

Peter T. Wolter

Associate Professor
Department of Natural Resource Ecology & Management
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Education

2009 Ph.D. Forest Ecology (minor: Environmental Monitoring), University of Wisconsin - Madison
1990 M.S. Forest Resources (remote sensing emphasis), University of New Hampshire
1985 B.S. Forest Administration, University of Wisconsin - Stevens Point

Dissertation: "Remote detection of forest biophysical parameters in northern Minnesota using a multi-sensor approach."
Research Advisor: Dr. Philip Townsend, University of Wisconsin – Madison.

Master's Thesis: "Detection of moisture stress in eastern white pine using a hand held ratioing radiometer with Landsat TM equivalent bands." Research Advisor: Dr. David Verbyla, University of New Hampshire.

Research Interests

Satellite remote sensing of forest ecosystems, forest structure, nutrient cycling, ecosystem services, indicator development, landscape ecology, and land use/land cover change.

Professional Experience

2018-pres Associate Professor, Department of Natural Resource Ecology & Management, Iowa State University
2011-2018 Assistant Professor, Department of Natural Resource Ecology & Management, Iowa State University
2010-2011 Associate Scientist, Department of Forest & Wildlife Ecology, University of Wisconsin – Madison.
2009-2010 Post-Doctoral Research Fellow, University of Wisconsin – Madison.
2004-2009 Research Assistant and Doctoral Candidate, University of Wisconsin – Madison.
2001-2004 Visiting Scientist, Department of Natural and Applied Science, University of Wisconsin – Green Bay.
1991-2009 Research Fellow, Natural Resources Research Institute, Center for Water and the Environment, University of Minnesota, Duluth, MN.
1989-1991 Research Scientist I, Institute for the Study of Earth, Oceans and Space, Complex Systems Research Center, University of New Hampshire, Durham, NH.
1988-1989 Research Assistant, Department of Forest Resources, University of New Hampshire, Durham, NH.

Teaching

- Wildlife Camp (A ECL 406), Iowa State University (Montana)
- Nat. Res. Photogrammetry & GIS (FOR 345), Iowa State University.
- Integrating GPS and GIS for Nat. Res. Management (NREM 446/546), Iowa State University.
- Satellite Remote Sensing Laboratory (NREM 489L/589L), Iowa State University
- Field Ecology Research & Teaching (NREM 380), Iowa State University
- Forestry Camp (FOR 206), Iowa State University
- Cultural History of Ecuador (NREM 496EU), Iowa State University
- Natural History of Madagascar (NREM 496A), Iowa State University
- Natural History of Cuba (NREM 496A), Iowa State University
- Forest Fire Fuels Measurement (NREM 490), Iowa State University
- Remote Sensing of Ecosystems (TA, For 875), Fall 2007, University of Wisconsin – Madison.
- Remote Sensing of Environment (EnvSci 454), Spring 2004, University of Wisconsin – Green Bay.
- Basics of Digital Remote Sensing (EnvSci 455), Spring 2002 & Fall 2003, UW – Green Bay.
- Basics of Remote Sensing (TA, For 757), Spring 1990, University of New Hampshire.
- Dendrology (TA, PBIO 895), Fall 1989, University of New Hampshire.

Peter T. Wolter

Professional Associations

- American Geophysical Union
- American Society of Photogrammetry and Remote Sensing
- Association for Fire Ecology
- Society of American Foresters
- Ecological Society of America

Grants

- 2023 USDA Forest Service-BIL \$221,131 (pending). Mapping invasive forest shrub extent and rate of spread across the Midwest. (Lead PI)
- 2023 NCR-SARE \$175,000 (pending). Taking water quality to heart: developing and applying 21st century tools to enhance age-old conservation wisdom in the North Central Region. (Lead PI)
- 2020 US Forest Service Landscape Scale Restoration \$69,811 (ISU \$22,141). Regenerating Iowa's white pine population in the Driftless Area of Iowa. (Co-PI).
- 2019 Lake States Fire Science Consortium \$4000. Remote detection and mapping of understory ladder fuel vegetation on the Superior National Forest. (Lead PI).
- 2018 USDA Forest Service \$77,589. Analysis of spruce budworm outbreak patterns in the Boarder Lakes region of Minnesota in support of alternative land management strategies. (Lead PI)
- 2017 USDA Forest Service \$42,317. Spruce budworm disturbance modeling (Lead PI).
- 2016 USDA Forest Service \$10,537. Analysis of spruce budworm outbreak patterns in the Boarder Lakes region of Minnesota in support of alternative land management strategies. (Lead PI).
- 2016 Iowa State University \$6000. Natural History of Madagascar (Lead)
- 2015 USDA Forest Service \$7,500. Analysis of spruce budworm outbreak patterns in the Boarder Lakes region of Minnesota in support of alternative land management strategies. (Lead PI).
- 2015 USDA Forest Service \$25,552. Satellite-based forest structure mapping in the Boundary Waters Canoe Area Wilderness for ecosystem management and decision support (Lead PI).
- 2015 USDA Forest Service \$12,506. Analysis of spruce budworm outbreak patterns in the boarder lakes region of Minnesota in support of alternative land management strategies (Lead PI).
- 2014 USGS NCCSC \$292,008. Understanding dynamics of land use switching with satellite and field level data in context of climate variability (Lead PI).
- 2014 USDA Forest Service \$32,070. Satellite-based forest structure mapping in the Boundary Waters Canoe Area Wilderness for ecosystem management and decision support (Lead-PI).
- 2014 Iowa Nutrient Reduction Strategy grant \$70,000. Development of Remote Sensing Protocols for Inventory of Nutrient Management Practices: Permanent Vegetative Practices (Co-PI).
- 2014 ISU CARD Grant \$24,972. Characterizing and Comprehending Land Use Change in the Loess Hills Region (Co-PI).
- 2013 USDA-NIFA \$550,000. Adaptation of agroecosystems to climate change at the edge of the U.S. Cornbelt—assessing different drivers in a network of infrastructure (Lead-PI).
- 2013 Ohio State University \$1000. Relationships between pre-fire forest composition and hardwood regeneration following wildfire in northeast Minnesota (Lead PI).
- 2011 NSF (DEB-1201146) \$14,201, RAPID Collaborative Research: Fire severity and ecosystem impacts immediately following an extreme fire event in northern Minnesota (Lead PI).
- 2009 U.S. Fish & Wildlife Service \$3000.00. Estimating forest composition and basal area in Sherburne National Wildlife Refuge using multi-temporal Landsat data (Lead PI).
- 2008 The Nature Conservancy \$5,500, Forest landscape change analysis, Manitou and Sand Lakes\Seven Beavers: 2000-2005 (lead PI).
- 2001 EPA STAR/NASA Grant, \$600,000, Development of state indicators for Great Lakes ecosystem health using remote sensing technology (Co-PI with Dr. Gerald Niemi and Dr. Carol Johnston).
- 1999 NASA (LCLUC99-0151-0006), \$497,327, Mapping and modeling forest change in a boreal landscape (Co-PI with John Pastor lead PI).
- 1995 USDA Forest Service, \$20,000, Forest classification of northern Minnesota using Landsat data (lead PI).

Peter T. Wolter

Service

Peer reviewer for the following journals:

Remote Sensing of Environment	Bioscience	Remote Sensing
Landscape Ecology	Biogeoscience	Canadian J. of Remote Sensing
Photogrammetric Engineering & Remote Sensing		IEEE Geoscience & Remote Sensing
International J. of Remote Sensing		

Guest Editor for “*Forests*,” an international, cross-disciplinary peer-reviewed journal of forestry and forest ecology, conservation, and management.

Guest Editor (Special Issue) for “*Remote Sensing*,” an international, cross-disciplinary peer-reviewed journal of remote sensing-based ecological research. Special issue: Satellite-based forest structure mapping.

Publications

- Wolter, P.T.**, Bogert, M.G., Johnson, P., Engelstad, P.S., and Poznanovic, A. (2023). Estimating understory fuel biomass using low-density Lidar. *Fire* (in prep.)
- Thapa, B., **Wolter, P.T.**, Sturtevant, B.R., Foster, J.R., & Townsend, P.A. (2023). Linking frass and insect phenology to optimize annual forest defoliation estimation. *MethodsX*, 102075.
- Thapa, B., **Wolter, P.T.**, Sturtevant, B.R., & Townsend, P.A. (2022). Linking remote sensing and insect defoliation biology—A cross-system comparison. *Remote Sensing of Environment*, 281, 113236.
- Wolter, P. T.**, Olbrich, J. J., & Johnson, P. J. (2021). Modeling sub-boreal forest canopy bulk density in Minnesota, USA, using synthetic aperture radar and optical satellite sensor data. *Fire Ecology*, 17(1), 1-23.
- Robert, L. E., Sturtevant, B. R., Kneeshaw, D., James, P. M., Fortin, M. J., **Wolter, P. T.**, Townsend, P.A., & Cooke, B. J. (2020). Forest landscape structure influences the cyclic-eruptive spatial dynamics of forest tent caterpillar outbreaks. *Ecosphere*, 11(8), e03096.
- Thapa, B., **Wolter, P.T.**, Sturtevant, B.R., and Townsend, P.A. (2020). Reconstructing past forest composition and abundance by using archived Landsat and national forest inventory data. *International Journal of Remote Sensing*, 41(10), 4022-4056.
- Engelstad, P. S., Falkowski, M., **Wolter, P.**, Poznanovic, A., & Johnson, P. (2019). Estimating Canopy Fuel Attributes from Low-Density LiDAR. *Fire*, 2(3), 38.
- Zlonis, E.J., Walton, N.G., Sturtevant, B.R., **Wolter, P.T.**, & Niemi, G.J. (2019). Burn severity and heterogeneity mediate avian response to wildfire in a hemiboreal forest. *Forest Ecology and Management*, 439, 70-80.
- Arora, G., & **Wolter, P.T.** (2018). Tracking land cover change along the western edge of the US Corn Belt from 1984 through 2016 using satellite sensor data: observed trends and contributing factors. *Journal of Land Use Science*, 13(1-2), 59-80.
- Robert, L.-E., Sturtevant, B. R., Cooke, B. J., James, P. M. A., Fortin, M.-J., Townsend, P. A., **Wolter, P.T.** and Kneeshaw, D. (2018), Landscape host abundance and configuration regulate periodic outbreak behavior in spruce budworm *Choristoneura fumiferana*. *Ecography*, 41, 1556-1571.
- Grinde, A. R., Niemi, G. J., Sturtevant, B. R., Panci, H., Thogmartin, W., & **Wolter, P.T.** (2017). Importance of scale, land cover, and weather on the abundance of bird species in a managed forest. *Forest Ecology and Management*, 405, 295-308.
- Dietrick, A., Falls, D., Kern, K., McCreary, H., Nawaz, D.A., Pai, A.M., **Wolter, P.T.**,... & Bennett, M. (2017). JOURNAL STAFF. Photogrammetric engineering & remote SenSing, 609.
- Wolter, P.T.**, Hilgemann, L.A., and White, M.A. (2017). Quantifying coarse woody debris and residual basal area following retention harvesting in northeast Minnesota using Landsat sensor data. *Canadian Journal of Forest Research*, 47: 1325–1338.
- Kolka, R., Sturtevant, B., Miesel, J., Townsend, P., **Wolter, P.**, Fraver, S., and DeSutter, D. (2017). Emissions of Forest Floor and Mineral Soil Carbon, Nitrogen and Mercury Pools and Relationships with Fire Severity for the Pagami Creek Fire in the boreal forest of northern Minnesota. *International J. of Wildland Fire*, 26(4), 296-305.
<http://dx.doi.org/10.1071/WF16128>
- White, M. A., Cornett, M. W., and **Wolter, P. T.** (2017). Two scales are better than one: Monitoring multiple-use northern temperate forests. *Forest Ecology and Management*, 384, 44-53.

Peter T. Wolter

- Miranda, B. R., Sturtevant, B. R., Schmelzer, I., Doyon, F., and **Wolter, P.** (2016). Vegetation recovery following fire and harvest disturbance in central Labrador—a landscape perspective. *Canadian Journal of Forest Research*, 46(8), 1009-1018.
- Cooley, R.A., **Wolter, P.T.**, and Sturtevant, B.R. (2016). Quantifying early-seral forest composition with remote sensing. *Photogrammetric Engineering & Remote Sensing*, 82(11), 853-863.
- Arora, G., **Wolter, P.T.**, Hennessy, D.A., and Feng, H (2016). Land use change and policy in Iowa's Loess Hills. *Sustainable Agriculture Research*, 5(4), 31-45.
- Arora, G., **Wolter, P.T.**, Feng, H., and Hennessy, D.A. (2016). Role of ethanol plants in Dakotas land use change: incorporating flexible trends in the difference-in-difference framework with remotely-sensed data. CARD Working Papers. Paper 583. http://lib.dr.iastate.edu/card_workingpapers/583
- Arora, G., **Wolter, P.T.**, Feng, H. and Hennessy, D.A. (2015). Characterizing and comprehending land use change in the Loess Hills region. *Agricultural Policy Review*. 1, Article 5.
- Wolter, P.T.**, Berkley, E.A., Peckham, S.D., and Singh, A. (2014). Satellite-based management tool for oak savanna ecosystem restoration. *Journal of Fish and Wildlife Management*, 5(2), 252-269.
- Kolka, R., Sturtevant, B., Townsend, P., Miesel, J. **Wolter, P.**, Fraver, S., and DeSutter, D. (2014). Forest floor and upper mineral soil carbon, nitrogen and mercury pools shortly after fire and comparisons utilizing fire severity indices. *Soil Science Society of America Journal*. 1, 1-8.
- Baumann, M., Ozdogan, M., **Wolter, P.T.**, Krylov, A., Vladimirova, N., Radeloff, V.C. (2014). Landsat remote sensing of windfall disturbance. *Remote Sensing of Environment*. 143, 171-179.
- Sturtevant, B.R., Miranda, B.R., **Wolter, P.T.**, James, P., Fortin, M.J., & Townsend, P.A. (2014). Forest recovery patterns in response to divergent disturbance regimes in the Border Lakes region of Minnesota (USA) and Ontario (Canada). *Forest Ecology and Management*, 313, 199-211.
<http://www.sciencedirect.com/science/article/pii/S0378112713007263#>
- Wolter, P.T.**, Sturtevant, B.R., Miranda, B.R., Lietz, S.M., Townsend, P.A., and Pastor, J. (2012). Greater Border Lakes Region land cover classification and change detection. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. <http://dx.doi.org/10.2737/RDS-2012-0007>
- Wolter, P.T.**, Berkley, E.A., Peckham, S.D., Singh, A., & Townsend, P.A. (2012). Exploiting tree shadows on snow for estimating forest basal area using Landsat data. *Remote Sensing of Environment*, 121, 69-79.
- Sturtevant, B.R., Miranda, B.R., Shinneman, D.J., Gustafson, E.J., & **Wolter, P.T.** (2012). Comparing modern and presettlement forest dynamics of a subboreal wilderness: Does spruce budworm enhance fire risk? *Ecological Applications*, 22(4), 2012, pp. 1278–1296.
- James, P.M.A., Sturtevant, B.R., Townsend, P.A., **Wolter, P.T.**, & Fortin, M-J (2011). Two-dimensional wavelet analysis of spruce budworm host basal area in the Border Lakes landscape. *Ecological Applications*, 21(6), 2197-2209.
- Wolter, P.T.** & Townsend, P.A. (2011). Estimating forest species composition using a multi-sensor fusion approach. *Remote Sensing of Environment*, 115, 671–691.
- Wolter, P.T.**, Townsend, P.A., & Sturtevant, B.R. (2009). Estimation of forest structural parameters using 5 and 10 meter SPOT-5 satellite data. *Remote Sensing of Environment*, 113, 2019-2036.
- Johnston, C.A., Brown, T.N., Hollenhorst, T.P., **Wolter, P.T.**, Danz, N.P., Niemi, G.J. (2009). GIS in support of ecological indicator development. *Manual of Geographic Information Systems* (56):1095-1113.
- Wolter, P.T.**, Townsend, P.A., Kingdon, C.C., & Sturtevant, B.R. (2008). Remote sensing of the distribution and abundance of host species for spruce budworm in Northern Minnesota and Ontario. *Remote Sensing of Environment*, 112(10), 3971-3982.
- Johnston, C.A., Watson, T., & **Wolter, P.T.** (2008). Sixty-three years of land alteration in Erie Township. *International Journal of Great Lakes Research*, 33 (3), 253–268.
- Wolter, P.T.**, Johnston, C.A., & Niemi, G.J. (2006). Land use land cover change in the U.S. Great Lakes basin 1992 to 2001. *International Journal for Great Lakes Research*, 32, 607-628.
- Pastor, J., Sharp, A., & **Wolter, P.** (2005). An application of Markov models to the dynamics of Minnesota's forests. *Canadian Journal of Forest Research*, 35, 3011-3019.
- Wolter, P.T.**, Niemi, G.J., & Johnston, C.A. (2005). Mapping SAV in the U.S. Great Lakes Using Quickbird Satellite Data. *International Journal of Remote Sensing*, 26(23), 5255-5274.
- Wolter, P.T.** & White, M.A. (2002). Recent forest cover type transitions and landscape structural changes in northeast Minnesota. *Landscape Ecology*, 17, 133-155.
- Hanowski, J.M., **Wolter, P.T.**, & Niemi, G.J. (2002). Effects of prescriptive riparian buffers on Landscape characteristics in northern Minnesota. *Journal of the American Water Resources Association*, 38(2), 633-639.

Peter T. Wolter

- Wolter, P.T.** & Lane, W.H. (2001). A look at Boreal Owl nesting habitat in northeastern Minnesota using Landsat data. *Loon*, 73, 192-199.
- Wolter, P.T.**, Mladenoff, D.J., Host, G.E., & Crow, T.R. (1995). Improved forest classification in the northern Lake State using multi-temporal Landsat imagery. *Photogrammetric Engineering and Remote Sensing*, 61(9), 1129-1143.

Conferences

- Olbrich, J., **Wolter, P.T.**, & Johnson, P. (2019). Sensitivity Analysis of Canopy Fuel Loads on Crown Fire Behavior in Northeast Minnesota (oral presentation). The 6th International Fire Behavior and Fuels Conference. 29 April – 3 May, Albuquerque, New Mexico.
- Wolter, P.T.**, Olbrich, J., & Johnson, P. (2019). Mapping Forest Canopy Bulk Density in the Superior National Forest to Support Fire Behavior Modeling (poster). The 2nd Heart of the Continent Science Symposium. 8-9 April 2019, Duluth, Minnesota.
- Olbrich, J., **Wolter, P.T.**, & Johnson, P. (2019). Sensitivity Analysis of Canopy Fuel Loads on Crown Fire Behavior in Northeast Minnesota (oral presentation). The 2nd Heart of the Continent Science Symposium. 8-9 April 2019, Duluth, Minnesota.
- Olbrich, J., **Wolter, P.T.**, & Johnson, P. (2019). Sensitivity Analysis of Canopy Fuel Loads on Crown Fire Behavior in Northeast Minnesota (oral presentation). University of Minnesota's Sustainable Forests Education Cooperative Annual Forestry and Wildlife Research Review Conference. 10 January, Cloquet, Minnesota.
- Sturtevant, B.R., Cooke, B.J., Robert, L.-E., Miranda, B.R., Thapa, B., and **Wolter, P.T.** Modelling insect-forest interactions across landscapes: Heart of the Continent advances the state of the art. Heart of the Continent Partnership, Science Symposium, Duluth, MN, April 8-9, 2019
- Thapa, B., **Wolter, P.T.**, Sturtevant, B.R., and Townsend, P.A. (2019). Reconstructing Historical Forest Composition and Abundance by Using Archived Landsat and National Forest Inventory Data (oral presentation). The 2nd Heart of the Continent Science Symposium. 8-9 April 2019, Duluth, Minnesota.
- Sturtevant, B.R., Cooke, B.J., Robert, L.-E., Miranda, B.R., Thapa, B., & **Wolter, P.T.** (2019). Modelling insect-forest interactions across landscapes: Heart of the Continent advances the state of the art (oral presentation). The 2nd Heart of the Continent Science Symposium. 8-9 April 2019, Duluth, Minnesota.
- Arora, G., Feng, H., Hennessy, D.A., & **Wolter, P.T.** (2018). Conservation easement allocations to address localized spillovers: A theoretical model with empirical evidence. Seminar: Faculty of Economics, South Asian University, 16 November, New Delhi, India.
- Arora, G., Feng, H., Hennessy, D.A., & **Wolter, P.T.** (2018). Conservation easement acquisitions amidst localized spillovers in Grassland Conversions: Analysis using Remotely-Sensed Data. Seminar: Center for Development Economics and Department of Economics, Delhi School of Economics, 12 April, New Delhi, India.
- Thapa, B., **Wolter, P.T.**, Sturtevant, B.R., and Townsend, P.A. (2018). Reconstructing Historical Forest Composition and Abundance by Using Archived Landsat and National Forest Inventory Data (poster presentation). Presented at the US-IALE 2018 Annual Meeting Symposium. 9-13 April 2018, Chicago, Illinois.
- Wolter, P.T.** (2018). Mapping forest structure from space (oral presentation). Dakota Society of American Foresters Spring Conference: The history & technology of forestry: Where yesterday meets tomorrow, 12-13 April, Spearfish, South Dakota.
- Arora, G., Hennessy, D.A., Feng, H., and **Wolter, P.T.** (2016). Strategic Grasslands Conversions and Conservation Easement Acquisitions in the Dakotas: Analysis using Remotely Sensed Data. In 2016 Annual Meeting, July 31-August 2, 2016, Boston, Massachusetts (No. 236016). Agricultural and Applied Economics Association.
- Hilgemann, L.A. and Wolter, P.T. (2015). Using Landsat sensor data as a management tool for monitoring downed woody debris (poster). Society of American Foresters (SAF) National Convention, November 5-7, Baton Rouge, LA.
- Arora, G., **Wolter, P.T.**, Feng, H., and Hennessy, D.A. (2015). Role of Ethanol Plants in Dakotas' Land Use Change: Analysis Using Remotely Sensed Data. In 2015 AAEA & WAEA Joint Annual Meeting, July 26-28, San Francisco, California (No. 205877). Agricultural and Applied Economics Association & Western Agricultural Economics Association.
- Arora, G., P.T. Wolter, H. Feng, and D.A. Hennessy (2015). Land Use and Climate Change in the Dakotas." Poster presented at 2015 NIFA Climate Change Project Directors Meeting, Washington, DC, April 7-9.
- Arora, G., P.T. Wolter, H. Feng, and D.A. Hennessy (2015). Land Use and Climate Change in the Dakotas." Poster presented at 2015 Open Science Conference, Fort Collins, CO, May 20-22.

Peter T. Wolter

- Kolka, R., Sturtevant, B., Townsend, P., **Wolter, P.**, Fraver, S., and DeSutter, T. (2014). Post-fire comparisons of forest floor and soil carbon, nitrogen, and mercury pools with fire severity indices. Soil Science Society of America Journal, 12th North American Forest Soils Conference, Whitefish, MT, 16–20 June 2013. 8 pp.
- Cooley RA, **Wolter P.T.** (2014). Use of remote sensing to quantify aspen regeneration and study drivers affecting forest response following wildfire in northeast Minnesota. Poster session presented at: Graduate and Professional Student Research Conference, 4 April, Iowa State University, 8; Ames, IA.
- Wolter, P.T.**, Berkley, E.A., Peckham, S.D., Singh, A., & Townsend, P.A. (2013). Using Landsat sensor data as a management tool for oak woodland and savanna ecosystem restoration (poster). The 98th annual symposium of the Ecological Society of America, 4-9 August, Minneapolis, MN.
- Kolka, R., Sturtevant, B., Townsend, P., Wolter, P., Fraver, S., and DeSutter, T. (2012). Influence of wildfire severity on forest floor and upper soil carbon, nitrogen and mercury pools. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Cincinnati, OH, 21-24 October.
- Wolter, P.T.**, Berkley, E.A., & Peckham, S.D. (2011). Estimating basal area of oak woodland and savanna using moderate-resolution satellite imagery (Poster). U.S. Fish and Wildlife Service Conference, Conserving the Future: Wildlife Refuges and The Next Generation, 10-13 July, Madison, WI.
- Sturtevant, B., Quinn, V., Robert, L-E, Kneeshaw, D., James, P., Fortin, M-J., **Wolter, P.**, Townsend, P., Cooke, B. (2009). Can landscape-scale management influence insect outbreak dynamics? A natural experiment for eastern spruce budworm. Proceedings: 7th North American Forest Ecology Workshop, 22-26 June, Logan, UT.
- Wolter, P.T.** & Townsend, P.A. (2009). Estimating forest species composition using a multi-sensor approach (**poster**). Eos Trans. AGU, 88(54), Fall Meet. Suppl., Abstract B31A-0312.
- James, P.M., Sturtevant, B.R., Townsend, P.A., **Wolter, P.T.**, & Fortin, M-J. (2008). Spatial legacies of forest management in spruce budworm host species. Proceedings: 23rd Annual Landscape Ecology Symposium, 6-10 April 2008 Madison, WI.
- Wolter, P.T.**, Townsend, P.A., Kingdon, C.C., & Sturtevant, B.R. (2007). A multivariate approach for using satellite imagery to map the composition and structure of forests susceptible to insect disturbance: Application to the simulation of carbon dynamics in northern Minnesota and Ontario (Poster), Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract B43C-1443.
- Batzli, S.A., Toyoda, E., **Wolter, P.**, Olsen, T., & Roman, G. (2006). Coupling real-time weather information and satellite imagery in support of emergency management. In Proceedings: American Association of Geographers Annual Meeting, 7-11 March, Chicago, IL.
- Wolter, P.T.**, Johnston, C.A., & Niemi, G.J. (2005). Land use change in the U.S. Great Lakes basin 1992 to 2001 (Oral Presentation), Lake Michigan: State of the Lake/State of the Bay and Annual Great Lakes Beach Association Conference, 2-3 November, Green Bay, WI.
- Wolter, P.T.**, Niemi, G.J., & Johnston, C.A. (2003). Development of environmental indicators for the U.S. Great Lakes basin using QuickBird, Radarsat, and Landsat (**poster**). 30th International Symposium on Remote Sensing of Environment, Honolulu, HI, 10-14 November.
- Wolter, P.T.** & Pastor, J. (2002). Mapping and modeling forest change in a boreal landscape (**poster**). NASA LCLUC Science Team Meeting, Washington D.C., 20-22 November.
- Hanowski, J.M., **Wolter, P.T.**, & Niemi, G.J. (2000). Effects of riparian buffers on Landscape characteristics: implications for breeding birds. International Conference: Riparian Ecology and Management in Multi-land use Watersheds, American Water Resources Association, Portland, OR, 28-31 August 2000, p. 523-528.
- Host, G.E., White, M.A. Polzer, P.L., & **Wolter, P.T.** (1997). Great Lakes assessment: Assessing landscape pattern and structure in Lake States forests. Proceedings: 7th Annual Minnesota GIS/LIS Conference, St. Cloud, MN, 1-3 October.
- Wolter, P.T.** & Mladenoff, D.J. (1995). Forest cover classification of northeastern Minnesota using multi-temporal Landsat data and National Wetlands Inventory data. (Abstract). Poster presented by P.T. Wolter at the 10th Annual U.S. Landscape Ecology Symposium, Minneapolis, MN, 22-26 April.
- Polzer, P., **Wolter, P.T.**, Mladenoff, D.J., Host, G.E., & White, M.A. (1994). Quantifying forest change dynamics using a MSS-NDVI composite for a northern Wisconsin landscape. (Abstract). Poster presented by P. Polzer and P.T. Wolter at the Ecosystem Management Strategies Conference for the Lake Superior Region, 16-19 May.
- Wolter, P.T.**, Mladenoff, D.J., Host, G.E., & Crow, T.R. (1993). Improved forest classification in the northern Lake State using multi-temporal Landsat imagery. (**Poster**, Abstract). Poster presented by P.T. Wolter at the 8th Annual U.S. Landscape Ecology Symposium, Oak Ridge, TN, March.

Peter T. Wolter

White, M.A., Mladenoff, D.J., Host, G.E., **Wolter, P.T.**, & Crow, T.R. (1993). Analyzing regional landscape structure across ownership categories and ecological land units. (Abstract). Poster presented by M.A. White at the 8th Annual U.S. Landscape Ecology Symposium, Oak Ridge, TN, March.

Reports

Niemi, G.J., Solin, J., Watters, D., and **Wolter, P.T.** (2015). Breeding Bird Inventory of the St. Louis River, Minnesota and Wisconsin, 1999. NRRI Technical Report; NRRI/TR-00-34.

Host, G., White, M.A., Polzer, P.L., and **Wolter, P.T.** (2015). Great Lakes assessment: Assessing landscape pattern and structure in Great Lakes forests. NRRI Technical Report; NRRI/TR-97-03.

Hanowski, J.M., Danz, N., Lind, J., Niemi, G.J., and **Wolter, P.T.** (2015). Wildlife species: responses to forest harvesting and management in riparian stands and landscapes. NRRI Technical Report; NRRI/TR-01-02.

Hanowski, J., Danz, N., Lind, J., Niemi, G., and **Wolter, P.** (2001). Wildlife species: Responses to forest harvesting and management in riparian stands and landscapes. Final Rep. Minn. For. Resour. Counc., St. Paul, MN.

Niemi, G.J., Johnston, C.A., and **Wolter, P.T.** (2015). Development of environmental indicators for the U.S. Great Lakes Basin using remote sensing technology. NRRI Technical Report; NRRI/TR-06-26.