minor in statistics, Montana State University, 1992.
M.S. in Fisheries and Wildlife, Montana State University, 1988.
B.S. in Aquaculture, Dalian Fisheries University, 1982.

Research Interest:

Evaluating influences of natural and anthropogenic environmental factors on water quality, physical habitat, and biological communities; modeling relationships among hydrology, thermal, landscape, land-use, physical habitat, and biota; developing tools and conducting aquatic system classification for management practice evaluation and environmental impairment assessment; and assessing potential impacts of climate and land-use changes on aquatic ecosystems.

Professional Experiences:

Senior Science Advisor – International Joint Commission, Great Lakes Regional Office, November 2011 to present.
Director - Institute for Fisheries Research, University of Michigan and Michigan Department of Natural Resources, August 2003 to 2011.
Senior Research Watershed Ecologist - Bureau of Integrated Science Services, Wisconsin Department of Natural Resources, April 1994 to July 2003.
Fisheries Specialist - Fish and Wildlife Division, Minnesota Department of Natural Resources, August 1992 - April 1994.
Research Assistant - Department of Biology, Montana State University, Bozeman, August 1986 - August 1992,
Lecturer - Department of Aquaculture, Dalian Ocean University, Dalian, China, January 1982 - August 1986.

Professional Services:

Adjunct Associate Professor – School for Environment and Sustainability, University of Michigan, 2003 to present
Adjunct Associate Professor – Department of Fisheries and Wildlife, Michigan State University, 2006 to present.
Adjunct Associate Professor – Department of Fisheries and Wildlife, University of Wisconsin-Stevens Point, 1998-2003.

Editorial Board – Water Biology and Security
Editorial Board – Water, December 2020 - present
Editorial Board – Environmental Management, December 2015 - present.
Associate Editor - Environmental Management, December 2005 – 2015.
Co-editor – Michigan Department of Natural Resources Research Report and Technical Report, 2006-2007 and 2009-2011.
Associate Editor – North American Journal of Fisheries Management, September 2004-2008.

Board of Directors, International Association of Great Lakes Research, May 2021-present.
Great Lakes Water Quality Agreement Annex 10 Task Teams of Ecosystem Indicators and Data Sharing and Management, 2012- present.

Great Lakes Panel on Aquatic Nuisance Species, 2012 - present.
Michigan Aquatic Nuisance Species Council, 2012 – 2013.
National Coastal Land-Use Database Development Core Team, 2011.
National Aquatic Habitat Condition Assessment Team, 2005-present.
Great Lakes Fish Habitat Partnership Data and Science Committee, 2009-present.
Midwest Fish Habitat Partnership Science Network Science Advisor, 2008-2011.
Midwest Glacial Lake Fish Habitat Partnership Data and Science Committee, 2007-2011
Michigan Department of Natural Resources Climate Change Team, 2008-2011
Michigan Department of Natural Resources Lake Michigan Management Team, 2007-2010.
US Environmental Protection Agency Aquatic Biological Gradient Condition Assessment Team, 2002-2004.
Wisconsin Department of Natural Resources Aquatic Thermal Criteria Task Group, 2000-2002.
Wisconsin Department of Natural Resources Agriculture Best Management Assessment Team, 1994-2003.

Grant Review Panels: Austrian Science Fund, National Science Foundation, US Environmental Protection Agency STAR program, U.S. National Oceanic and Atmospheric Administration Coastal Program, U.S. National Science Foundation, Michigan Sea Grant, Minnesota Sea Grant, Illinois-Indiana Sea Grant, Great Lakes Program (GLRI), Great Lakes Fisheries Trust. Great Lakes Fisheries Commission.

Review for Journals: Canadian Journal of Fisheries and Aquatic Resources, Conservation Ecology, Ecology, Ecological Application, Ecological Modeling, Ecological Letters, Environmental management, Environmental management and Sustainability, Environmental Monitoring and Assessment, Environmental Science & Technology, Freshwater Biology, Freshwater Science, Hydrobiologia, Hydrological Research Letters, Journal of American Water Resources Association, Journal of Applied Ecology, Journal of Ecohydrology, Journal of Great Lakes Research, Landscape Ecology, North American Journal of Fisheries Management, Restoration Ecology, River Research and Applications, Science of the Total Environment, Sustainable Water Resources Management, Transactions of the American Fisheries Society

Graduate Student Committees and Post Doctorial Fellows:

Master Students: Arthur Cooper, Michigan State University; Zachary Hecht-Leavitt, University of Michigan; Bread Love, Michigan State University; Mathew Einheuser, Michigan State University; Ralph Tingley, Michigan State University; Greschin Swisher, University of Michigan; Kristine Stepenuck, University of Wisconsin-Stevens Point; Kyle Zimmer, St. Cloud State University.

Ph.D. Students: Sean Woznicki, Michigan State University; Darren Thornbrugh, Michigan State University; Peter Esselman, University of Michigan; Kun Zhao, Shanghai Normal University.

Post Doctorial Fellows: Travis Brenden, Dana Infante, Dayong Wu, Peter Esselman, Damon Kruegor, Yin-Phan Tsang, Guiping Deng.

Research Grants and Contracts:

Career total > 2.5 million

Honors:

Ohio Sea Grant Advancing Great Lakes Science, Ohio Sea Grant, 2019.
Scientific Achievement Award in Support of Fish Habitat Conservation - National Assessment Team, 2011.
Distinguished Service Award, Madison Chinese Language School Board, Madison, Wisconsin, 2003.
Best Professional Poster Award, American Fisheries Society, 132 Annual Meeting, Baltimore, Maryland, 2002.
Distinguished Service Award, Madison City Environmental Council, Madison, Wisconsin, 2001.
Best Student Poster Award, North American Lake Management Society, 11th International Symposium, Denver, Colorado, 1991.
John C. Right Student Award for an Aquatic Biologist, Montana State University, 1990.
Certificate of the Biological Survey of Heilong River, China, 1984.

Professional Society:

International Association of Great Lakes Research
American Fisheries Society.
Water Environment Federation.

Peer Reviewed Publications:

1. **Wang, L.**, Y. Cao, D.M. Infante, 2023. Disentangling effects of natural factors and human disturbances on aquatic systems – need and approaches. *Water* 15 (7), 1387.
2. Xiong, F., D.M. Infante, J.D. Olden, W. Gao, **L. Wang**, Y. Chen. 2023. River-lake connectivity, wetland, and human stress factors shape fish diversity (alpha and beta) patterns in the middle and lower Yangtze River China. *Landscape Ecology*, 1-16.
3. Cao, Y., **L. Wang**. 2023. How statistically disentangle the effects of environmental factors and human disturbances: a review. *Water* 15(4), 734.
4. Liu, H., Y. Chen, R.E. Gozlan, X. Qu, W. Xia, F. Cheng, **L. Wang**, C.P. Paukert. 2023. Fish diversity reduction and assemblage structure homogenization in lakes: a case study on unselective fishing in China. *Water Biology and Security* 1(3), 100055.
5. Wang, Y.K., **L. Wang**, R.L. Kuo. 2022. Relationships between fish communities and habitat before and after a typhoon season in tropical mountain streams. *Water* 14(14) 2220.
6. Qian, Z., Y. Cao, **L. Wang**, Q. Wang. 2022. Developing Cyanobacterial Bloom Predictive Models Using Influential Factor Discrimination Approach for Eutrophic Shallow Lakes. *Ecological Indicators*, 144 (2022) 109458.
7. Pang, W., Y. Pan, Q. You, Y. Cao, **L. Wang**, G. Deng, Q. Wang. 2022. Causes of aquatic ecosystem degradation related to tourism and the feasibility of restoration for karst nature reserves. *Aquatic Ecology*. <https://doi.org/10.1007/s10452-022-09983-5>.
8. Zhao, K., **L. Wang**, Q. You, J. Zhang, W. Pang, Q. Wang. 2022. Impact of cyanobacterial bloom intensity on plankton ecosystem functioning measured by eukaryotic phytoplankton and zooplankton indicators. *Ecological Indicators*, 140, p.109028.
9. Wang, Y., **Wang, L.** Kuo, R. 2022. Relationships between fish communities and habitat before and after a typhoon season in tropical mountain streams. *Water* 14:14, 2220, <https://doi.org/10.3390/w14142220>
10. Vadas, R.L., Hughes R.M., Jae Bae, Y., ..., **Wang, L.** and 23 other authors. 2022. Assemblage-based biomonitoring of freshwater ecosystem health via multimetric indices: a critical review and suggestions for improving their applicability. *Water Biology and Security*, p.100054.
11. Chen. H.Y., R.E. Gozlan, P.B. McIntyre, X. Qu, W. Xia, F. Cheng, **L. Wang**, C.P. Paukert, J.D. Olden, S. Xie. 2022. Fish diversity reduction and assemblage structure homogenization in lakes: A case study on unselective fishing in China. *Water Biology and Security*, p.100055.
12. Dean, E.M., Cooper, A.R., **Wang, L.**, Daniel, W.M., David, S., Ernzen, C., Gido, K.B., Hale, E., Haxton, T.J., Kelso, W., Leonard, N., Lido, C., Margraf, J., Porter, M., Pennock, C., Propst, D., Ross, J., Staudinger, M.D., Whelan, G., and Infante, D.M., 2021, The North American Freshwater Migratory Fish Database (NAFMFD): Characterizing the migratory life histories of freshwater fishes of Canada, the United States,

and Mexico: U.S. Geological Survey data release, <https://doi.org/10.5066/P9WDLPLP0>.
<https://www.sciencebase.gov/catalog/item/619d2dbcd34eb622f6951e8a>

13. Xiong, F., Y., J.D. Olden, Y. Lu, H. Liu, X. Qu, W. Xia, C. Guo, D. M. Infante, **L. Wang**, Y. Chen. 2021. Riparian land use and in-channel stressors drive fish community structure in the Yangtze River. *Landscape Ecology*.
14. Zhao, K., **L. Wang**, Q. You, Y. Pan, T. Liu, Y. Zhou, J. Zhang, W. Pang, Q. Wang. 2021. Influence of Cyanobacterial Booms and Environmental Variation on Zooplankton and Eukaryotic Phytoplankton in a Large, Shallow, Eutrophic Lake in China. *Science of the Total Environment*, 773 (2021) 145421.
15. Tsang, Y.P., D. M. Infante, **L. Wang**, D. Kruguer, D. Wieferrich. 2021. Assessing hydrological and thermal habitats that support fishes with changes in climate over a large U.S. region. *The Science of Total Environment*, 755 (2021) 142503.
16. Zhao, K, W. Pang, Y. Cao, **L. Wang**, K. Song, Q. You, Q. Wang. 2021. Long-term plankton community dynamics and influencing factors in a man-made shallow lake, China. *Aquatic Sciences* 83(1):1-14.
17. Tan, C., T. Sheng, **L. Wang**, E. Mbaio, J. Go, B. Wang. 2021. Water-level fluctuations affect the alpha and beta diversity of macroinvertebrates in Poyang Lake, China. *Fundamental and Applied Limnology / Archiv für Hydrobiologie* 194(4): 321–334.
18. Stow, C.A, K. Glassner-Shwayder, D. Lee, **L. Wang**, G. Arhonditsis, J.V. DePinto, M.R. Twiss. 2020. Lake Erie phosphorus targets: an imperative for adaptive management. *Journal of Great Lakes Research*.
19. Deng, G., **Wang L.**, Y. Tang, Y. Pan, Y. Cao, Z. Zhu, B. Wang, Q. Wang, W. Pang, J. Zhang. 2020. Understanding the consequences of human and natural interactions: implication to the protection of Jiuzhaigou Nature Reserve, China. *Aquatic Ecosystem Health and Management*, 23 (3): 373-384, DOI: 10.1080/14634988.2020.1776498.
20. Guo, C., Y. Chen, R.E. Gozlan, H. Liu, Y. Lu, X. Qu, W. Xia, F. Xiong, H. Yuan, S. Xie, **L. Wang**. 2020. How water diversion projects impact fish communities and water quality in impounded lakes in China. *Science of Total Environment*.
21. Chen, Y., X. Qu, F. Xiong, Y. Liu, **L. Wang**, R.M. Hughes. 2020. Challenges to saving China's freshwater biodiversity: fishery exploitation and landscape pressures. *Ambio* 49:926-938. <https://doi.org/10.1007/s13280-019-01246-2>
22. Hughes, R.M., D.M. Infante, **L. Wang**, K. Chan, B.F. Terra. 2019. Advances in Understanding Landscape Influences on Freshwater Habitats and Biological Assemblages. *American Fisheries Society, Symposium 90*, Bethesda, Maryland.
23. Hughes, R.M., D.M. Infante, **L. Wang**, K. Chan, B.F. Terra. 2019. Introduction to advances in understanding landscape influences on freshwater habitats and biological assemblages. *In* R. M. Hughes, D. Infante, L. Wang, K. Chen, and B. F. Terra, editors. *Advances in Understanding Landscape Influences on Freshwater Habitats and Biological Assemblages*. American Fisheries Society, Symposium 90, Bethesda, Maryland, Pages 1-9.
24. Infante, D.M., **L. Wang**, R. M. Hughes, K. Chen, B.F. Terra. 2019. Advances, Challenges, and Gaps in Understanding Landscape Influences on Freshwater Systems. *In* R. M. Hughes, D. Infante, L. Wang, K. Chen, and B. F. Terra, editors. *Advances in understanding landscape influences on freshwater habitats and biological assemblages*. American Fisheries Society, Symposium 90, Bethesda, Maryland, Pages 463-495.

25. Riseng, C.M., K. Wehrly, **L. Wang**, E. Rutherford, J. McKenna, L. Johnson, L. Mason, C. Castiglione, T. Hollenhorst, B. Sparks-Jackson, S Sowa. 2018. Ecological classification and mapping of the Laurentian Great Lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 75:1693–1712.
26. **Wang, L.**, Y. Pan, Y. Cao, B. Li, Q. Wang, B. Wang W. Pang, J. Zhang, Z. Zhu, G. Deng. 2018. Detecting Early Signs of Environmental Degradation in Protected Areas: An Example of Jiuzhaigou Nature Reserve, China, *Ecological Indicators* 91:287-298.
27. Li, S., W. Yang, K. Chen, **L. Wang**, S. Xu, B. Wang. 2018. Influences of environmental factors on macroinvertebrate assemblages: differences between mountain and lowland ecoregions, Wei River, China. *Environmental Monitoring and Assessment* 190:152.
28. Zhao, K, **L. Wang**, C. Riseng, K. Wehrly, Y. Pan, K. Song, W. Pang, Q. You, L. Da, Q. Wang. 2018. Factors determining zooplankton assemblage difference among a man-made lake, connecting canals, and the water-origin river. *Ecological Indicators* 84:488-496.
29. Chen, Y., H. Zhang, **L. Wang**, R. Hughes. 2017. Construction: Limit China’s sand mining. *Nature* 550:457.
30. Cooper, A.R., D.M. Infante, W.M. Daniel, K.E. Wehrly, **L. Wang**, T.O. Brenden. 2017. Assessment of dam effects on streams and fish assemblages of the conterminous USA. *Science of Total Environment* 586: 879–889.
31. Hall, K.R., M.E. Herbert, S.P. Sowa, S. Mysorekar; S. Woznicki; A.P. Nejadhashemi, **L. Wang**. 2017. Reducing current and future risks: Using climate change scenarios to test an agricultural conservation framework. *Journal of Great Lakes Research* 43(1): 59-68.
32. Pan, Y., Y. Cao, **L. Wang**, B. Wang, Q. Wang, W. Pang, J. Zhang, G. Deng. 2017. Effects of *in situ* phosphorus enrichment on benthos in a subalpine Karst stream. *Ecological Indicators* 73:274–283.
33. Zhao, K., K. Song, Y. Pan, L. Da, **L. Wang**, Q. Wang. 2017. Metacommunity Structure of Zooplankton in River Networks: Roles of Environmental and Spatial Factors. *Ecological Indicators* 73:96-104.
34. Sowa, S. P., M. Herbert, L. Cole, S. Mysorekar, G. Annis, K. Hall, A. Nejadhashemi, S. Wozniack, **L. Wang**, P. Doran. 2016. How much conservation is enough? Defining implementation goals for healthy fish communities in agricultural rivers. *Journal of Great Lakes Research* 42(6):1302-1321.
35. **Wang L.**, D. Infante, C. Riseng, K. Wehrly. 2016. Advancement of geospatial capability by NRiSD and GLAHF in enhancing aquatic ecosystem research and management. *Geoinformatics & Geostatistics: An Overview* 4 (2):1-5. <http://dx.doi.org/10.4172/2327-4581.1000142>.
36. Woznicki, S.A., A.P. Nejadhashemi, Y. Tang, **L. Wang**. 2016. Large-scale Climate Change Vulnerability Assessment of Stream Health. *Ecological Indicators* 69:578-594.
37. Forsyth, D.K., C.M. Riseng, K.E. Wehrly, L.A. Mason, J. Gaiot, T. Hollenhorst, C. Johnston, C. Wyrzykowski, G. Annis, C. Castiglione, K. Todd, M. Robertson, D.M. Infante, **L. Wang**, J. E. McKenna, G. Whelan. 2016. The great lakes hydrography dataset: consistent, binational watersheds for the Laurentian Great Lakes Basin. *Journal of American Water Resource Association* 2(5):1068-1088.

38. Tsang, Y.P., D.M. Infante, J. Stewart, L. Wang, R.W. Tingly III, D. Thornbrugh, A.R. Cooper, and W.M. Daniel. 2016. StreamThermal: A software package for calculating thermal metrics from stream temperature data. *Fisheries* 41(9):548-554.
39. Pan, Y., **L. Wang**, Y. Cao, W. Pang, Q. Wang, G. Deng. 2016. Variation of benthic algal assemblages among habitats in subalpine karstic lakes and implications for bioassessment of nature reserves. *Hydrobiologia* 777:183–196.
40. Cao, Y., B. Wang, J. Zhang, **L. Wang**, Y. Pan, Q. Wang, D. Jian, G. Deng. 2016. Spatial variation of lake macroinvertebrate assemblages and relationship with natural environment and tourism stress in Jiuzhaigou National Natural Reserve, China. *Ecological Indicators* 62:182-190.
41. Li, X., Y. Li, L. Chu, R. Zhu, **L. Wang**, Y. Yan. 2016. Influences of local habitat, tributary position, and dam characteristics on fish assemblages within impoundments of low-head dams in the tributaries of the Qingyi River, China. *Zoological Research* 37(2):67-74.
42. Liu, S., G. Xie, **L. Wang**, K. Cottenie, D. Liu. B. Wang. 2016. Different roles of environmental variables and spatial factors in structuring stream benthic diatom and microinvertebrates in Yangtze River Delta, China. *Ecological Indicators* 61:602-611.
43. Cooper, A.R., D.M. Infante^a, K.E. Wehrly, **L. Wang**, T.O. Brenden. 2016. Understanding large-scale dam influences on fishes: identifying indicators and quantifying effects. *Ecological Indicators* 61:646-657.
44. Fu, L., Y. Jiang, J. Ding, Q. Liu, Q.Z. Peng, M.Y. Kang, **L. Wang**. 2015. Spatial variation of macroinvertebrate community structure and associated environmental conditions in a subtropical river system of Southeastern China. *Knowledge and Management of Aquatic Ecosystems* 416 (17): 1-20.
45. Li, F., Y. Wang, Z. Fan, X. Lv, Y. Hu, **L. Wang**. 2015. Characteristics and Spatial Distribution of Macroinvertebrates Assemblages in Qinghe River Drainage, Liaohe River Basin, China. *Fresenius Environmental Bulletin* 24(9):2800-2812.
46. **Wang, L.**, C.M. Riseng, L.A. Mason, E.S. Rutherford, S. Sowa, L. Johnson, J. McKenna, D. Infante, K. Wehrly, C. Castiglione, J. Schaeffer, M. Khoury, M. Roberson, J. Ciborowski, M. Coscarelli. 2015. A spatial classification and database for management, research, and policy making: the Great Lakes aquatic habitat framework. *Journal of Great Lakes Research* 41:584-596.
47. Woznicki, S.A., A.P. Nejadhashemi, D.M. Ross, Z. Zhang, **L. Wang**, A. Esfahanian. 2015. Ecohydrological model parameter selection for stream health evaluation. *Science of the Total Environment* 511:341-353.
48. Chu, L. Y.Z. Yan, W.J. Wang, R. Zhu, Y.Z. Yan, Y.F. Chen, **L. Wang**. 2015. Variation in fish assemblages across impoundments of low-head dams in headwater streams of the Qingyi River, China: effects of abiotic factors and native invaders. *Environmental Biology of Fishes* 98:101–112.
49. Daniel, W.M., D.M. Infante, R.M. Hughes, P.C. Esselman, Yin-Phan Tsang, D. Wieferich, K. Herreman, A.R. Cooper, **L. Wang**, W.W. Taylor. 2014. Characterizing coal and mineral mines as a regional source of stress to stream fish assemblages. *Ecological Indicators* 50:50-61.
50. Zhang, Y., J. Zhang, **L. Wang**, D. Lu, D. Cai, B. Wang. 2014. Influences of dispersal and local environmental factors on stream macroinvertebrate communities in Qinjiang River, Guangxi, China. *Aquatic Biology* 20:185-194.

51. Esselman, P. C., M. Edgar, J. Breck, L. Hay-Chmielewski, **L. Wang**. 2013. Systematic planning of fish conservation focal areas for rivers of Michigan, USA. *Aquatic Conservation: Marine and Freshwater Ecosystems* 23: 7–22.
52. Einheuser, M. D., A. P. Nejadhashemi, **L. Wang**, S. P. Sowa, S. A. Woznicki. 2013. Linking biological integrity and watershed models to assess the impacts of historical land use and climate changes on stream health. *Environmental Management* 51:1147–1163.
53. **Wang, L.**, T. Brenden, J. Lyons, D. Infante. 2013. Predictability of in-stream physical habitat for Michigan and Wisconsin wadeable streams from GIS-derived landscape data. *Riparian Ecology and Conservation* 1:11-24.
54. Esselman, P.C., D.M. Infante, **L. Wang**, A.R. Cooper, D. Wieferrich, Y. Tsang, D. Thornbrugh, and W.W. Taylor. 2013. Regional fish community indicators of ecological condition for rivers of the conterminous United States. *Ecological Indicators* 26:163–173.
55. Wehrly, K.E, **L. Wang**, D. Infante, A. Cooper, C. Geddes, L. Stanfield, E. Rutherford. 2013. Landscape Change and its Influences on Aquatic Habitat and Fisheries in the Great Lakes Basin. *In: W. Taylor, A. Lynch, and N. Leonard (editors). Great Lakes Fisheries Policy and Management: A Binational Perspective, 2nd Edition.* Michigan State University Press, East Lansing, Michigan.
56. **Wang, L.**, T. Brenden, Y. Cao, P. Seelbach. 2012. Delineation and validation of river network spatial units for water resources and fisheries management. *Environmental Management* 50:875–887.
57. Einheuser, M, P. Nejadhashemi, S. Sowa, **L. Wang**, Y. Hamaamin. 2012. Modeling the effects of conservation practices on stream health. *Science of the Total Environment* 436:380-391.
58. Zhang, Y., B. Wang, M. Han, **L. Wang**. 2012. Relationships between the Seasonal Variations of Macroinvertebrates, and Land Uses, for Biomonitoring in the Xitiaoqi River Watershed, China. *International Review of Hydrobiology* 97:184-199.
59. Wehrly, K. E., J. E. Breck, **L. Wang**, L. S. Kraft. 2012. Assessing local and landscape patterns of residential shoreline development in Michigan Lakes. *Lake and Reservoir Management* 28:158–169.
60. Wehrly, K. E. J. E. Breck, **L. Wang**, L. Szabo-Kraft. 2012. Classifying fish assemblages in sampled and unsampled lakes: a multivariate regression tree approach. *Transactions of American Fisheries Society* 141:414–425.
61. Wang, B., D. Liu, S. Liu, Y. Zhang, **L. Wang**. 2012. Impacts of urbanization on stream habitat and macroinvertebrate communities in the tributaries of Qiangtang River, China. *Hydrobiologia* 680:39-51.
62. **Wang, L.**, D. Infante, P. Esselman, A. Cooper, D. Wu, W. Taylor, D. Beard, G. Whelan, and A. Ostroff. 2011. A hierarchical spatial framework and database for the national river fish habitat condition assessment. *Fisheries* 36(9): 436-449.
63. Esselman, P. C., D.M. Infante, **L. Wang**, D. Wu, A. Cooper, W.W. Taylor. 2011. An index of cumulative disturbance to river fish habitats of the conterminous united states from landscape anthropogenic activities. *Ecological Restoration* 29:133-151
64. **Wang, L.**, D. Infante, J. Lyons, J. Stewart, A. Cooper. 2011. Effects of dams in river networks on fish assemblages in non-impoundment sections of rivers in Michigan and Wisconsin, USA. *River Research and*

65. **Wang, L.**, K. Wehrly, J. Breck, L.S. Kraft. 2010. Landscape based assessment of human disturbance for Michigan lakes. *Environmental Management* 46:471-483.
66. Lyons, J., T. Zorn, J. Stewart, P. Seelbach, K. Wehrly, **L. Wang**. 2009. Defining and characterizing coolwater streams and their fish assemblages in Michigan and Wisconsin, USA. *North American Journal of Fisheries Management* 29:1130–1151.
67. Wehrly, K.E., T. O. Brenden, **L. Wang**. 2009. A comparison of statistical approaches for predicting stream temperatures across heterogeneous landscapes. *Journal of the American Water Resources Association* 45:986-997.
68. Brenden, T., **L. Wang**, and Z. Sue. 2008. Quantitative identification of disturbance thresholds in support of aquatic resource management. *Environmental Management* 42:821-832.
69. Brenden, T., **L. Wang**, P.W. Seelbach. 2008. A river valley segment classification of Michigan streams based on fish and physical attributes. *Transactions of American Fisheries Society* 137:1621-1636.
70. Stepenuck, K.F., R.L. Crunkilton, M.A. Bozek, **L. Wang**. 2008. Comparison of macroinvertebrate-derived water quality metrics between snags and riffles. *Journal of the American Water Resources Association* 44: 670-678.
71. **Wang, L.**, T. Brenden, P.W. Seelbach, A. Cooper, D. Allan, R. Clark, Jr., and M. Wiley. 2008. Landscape based identification of human disturbance gradients and references for streams in Michigan. *Environmental Monitoring and Assessment* 141: 1-17.
72. **Wang, L.**, *et al.* 2008. Erratum. Landscape based identification of human disturbance gradients and references for streams in Michigan. *Environmental Monitoring and Assessment* 144: 483-484.
73. Brenden, T.O., **L. Wang**, P.W. Seelbach, R.D. Clark, Jr., M.J. Wiley, B.L. Sparks-Jackson. 2008. A spatially-constrained clustering program for river valley segment delineation from GIS digital river networks. *Environmental Modeling and Software* 23:638-649.
74. Brenden, T.O., **L. Wang**, P.W. Seelbach, R.D. Clark, and J. Lyons. 2007. Comparison between model-predicted and field-measured stream habitat features for evaluating fish assemblages-habitat relationships. *Transactions of American Fisheries Society* 136:580-592.
75. Wehrly, K., **L. Wang**, M. Mitro. 2007. Field-based estimates of thermal tolerance limits for trout: incorporating exposure time and temperature fluctuation. *Transactions of American Fisheries Society* 136: 365-374.
76. **Wang, L.**, D.M. Robertson, P.J. Garrison. 2007. Linkages between nutrients and assemblages of macroinvertebrates and fish in wadeable streams: implication to nutrient criteria development. *Environmental Management* 39:194-212.
77. **Wang, L.**, J. Lyons, P. Kanehl. 2006. Responses of habitat and fish to agricultural best management practices in a warmwater stream. *Journal of the American Water Resources Association* 42: 1047-1062.
78. **Wang, L.**, B. Weigel, P. Kanehl, and K. Lohman. 2006. Influence of riffle and snag habitat specific sampling on stream macroinvertebrate assemblage measures in bioassessment. *Environmental Monitoring and Assessment* 119:245-273.

79. **Wang, L.**, P.W. Seelbach, R.M. Hughes. 2006. Introduction to landscape influences on stream habitats and biological assemblages. *American Fisheries Society Symposium* 48:1-23.
80. Hughes, R., **L. Wang**, P.W. Seelbach, Editors. 2006. Landscape influences on stream habitats and biological communities. *American Fisheries Society Symposium* 48, Bethesda, Maryland.
81. **Wang, L.**, P.W. Seelbach, J. Lyons. 2006. Effects of levels of human disturbance on the influence of watershed, riparian, and reach scale factors on fish assemblages. *American Fisheries Society Symposium* 48:199-219.
82. Brenden, T.O., R.D. Clark, A.R. Cooper, P.W. Seelbach, **L. Wang**, S.S. Aichele, E.G. Bissell, and J.S. Stewart. 2006. A GIS framework for collecting, managing, and analyzing multi-scale landscape variables across large regions for river conservation and management. *American Fisheries Society Symposium* 48: 49-74.
83. Weigel, B.M., J. Lyons, P.W. Rasmussen, and **L. Wang**. 2006. Relative influence of factors at multiple spatial scales on fishes in Wisconsin's nonwadeable rivers. *American Fisheries Society Symposium* 48:493-51.
84. Gaffield, S.J., K.W. Potter, **L. Wang**. 2005 Predicting the summer temperature of small streams in southwestern Wisconsin. *Journal of the American Water Resources Association* 41:25-36.
85. Baker, E.A., K.E. Wehrly, P.W. Seelbach, **L. Wang**, M.J. Wiley, and T. Simon. 2005. Use of explicit statistical modeling to assess ecological stream condition in the Northern Lakes and Forest Ecoregion. *Transactions of American Fisheries Society* 134:697-710.
86. **Wang, L.** and M.B. Weigel. 2004. Biotic integrity indices for evaluating the health of freshwater resources. pp 36-41, *In: J. H. Lehr (editor), The Encyclopedia of Water: Volume of the Surface and Agricultural Water*. John Wiley and Sons, Hoboken, New Jersey.
87. **Wang, L.**, and P. Kanehl. 2003. Influences of watershed urbanization and instream habitat on macroinvertebrates in cold-water streams. *Journal of the American Water Resources Association* 39:1181-1196.
88. Weigel, M.B., **L. Wang**, P.W. Rasmussen, J.T. Butcher, P.M. Stewart, T.P. Simon, and M.J. Wiley. 2003. Relative influence of variables at multiple spatial scales on stream macroinvertebrates in the Northern Lakes and Forest Ecoregion, USA. *Freshwater Biology* 48:1440-1461.
89. **Wang, L.**, J. Lyons, and P. Kanehl. 2003. Impacts of urban land cover on trout streams in Wisconsin and Minnesota. *Transactions of the American Fisheries Society* 132:825-839.
90. **Wang, L.**, J. Lyons, P. Rasmussen, P. Kanehl, P. Seelbach, T. Simon, M. Wiley, E. Baker, S. Niemela, and M. Stewart. 2003. Influences of landscape- and reach-scale habitat on stream fish communities in the Northern Lakes and Forest ecoregion. *Canadian Journal of Fisheries and Aquatic Science* 60:491-505.
91. **Wang, L.** and J. Lyons. 2003. Fish and benthic macroinvertebrate assemblages as indicators of stream degradation in urbanizing watersheds. pp 227-249, *In: T. P. Simon (editor), Biological Response Signatures: Indicator Patterns Using Aquatic Communities*. CRC Press, Boca Raton, FL.
92. Stepennuck, K.F., R.L. Crunkilton, and **L. Wang**. 2002. Impacts of urban land use on macroinvertebrate communities in southeastern Wisconsin streams. *Journal of the American Water Resources Association* 38:1041-1051.

93. Goldstein, B., L. **Wang**, T.P. Simon, P.M. Stewart. 2002. Development of a stream habitat index for the Northern Lakes and Forests Ecoregion. *Journal of North American Fisheries Management* 22: 452-464.
94. **Wang**, L., J. Lyons, and P. Kanehl. 2002. Effects of watershed best management practices on habitat and fishes in Wisconsin streams. *Journal of the American Water Resources Association* 38: 663-680.
95. Stewart, J.S., L. **Wang**, J. Lyons, J.A. Wierl, and R. Bannerman. 2001. Influences of watershed, riparian-corridors, and reach-scale characteristics on aquatic biota in agricultural watersheds. *Journal of the American Water Resources Association* 37:1475-1487.
96. **Wang**, L., J. Lyons, P. Kanehl, and R. Bannerman. 2001. Impacts of urbanization on stream habitat and fish across multiple spatial scales. *Environmental Management* 28:255-266.
97. **Wang**, L., J. Lyons, P. Kanehl, R. Bannerman, and E. Emmons. 2000. Historical fish assemblage changes and watershed urban development in southeastern Wisconsin streams. *Journal of the American Water Resources Association* 36:1173-1189.
98. **Wang**, L., J. Lyons, and P. Kanehl. 1998. Development of evaluation of a habitat rating system for low gradient Wisconsin streams. *North American Journal of Fisheries Management* 18: 775-785.
99. **Wang**, L., J. Lyons, P. Kanehl, and R. Gatti. 1997. Influence of watershed land use on habitat quality and biotic integrity in Wisconsin streams. *Fisheries*: 22 (6): 6-12.
100. **Wang**, L., T.D. Simonson, and J. Lyons. 1996. Accuracy and precision of selected stream habitat estimates. *North American Journal of Fisheries Management* 16:340-347.
101. Lyons, J., L. **Wang**, and T.D. Simonson. 1996. Development and testing of an index of biotic integrity for coldwater streams in Wisconsin. *North American Journal of Fisheries Management* 16:241-256.
102. **Wang**, L., K. Zimmer, P. Diedrich, and S. Williams. 1996. The two-story rainbow trout fishery and its effect on the zooplankton community in a Minnesota lake. *Journal of Freshwater Ecology* 11:183-190.
103. **Wang**, L. and R. White. 1994. Competition between brown trout and hatchery greenback cutthroat trout of largely-wild parentage. *North American Journal of Fisheries Management* 14:475-487.
104. **Wang**, L. and J.C. Priscu. 1994. Stimulation of aquatic bacterial activity by planktonic cyanobacteria. *Hydrobiologia* 277:145-158.
105. **Wang**, L. and J.C. Priscu. 1994. Influence of phytoplankton on the response of bacterioplankton growth to nutrient enrichment. *Freshwater Biology* 31: 183-190.
106. Shi, W, D. Xia, S. Deng, L. **Wang**, and X. Lu. 1994. The relationship among reservoir environmental factors and fish growth and productivity. *Limnology and Oceanography* 25(1):77-86 (in Chinese).
107. **Wang**, L., T. Miller, and J.C. Priscu. 1992. Bacterioplankton nutrient deficiency in a eutrophic lake. *Archiv Fur Hydrobiologie*. 125(4):423-439.
108. Kangatharalingam, N., L. **Wang**, and J.C. Priscu. 1991. Evidence for bacterial chemotaxis to cyanobacteria from a radioassay technique. *Applied and Environmental Microbiology* 57:2395-2398.

109. Kangatharalingam, N., L. **Wang**, and J.C. Priscu. 1990. An *in situ* technique to measure bacterial chemotaxis in natural aquatic environment. *Microbial Ecology* 20:3-10.
110. Dong, S., W. Shi, L. **Wang**, D. Xia. 1989. Reservoir plankton community structures and seasonal variation in Liaoning Province. *Journal of Dalian Fisheries University* 4:1-10 (in Chinese with English abstract).
111. Shi, W., S. Dong, D. Xia, L. **Wang**. 1988. Ecological characteristics of 13 reservoirs in Liaoning Province. *Journal of Dalian Fisheries University* 1:71-74 (in Chinese with English abstract).
112. Shi, W., S. Dong, L. **Wang**. 1987. Productivity comparison of two shallow reservoirs with and without macrophytes. *Journal of Dalian Fisheries University* 1:11-18 (in Chinese with English abstract).
113. **Wang**, L., Y. Li, and W. Shi. 1982. Factors influencing the population sizes of *Erythoculter ilisaeformis* and *E. dabryi* in Dahufang Reservoir. *Transactions of Liaoning Association of Zoologists* 2:17-22 (in Chinese with English abstract).