

**SEBASTIAN MARTINUZZI**

Associate Scientist

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**RESEARCH INTERESTS**

Global change ◦ Biodiversity conservation ◦ Remote sensing ◦ Land-use dynamics ◦ Ecosystems  
 3D structure ◦ Ecosystem services ◦ Landscape ecology ◦ LiDAR ◦ Land use planning

**EDUCATION**


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PhD Natural Resources – University of Idaho, USA	2010
Thesis: “LiDAR Remote Sensing for Wildlife Habitat Characterization and Modeling”. Advisor: L.A. Vierling	
Licentiate in Biology with orientation in Ecology – National University of La Plata, La Plata, Argentina	2002

**RESEARCH APPOINTMENTS***(Current)*


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Associate Scientist. University of Wisconsin – Madison, USA	2016–present
Science Collaborator. NASA Goddard Space Flight Center, USA	2016–present
Adjunct Scientist. USFS International Institute of Tropical Forestry, Puerto Rico	2012–present

*(Previous)*

Assistant Scientist. University of Wisconsin – Madison, USA	2012–2016
Postdoctoral Research Associate. University of Wisconsin – Madison	2010–2012
Departmental Guest. Princeton University, Program in Science, Technology, and Environmental Policy	2014–2015
Graduate Research Assistant. University of Idaho, Department of Rangeland Ecology and Management, Moscow, ID	2006–2010
Visiting Researcher. USDA Forest Service International Institute of Tropical Forestry, Puerto Rico	2003–2006
Intern. Winrock International, Arlington, USA (2 months)	2005
Intern. Secretary of the Environment and Sustainable Development, Office of Forests, Buenos Aires, Argentina (2 months)	2002
Intern. Institute for Astronomy and Space Physics (IAFE-CONICET), Buenos Aires, Argentina	2001–2002
Undergraduate Student Researcher. National University of La Plata, Argentina, Laboratorio de Investigación de Sistemas Ecológicos y Ambientales (LISEA)	1997–2003

**AWARDS**


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University of Idaho – CNR Alumni Achievement Award	2018
University of Idaho – Outstanding Ph.D. Graduate Student 2010/11	2011

American Society for Photogrammetry and Remote Sensing – 2004 ASPRS Annual Conference Presentation Award	2004
USDA Forest Service – Volunteer Recognition Award	2004

## PUBLICATIONS

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### Peer-reviewed journal articles

- Politi, N., S. Martinuzzi, V. Miranda, S. Albanesi, P. Sardina Aragón, P. Puechagut, V.C. Radeloff, A. Pidgeon, L. Rivera. Conservation status of the threatened and endemic Rufous-throated dipper *Cinclus schulzi* in Argentina. *Bird Conservation International* (Accepted pending minor revisions).
- Rivera, L., S. Martinuzzi, N. Politi, S. Bardavid, S. de Bustos, S. Chalukian, L. Lizárraga, V. Radeloff, A. Pidgeon. National Parks influence habitat use of lowland tapirs in adjacent private lands in the Southern Yungas of Argentina. *Oryx* (Accepted)
- Godoy, M.M., S. Martinuzzi, H.A Kramer, G.E. Defossé, J. Argañaraz, V.C. Radeloff. 2019. Rapid WUI growth in a natural amenity-rich region in central-western Patagonia, Argentina. *International Journal of Wildland Fire* 28: 473-484.
- Martinuzzi, S., A.J. Allstadt, A.M. Pidgeon, C.H. Flather, W.M., Jolly, V.C. Radeloff. 2019. Future changes in fire weather, spring droughts, and false springs across U.S. National Forests and Grasslands. *Ecological Applications* 29(5):e01904.
- Runge, C.A., J.C. Withey, D.E. Naugle, J.E. Fargione, K.J. Helmstedt, A.E. Larsen, S. Martinuzzi, J.D. Tack. 2019. Single species conservation as an umbrella for management of landscape threats. *PLoS ONE* 14: e0209619
- Runge, C.A., Plantinga, A. Larsen, D. Naugle, K. Helmstedt, S. Polasky, P. Donnelly, J. Smith, T. Lark, J. Lawler, S. Martinuzzi, J. Fargione. 2019. Unintended habitat loss on private land from grazing restrictions on public lands. *Journal of Applied Ecology* 56: 52–62
- Belote, R.T, C. Carroll, S. Martinuzzi, J. Michalak, J.W. Williams, M.A. Williamson, G.H. Aplet. 2018. Assessing agreement among alternative climate change projections to inform conservation recommendations in the contiguous United States. *Scientific Reports* 8: 9441
- Radeloff, V.C., D.P. Helmers, H.A. Kramer, M.H. Mockrin, P.M. Alexandre, A. Bar-Massada, V. Butsic, T.J. Hawbaker, S. Martinuzzi, A.D. Syphard, S.I. Stewart. 2018. Rapid growth of the US wildland-urban interface raises wildfire risk. *Proceedings of the National Academy of Sciences* 115: 3314–3319
- Van Berkel, D.B., B. Rayfield, S. Martinuzzi, M.J. Lechowicz, E. White, K.P. Bell, C.R. Colocousis, K.F. Kovacs, A.T. Morzillo, D.K. Munroe, B. Parmentier, V.C. Radelof, B.J. McGill. 2018. Recognizing the 'sparsely settled forest': multi-decade socioecological change dynamics and community exemplars. *Landscape and Urban Planning* 170: 177–186
- Martinuzzi, S., O.M. Ramos-González, T.A. Muñoz-Erickson, D.H. Locke, A.E. Lugo, V.C. Radeloff. 2018. Vegetation cover in relation to socioeconomic factors in a tropical city assessed from sub-meter resolution imagery. *Ecological Applications* 28: 681–693.
- Martinuzzi, S., L. Rivera, N. Politi, B.L. Bateman, E. Ruiz de los Llanos, L. Lizarraga, M.S. de Bustos, S. Chalukian, A.M. Pidgeon, V.C. Radeloff. 2018. Enhancing biodiversity conservation in existing land-use plans with widely-available datasets and spatial analysis techniques. *Environmental Conservation* 45: 252–260
- Castro-Prieto, J, S. Martinuzzi, V.C. Radeloff, M. Quiñones, D. Helmers. 2017. Declining human population but increasing residential development around protected areas in Puerto Rico. *Biological Conservation* 209: 473–481

- Dempsey, J.A., A.J. Plantinga, J.D. Kline, J.J. Lawler, S. Martinuzzi, V.C. Radeloff, D.P. Bigelow. 2017. Effects of local land-use planning on development and disturbance in riparian areas. *Land Use Policy* 60: 16–25
- Martinuzzi, S., A.J. Allstadt, B.L. Bateman, P.J. Heglund, A.M. Pidgeon, W.E. Thogmartin, S.J. Vavrus, and V.C. Radeloff. 2016. Future frequencies of extreme weather events in the National Wildlife Refuges of the conterminous U.S. *Biological Conservation* 201:327–335
- Januchowski-Hartley, S.R., S. Martinuzzi, L. Holtz, P.B. McIntyre, V.C. Radeloff, B.M. Pracheil. 2016. Future land use threats to range-restricted fish species in the United States. *Diversity and Distributions* 22:663–671
- Morzillo, A.T., C.R. Colocousis, D.K. Munroe, K.P. Bell, S. Martinuzzi, D.B. Van Berkel, M.J. Lechowicz, B. Rayfield, B. McGill. 2015. Forests “in the middle”: interactions between drivers of change and place-based characteristics in rural forest communities. *Journal of Rural Studies* 43:79–90
- Martinuzzi, S., G.I. Gavier-Pizarro, A.E. Lugo, V.C. Radeloff. 2015. Future land-use changes and the potential for novelty in ecosystems of the United States. *Ecosystems* 18:1332–1342
- Pidgeon, A.M., L. Rivera, S. Martinuzzi, N. Politi, B. Bateman. 2015. Will representation targets based on area protect critical resources for the conservation of the Tucuman Parrot? *Condor* 117:503–517
- Neumann, W.N., S. Martinuzzi, A.B. Estes, A.M. Pidgeon, H. Dettki, G. Ericsson, V.C. Radeloff. 2015. Opportunities for the application of advanced remotely-sensed data in ecological studies of terrestrial animal movement. *Movement Ecology* 3:8
- Martinuzzi, S., V.C. Radeloff, L.N. Joppa, C.M. Hamilton, D.P. Helmers, A.J. Plantinga, D.J. Lewis. 2015. Scenarios of future land use change around United States’ protected areas. *Biological Conservation* 184:446–455
- Martinuzzi, S., J.C. Withey, A.M. Pidgeon, A.J. Plantinga, A.J. McKerrow, S.J. Williams, D.P. Helmers, V.C. Radeloff. 2015. Future land-use scenarios and the loss of wildlife habitats in the southeastern U.S. *Ecological Applications* 25:160–171
- Hamilton, C.M., W.E. Thogmartin, V.C. Radeloff, A.J. Plantinga, P.J. Heglund, S. Martinuzzi, A.M. Pidgeon. 2015. Change in agricultural land use constrains adaptation of National Wildlife Refuges to climate change. *Environmental Conservation* 42:12–19
- Ordonez, A., S. Martinuzzi, V.C. Radeloff, J.W. Williams. 2014. Combined speeds of climate and land-use change of the conterminous U.S. until 2050. *Nature Climate Change* 4:811–816
- Lawler, J.J., D.J. Lewis, E. Nelson, A.J. Plantinga, S. Polasky, J.C. Withey, D.P. Helmers, S. Martinuzzi, D. Pennington, V.C. Radeloff. 2014. Projected land-use change impacts on ecosystem services in the U.S. *Proceedings of the National Academy of Sciences* 111:7492–7497
- Martinuzzi, S., S.R. Januchowski-Hartley, B.M. Pracheil, P.B. McIntyre, A.J. Plantinga, D.J. Lewis, V.C. Radeloff. 2014. Threats and opportunities for freshwater conservation under future land use change scenarios in the United States. *Global Change Biology* 20:113–124
- Martinuzzi, S., V.C. Radeloff, J.V. Higgins, D.P. Helmers, A.J. Plantinga, D.J. Lewis. 2013. Key areas for conserving United States’ biodiversity likely threatened by future land use change. *Ecosphere* 4(5):58
- Hamilton, C.M., S. Martinuzzi, A.J. Plantinga, V.C. Radeloff, D.J. Lewis, W.E. Thogmartin, P.J. Heglund, A.M. Pidgeon. 2013. Current and future land use around a nationwide protected area network. *PLoS ONE* 8(1):e55737

- Hess, A., M.J. Falkowski, C.R. Webster, A.J. Storer, A. Pocewicz, S. Martinuzzi. 2013. Employing LiDAR and optical data to identify butterfly habitat characteristics for four contrasting butterfly species across a diverse landscape. *Remote Sensing Letters* 4:354-363
- Martinuzzi, S., W.A. Gould, L.A. Vierling, A.T. Hudak, R.F. Nelson, J.S. Evans. 2013. Quantifying tropical dry forest type and succession: substantial improvement with LiDAR. *Biotropica* 45:135-146
- Radeloff, V.C., E. Nelson, A.J. Plantinga, D.J. Lewis, D.P. Helmers, J.J. Lawler, J.C. Withey, F. Beaudry, S. Martinuzzi, V. Butsic, E. Lonsdorf, D. White, S. Polasky. 2012. Economic-based projections of future land use under alternative economic policy scenarios in the conterminous U.S. *Ecological Applications* 22:1036-1049
- Hudak, A.T., E.K. Strand, L.A. Vierling, J.C. Byrne, J.U.H. Eitel, S. Martinuzzi, M.J. Falkowski. 2012. Quantifying aboveground forest carbon pools and fluxes from repeat LiDAR surveys. *Remote Sensing of Environment* 123: 25-40
- Haines, A.M., M. Leu, L. Svancara, J.M. Scott, K.T. Vierling, S. Martinuzzi T.J. Laninga. 2012. Incorporating wildlife conservation into county comprehensive plans: a GIS approach. *Northwest Science* 86:53-70
- Vierling, L.A., S. Martinuzzi, G.P. Asner, J. Stoker, B.R. Johnson. 2011. LiDAR: providing structure. *Frontiers in Ecology and the Environment* 9:262-262
- Martinuzzi, S., L.A. Vierling, W.A. Gould, M.J. Falkowski, J.S. Evans, A.T. Hudak, K.T. Vierling. 2009. Mapping snags and understory shrubs for a LiDAR-based assessment of wildlife habitat suitability. *Remote Sensing of Environment* 113:2533-2546
- Martinuzzi, S., W.A. Gould, A.E. Lugo, E. Medina. 2009. Conversion and recovery of Puerto Rican mangroves: 200 years of change. *Forest Ecology and Management* 257:75-84
- Falkowski, M.J., J.S. Evans, S. Martinuzzi, P.E. Gessler, A.T. Hudak. 2009. Characterizing forest succession with Lidar data: an evaluation for the inland northwest USA. *Remote Sensing of Environment* 113:946-956
- Martinuzzi, S., L.A. Vierling, K.T. Vierling, W.A. Gould, A.T. Hudak. 2009. Incorporating remotely sensed tree canopy cover data into broad scale assessments of wildlife habitat distribution and conservation. *Journal of Applied Remote Sensing* 3:033568
- Vierling, K.T., L.A. Vierling, W.A. Gould, S. Martinuzzi, R.M. Clawges. 2008. Lidar: Shedding new light on habitat characterization and modeling. *Frontiers in Ecology and the Environment* 6:90-98
- Martinuzzi, S., W.A. Gould, O.M. Ramos Gonzalez, A. Martinez Robles, P. Calle Maldonado, N. Pérez-Buitrago, J.J. Fumero Caban. 2008. Mapping tropical dry forest habitats integrating Landsat NDVI, Ikonos imagery, and topographic information in the Caribbean Island of Mona. *Revista de Biología Tropical* 56:625-639
- Martinuzzi, S., W.A. Gould, O.M. Ramos Gonzalez. 2007. Land development, land use, and urban sprawl in Puerto Rico integrating remote sensing and population census data. *Landscape and Urban Planning* 79:288-297
- Martinuzzi, S., W.A. Gould, O.M. Ramos Gonzalez, B.E. Edwards. 2007. Development of a landforms model for Puerto Rico and its application for land cover change analysis. *Caribbean Journal of Science* 47:161-171

#### **Book chapters / General Technical Reports / Professional Papers**

- Muñoz-Erickson, T.A., B. Branoff, D. Flores, A.E. Lugo, P. Méndez Lazaro, E. Meléndez-Ackerman, A. Ramírez, O. Ramos, L. E. Santiago, J. Vallejo, S. Martinuzzi, C. Nytch, M.

- Ramsey, and S Olivero. 2015. San Juan ULTRA: Social-Ecological System Change, Vulnerability, and the Future of a Tropical City - Year 5 Report. USDA Forest Service, International Institute of Tropical Forestry. Río Piedras, Puerto Rico.
- Martinuzzi, S., A.E. Lugo, T.J. Brandeis, E.H. Helmer. 2013. Case study: Geographic distribution and level of novelty of Puerto Rican forests. Chapter 9 in R.J. Hobbs, E. Higgs, and C. Hall (Editors.) *Novel Ecosystems: intervening in the new ecological world order*. Wiley-Blackwell
- Gould W.A., S. Martinuzzi, I.K. Parés-Ramos. 2012. Land cover, population dynamics, and land use change in Northeastern Puerto Rico. Chapter 7 in S.F. Murphy and R.F. Stallard (Editors) *Water Quality and Landscape Processes of Eastern Puerto Rico: A Comparison of Four Humid-Tropical Forested and Developed Watersheds*. U.S. Geological Survey Professional Paper 1789, 292 pp.
- Aycrigg, J, G. Beavais, T. Gotthard, K. Boykin, S. Williams, S. Lenmartz, K.T. Vierling, S. Martinuzzi, L.A. Vierling. 2010. Mapping species ranges and distribution models across de United States. In: J. Maxwell et al. (Editors). *U.S. Geological Survey Gap Analysis Bulletin 18- USGS/BRD/Gap Analysis Program*, Moscow, ID
- Gould, W.A., L.A. Vierling, S. Martinuzzi. 2010. Integrating LiDAR in modeling gap habitats – Project Report. In: J. Maxwell et al. (Editors). *U.S. Geological Survey Gap Analysis Bulletin No. 17. USGS/BRD/Gap Analysis Program*, Moscow, ID
- Martinuzzi, S., L.A. Vierling, W.A. Gould, K.T. Vierling. 2009. Improving the characterization and mapping of wildlife habitats with LiDAR data: measurement priorities for the Inland Northwest, USA. In: J. Maxwell et al., (Editors). *U.S. Geological Survey Gap Analysis Bulletin No. 16. USGS/BRD/Gap Analysis Program*, Moscow, ID
- Gould, W.A., C. Alarcón, B. Fevold, M.E. Jiménez, S. Martinuzzi, G. Potts, M. Quiñones, M. Solórzano, E. Ventosa. 2008. *The Puerto Rico Gap Analysis Project - Volume 1: Land cover, vertebrate species distributions, and land stewardship*. U.S. Forest Service IITF-GTR-39. Río Piedras, PR, 185 pp.
- Grau H.R., M. Perez Ceballos, S. Martinuzzi, X. Encarnacion, T.M. Aide. 2008. Cambios socioeconomicos y la regeneracion de bosques en Republica Dominicana. Pages 221–227 in M. Gonzáles Espinosa, J.M. Rey Benayas, N. Ramírez-Marcial (Editors). *Restauración de bosques en América Latina*. Mundi-Prensa, México
- Gould, W.A., C. Alarcón, B. Fevold, M.E. Jiménez, S. Martinuzzi, G. Potts, M. Solórzano, E. Ventosa. 2007. *Puerto Rico Gap Analysis Project – Final Report*. USGS, Moscow, ID and the USDA Forest Service International Institute of Tropical Forestry, Río Piedras, PR. 159 pp. and 8 appendices
- Martinuzzi, S., W.A. Gould, O.M. Ramos Gonzalez. 2007. *Creating cloud-free Landsat ETM+ data sets in tropical landscapes: cloud and cloud-shadow removal*. U.S. Forest Service IITF-GTR-32, Río Piedras, PR, 12 pp.
- Pearson, T. S. Brown, N. Martin, S. Martinuzzi, S. Petrova, I. Monroe, S. Grimland, A. Dushku. 2007. *Baseline greenhouse gas emissions and removal for forest and agricultural lands in Washington*. Report to West Coast Regional Carbon Sequestration Partnership, Winrock International, Ecosystem Services Unit, Arlington, VA
- Pearson, T., S. Brown, N. Martin, S. Martinuzzi, S. Petrova, I. Monroe, S. Grimland, A. Dushku. 2007. *Baseline Greenhouse Gas Emissions and Removals for Forest and Agricultural Lands in Arizona*. Report to West Coast Regional Carbon Sequestration Partnership, Winrock International, Ecosystem Services Unit, Arlington, VA

Pearson, T., S. Brown, N. Martin, S. Martinuzzi, S. Petrova, I. Monroe, S. Grimland, A. Dushku. 2007. Baseline Greenhouse Gas Emissions and Removals for Forest and Agricultural Lands in Oregon. Report to West Coast Regional Carbon Sequestration Partnership, Winrock International, Ecosystem Services Unit, Arlington, VA

### **Research Map Publications**

- Martinuzzi, S., S.I. Stewart, D.P. Helmers, M.H. Mockrin, R.B. Hammer, V.C. Radeloff. 2015. The 2010 wildland-urban interface of the conterminous United States. Research Map NRS-8. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 124 p. [includes pull-out map].  
(*This report was included in US President B. Obama Executive Order 13728 - Wildland-Urban Interface Federal Risk Mitigation, May 18, 2016*)
- Quiñones, M., W.A. Gould, J. Castro-Prieto, S. Martinuzzi. 2013. Spatial analysis of Puerto Rico's terrestrial protected areas. Scale 1:260000. IITF-RMAP-03. Rio Piedras, PR: US Department of Agriculture Forest Service, International Institute of Tropical Forestry
- Martinuzzi, S., W.A. Gould, O.N. Ramos Gonzalez, M. Quiñones, M.E. Jimenez. 2008. Urban and rural land use in Puerto Rico. Scale 1:260000. IITF-RMAP-01. Rio Piedras, PR: US Department of Agriculture Forest Service, International Institute of Tropical Forestry
- Gould, W.A., M.E. Jimenez, G.S. Potts, M. Quiñones, S. Martinuzzi. 2008. Landscape units of Puerto Rico: Influence of climate, substrate, and topography. Scale 1:260000. IITF-RMAP-06. Rio Piedras, PR: US Department of Agriculture Forest Service, International Institute of Tropical Forestry
- Gould, W.A., S. Martinuzzi, O.M. Ramos Gonzalez. Developed land cover of Puerto Rico. Scale 1:260000. IITF-RMAP-10. Rio Piedras, PR: US Department of Agriculture Forest Service, International Institute of Tropical Forestry
- Gould, W.A., A. Martinuzzi, O.M. Ramos Gonzalez. 2008. High and low density development in Puerto Rico. Scale 1:260000. IITF-RMAP-11. Rio Piedras, PR: US Department of Agriculture Forest Service, International Institute of Tropical Forestry
- Gould, W. A., S. Martinuzzi, B.M. Fevold, O.M. Ramos Gonzalez, O. Developed areas by watershed in Puerto Rico. Map. USDA Forest Service, International Institute Tropical Forestry, Río Piedras, Puerto Rico. Version March 2005
- Martinuzzi S., W.A. Gould, B.R. Edwards. Landforms of the Puerto Rican Archipelago. Map. USDA Forest Service, International Institute of Tropical Forestry, Rio Piedras, Puerto Rico. Version December 2004
- Edwards, B.R., W.A. Gould, S. Martinuzzi. Fisiografía del Archipiélago de Puerto Rico. Map. USDA Forest Service, International Institute of Tropical Forestry, Rio Piedras, Puerto Rico. Version March 2004

### **Thesis**

Martinuzzi, S. 2010. LiDAR remote sensing for wildlife habitat characterization and modeling: Incorporating remotely sensed vegetation structure into current assessment of animal distribution and conservation. Ph.D. Thesis, University of Idaho, 148 pp.

### **GIS databases**

Radeloff, V.C., D.P. Helmers, H.A. Kramer, M.H. Mockrin, P.M. Alexandre, A. Bar-Massada, V. Butsic, T.J. Hawbaker, S. Martinuzzi, A.D. Syphard, S.I. Stewart. 2017. The 1990-2010 wildland-urban interface of the conterminous United States - geospatial data. 2nd

- Edition. Fort Collins, CO: Forest Service Research Data Archive.  
<https://doi.org/10.2737/RDS-2015-0012-2>
- Martinuzzi, S., Stewart, S.I., Helmers, D.P., Mockrin, M.H., Hammer, R.B., Radeloff, V.C.  
 2015. The 2010 wildland-urban interface of the conterminous United States - geospatial  
 data. Fort Collins, CO: Forest Service Research Data Archive.  
<http://dx.doi.org/10.2737/RDS-2015-0012>
- U.S. Geological Survey GAP program – Puerto Rico GAP Analysis Project, available at  
<http://gapanalysis.nbio.gov>

## CONFERENCE PRESENTATIONS (since 2007)

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- McCarley, R.T., J.L. Aycrigg, R.T. Belote, S. Martinuzzi. The wild wild (North) West:  
 Assessing future land use and climate change in wilderness areas of the Northwestern U.S.  
 90<sup>th</sup> Annual Meeting of the Northwest Scientific Association, Lewis-Clark State College,  
 Lewiston, ID, March 26 – 29, 2019.
- Martinuzzi, S., D.C. Morton, M. Keller, M. Uriarte, B. Cook. Landscape-scale variability in  
 tropical forest turnover: lessons from lidar for vegetation demographic models. AGU Fall  
 Meeting, Washington, D.C., Dec 10–14, 2018.
- Morton, D., B. Cook, M. Keller, M. Alonzo, L. Corp, M. Longo, S. Martinuzzi, H. Andersen.  
 Tracking tree mortality from Alaska to the Amazon with repeat airborne lidar surveys. EGU  
 General Assembly 2018, Vienna, Austria, April 8–13, 2018.
- Martinuzzi, S., B. Cook, L. Corp, D. Morton, E. Helmer, M. Keller. Assessing biomass  
 accumulation in second growth forests of Puerto Rico using airborne lidar. AGU Fall  
 Meeting, New Orleans, Dec 11–15, 2017.
- Godoy, M.M., G. Defosse, S. Martinuzzi, H.An. Kramer, J. Argañaraz, V. Radeloff. Wildfires  
 and wildland–urban interface in Andean Patagonia, Argentina: first assessment in a rapid  
 growing community. 7th AFE Intl. Fire Congress, Orlando, Florida, 28 Nov. to 2 Dec, 2017.
- Martinuzzi, S., B. Cook, L. Corp, D. Morton, E. Helmer, M. Keller. Quantifying heterogeneous  
 biomass accumulation in tropical secondary forests. Silvilaser 2017, Blacksburg, Virginia,  
 October 10-12, 2017.
- Paynter, I., B. Cook, D. Morton, S. Martinuzzi, D. Lagomasino, S. Serbin. Occurrence of non-  
 native *Spathodea campanulata* in Puerto Rico. Silvilaser 2017, Blacksburg, Virginia,  
 October 10-12, 2017.
- Rivera, L., S. Martinuzzi, N. Politi, L. Lizárraga, A. Pidgeon, V. Radeloff. Aplicación del  
 análisis de huella humana a la gestión y planificación territorial en las Yungas Australes. V  
 Congreso Nacional de Conservación de la Biodiversidad, Las Grutas, Argentina, Sept 19-22,  
 2017.
- Rivera, L., N. Politi, S. Martinuzzi, L. Lizárraga, S. Chalukian, S. de Bustos, E. Ruiz de los  
 Llanos, B. Bateman, V. Radeloff, A. Pidgeon. Identificación de Áreas prioritarias de  
 conservación para especies amenazadas de las Yungas australes de Salta y Jujuy. V Congreso  
 Nacional de Conservación de la Biodiversidad, Las Grutas, Argentina, Sept 19-22, 2017.
- Januchowski-Hartley, S., C. Jezequel, S. Martinuzzi, P. Tedesco. Crossing boundaries to sustain  
 freshwater ecosystems, services, and values in an urbanizing world. International Congress  
 for Conservation Biology, Cartagena, Colombia, July 23-27, 2017
- Martinuzzi, S., B. Cook, L. Corp, D. Morton, J. Nagol, E. Helmer, S. Serbin, M. Keller. NGE-  
 Tropics: Recent Remote Sensing Campaign in Puerto Rico. DOE Subsurface

- Biogeochemical Research and Terrestrial Ecosystem Science Joint Meeting, Potomac, MD, April 25-26, 2017.
- Derguy, M.R., A.A. Drozd, M.F. Arturi, S. Martinuzzi, L. Toledo, J.L. Frangi. Aplicacion del modelo de clasificacion ecologica de Holdridge para la Republica Argentina a partir del analisis especial de datos. VII Simposio Internacional SELPER, Puerto Iguazú, Argentina, November 7-11, 2016
- Keller, M., S. Martinuzzi, D. Morton, B. Cook, L. Corp, J. Nagol, E. Helmer, S. Serbin, R. Norby. Preliminary Flight Plans and Synergies for the Puerto Rico Airborne Campaign. 2016 NGEE-Tropics Annual Meeting. Washington, DC, September 21-22, 2016
- Radeloff, V., S. Martinuzzi. Future land use change in the United States. North American Congress for Conservation Biology. Madison, WI, July 17-20 2016
- Martinuzzi, S., A. Allstadt, B. Bateman, P. Heglund, A. Pidgeon, W. Thogmartin, S. Vavrus, V. Radeloff. Future changes in extreme weather across U.S Wildlife Refuges. North American Congress for Conservation Biology. Madison, WI, July 17-20 2016
- Pidgeon, A., V. Radeloff, C. Flather, A. Venegas Castro, B. Bateman, S. Vavrus, A. Allstadt, J. Gorzo, S. Martinuzzi, P. Heglund. Evaluating change in bird populations in response to climate change. North American Congress for Conservation Biology. Madison, WI, July 17-20 2016.
- Heglund, P., A. Pidgeon, B. Bateman, V. Radeloff, S. Vavrus, R. Akcakaya, C. Flather, W. Thogmartin, A. Allstadt, T. Albright, S. Martinuzzi, J. Gorzo. Thinking like mountains: using environmental change science to protect native biodiversity. North American Congress for Conservation Biology. Madison, WI, July 17-20 2016.
- Castro-Prieto, J., S. Martinuzzi, M. Quiñones, V.C. Radeloff, W.A. Gould. Declining population but increasing housing pressure surrounding natural protected areas in Puerto Rico. International Association for Landscape Ecology's (US-IALE) Annual Meeting. Asheville, NC, April 3-7, 2016
- Rojas, I.M., S. Martinuzzi, A.M. Pidgeon, V.C. Radeloff. Contribution of riparian forest to structural corridors of Chile. International Association for Landscape Ecology's (US-IALE) Annual Meeting. Asheville, NC, April 3-7, 2016
- Ordonez, A., S. Martinuzzi, V.C. Radeloff, J.W. Williams. Combined speeds of climate and land-use change of the conterminous U.S. until 2050. The 2015 ESA Annual Meeting, August 9-14, 2015
- Vierling, L.A., S. Martinuzzi, A.T. Hudak, J.U.H. Eitel, J. Vogeler, T. Magney, K.T. Vierling. Earth in 3-D: shedding new light on environmental studies using lasers. Whitman College, Walla Walla, WA, 17 October 2013 (invited)
- Vierling, L.A., S. Martinuzzi, A.T. Hudak, J.U.H. Eitel, J. Vogeler, H. Greaves, T. Magney, N. Boelman, K. Griffin, K.T. Vierling. Lasers, Ecology, and YOU. University of Alaska Fairbanks/Toolik Field Station LTER, North Slope, AK, 16 July 2013 (invited)
- Vierling, L.A., S. Finch, K.T. Vierling, E.K. Strand, A.T. Hudak, J. Vogeler, S. Martinuzzi, J.U.H. Eitel, M.J. Falkowski. Lasers on the Landscape: Quantifying 3-D ecosystem structure to map continuous surfaces of aboveground carbon, avian species richness, and tree species distributions. AGU Fall Meeting, San Francisco, CA, December 2012 (invited)
- Vierling, L.A., K.T. Vierling, S. Martinuzzi, J. Vogeler, A.T. Hudak. MacArthur's Ladder: Advancing the role of LiDAR in assessing and conserving biodiversity. SilviLaser 2012, Sept. 16-19 September 2012 –Vancouver, Canada



- Hudak, A.T, E. Strand, L.A. Vierling, J. Byrne, J.U.H. Eitel, S. Martinuzzi M.J. Falkowski. Estimating aboveground forest carbon pools and fluxes from repeat field and LiDAR surveys. Canadian Forest Service Northern Forestry Centre, Edmonton, Alberta, Canada, 29 Feb 2012
- Vierling, L.A., S. Martinuzzi, P. Adam, S. Finch, A.T. Hudak, J.U.H. Eitel, E.K. Strand, M.J. Falkowski, J. Vogeler, K.T. Vierling. Lasers on the landscape: Quantifying 3-D ecosystem structure to map continuous surfaces of carbon and species distributions. University of Wisconsin Department Forest and Wildlife Ecology Visiting Seminar, Madison, WI, 17 February 2012 (invited)
- Hess, A.N, M.J. Falkowski, C.R. Webster, A.J. Storer, A. Pocewicz, S. Martinuzzi. Evaluating relationships between LiDAR-derived vegetation structure and butterfly density to improve butterfly habitat assessments. Michigan Technological University Graduate Research Colloquium, Houghton, MI, USA, Feb. 2-3, 2012
- Pennington, D.N., E. Nelson, S. Polasky, A.J. Plantinga, D.J. Lewis, J. Whithey, V.C. Radeloff, J.J. Lawler, D. White, S. Martinuzzi, D.P. Helmers, E. Lonsdorf. Tradeoffs among carbon, biodiversity, and economic returns for future land-use scenarios in the conterminous United States. AGU Fall Meeting 2011, San Francisco, CA, USA
- Hamilton, C., S. Martinuzzi, P. Heglund, W. Thogmartin, D. Helmers, A. Pidgeon, V. Radeloff. Future land use around the U.S. Fish and Wildlife Service National Wildlife Refuges. The Wildlife Society – 18<sup>th</sup> Annual Conference, Waikoloa, Hawaii, November 5-10, 2011
- Radeloff, V.C., E. Nelson, A.J. Plantinga, D.J. Lewis, D.P. Helmers, J.J. Lawler, J.C. Withey, F. Beaudry, S. Martinuzzi, V. Butsic, E. Lonsdorf, D. White, S. Polasky. Economic-based projections of future land use under alternative economic policy scenarios in the conterminous U.S. The National Academies - Keck Future Initiative Conference: Ecosystem Services: Charting a path to sustainability, Irvine CA, Nov 10-13 2011
- Hamilton, C., S. Martinuzzi, P. Geglund, A. Pidgeon, V.C. Radeloff. Looking to the future: Housing growth and land use change around the National Wildlife Refuge system. US-IALE 26th Annual Symposium, Portland, Oregon, 3-7 Apr 2011
- Hudak, A.T., E.K. Strand, L.A. Vierling, J.U.H. Eitel, S. Martinuzzi. Multi-temporal LiDAR for mapping change in aboveground carbon pools in an actively managed coniferous forest. US-IALE 26th Annual Symposium, Portland, Oregon, 3-7 Apr 2011
- Vierling, L.A., S. Martinuzzi, A.T. Hudak, S.R. Garrity, J.U.H. Eitel, E.K. Strand, M.J. Falkowski, J. Vogeler, K.T. Vierling. The role of remote sensing data in understanding agro-ecological legacies. CATIE/PCP/UI Conference: From the Leaf to the Landscape: Field and Remote Sensing Approaches for Understanding Vegetation Structure and Dynamics. CATIE, Turrialba, Costa Rica, 12-13 May 2011
- Vierling, L.A., S. Martinuzzi, A.T. Hudak, S.R. Garrity, J.U.H. Eitel, E.K. Strand, M.J. Falkowski, K.T. Vierling. Landsat Time Series-based Vegetation Change: Context for Understanding Ecological Legacies. Landsat Science Team Semi-Annual Meeting, Boise, ID, 16 June 2010
- Martinuzzi, S. L.A. Vierling, A.T. Hudak, R. Nelson, J. Evans. Current Lidar applications in the Guánica Tropical Dry Forest Reserve. Silvilaser 2009 Conference, Oct. 14-16, Texas A&M University, College Station, TX, USA
- Vierling, L.A, K.T. Vierling, S. Martinuzzi (organizers). “Lidar Measures of Ecosystem Structure: Implications for Biodiversity and Wildlife Habitat Modeling”. Special session 00S-36, ESA Annual Meeting, Albuquerque, New Mexico, USA, August 2-7, 2009

- Martinuzzi, S., L.A. Vierling, W.A. Gould, M.J. Falkowski, J. Evans, A.T. Hudak, K.T. Vierling. Mapping snags and understory shrubs for a LiDAR-based assessment of wildlife habitat suitability. 00S-36, ESA Annual Meeting, Albuquerque, New Mexico, USA, August 2-7, 2009
- Martinuzzi, S., L.A. Vierling, W.A. Gould, M.J. Falkowski, J. Evans, A.T. Hudak, K.T. Vierling. Characterizing Wildlife Habitat With LiDAR Data: Distribution Mapping Of Snags And Understory Shrubs. 2008 AGU Fall Meeting, San Francisco CA, USA
- Martinuzzi, S., L.A. Vierling, W.A. Gould, J. Aycrigg, K.T. Vierling, A.T. Hudak, M.J. Falkowski. The use of LiDAR data in the Gap Analysis Program: current activities and measurement priorities for improving broad-scale wildlife species distribution assessments. Second National LiDAR Initiative Meeting, May21-22 2008, USGS Headquarters, Reston, VA, USA
- Hudak, A., J. Evans, D. McNamara, M. Falkowski, J. Jensen, S. Martinuzzi, L. Vierling, T. Link. Forestry applications of LiDAR in the Interior Northwest. Second National LiDAR Initiative Meeting, May21-22 2008, USGS Headquarters, Reston, VA, USA
- Falkowski, M.J., J.S. Evans, S. Martinuzzi, P.E. Gessler, A.T. Hudak. Classifying forest succession with LiDAR data. 12th Biennial USFS Remote Sensing Applications Conference, April 15-17, 2008, Salt Lake City, Utah, USA
- Gould, W.A., M. Solórzano, C. Alarcón, S. Martinuzzi, G. Potts. Conservation priorities in Puerto Rico. National Gap Analysis Conference, Asheville, NC, USA, September 2007
- Martinuzzi, S., L.A. Vierling, W.A. Gould, A.T. Hudak, R.F. Nelson, K.T. Vierling. The use of lidar and high-resolution remote sensing data to assess vegetation mapping and wildlife habitat modeling. National Gap Analysis Conference, Asheville, NC, USA, September 2007
- Martinuzzi, S., L.A. Vierling, W.A. Gould, K.T. Vierling, A.T. Hudak, R.F. Nelson. Potential of LIDAR data to improve species modeling and habitat characterization. Ecological Society of America Fall Meeting. San Jose, CA, USA, August 2007
- Martinuzzi, S., K.T. Vierling, L.A. Vierling, R. Clawges, W.A. Gould. Lidar technology – applications and potential for wildlife habitat studies. Idaho Chapter of the Wildlife Society Annual Meeting, March 5-7, 2007, Pocatello, ID, USA, & University of Idaho Wildlife Seminars, April 24, 2007
- Gould, W., M. Solórzano, M. Jiménez, S. Martinuzzi, B. Fevold, Brick, E. Ventosa Febles. Use of Gap Analysis for conservation and management of the avifauna in Puerto Rico. VIII Congreso de Ornitología Neotropical, Maturin, Venezuela, May 13-19 2007

## TEACHING EXPERIENCE

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### Invited lectures

- 2013 University of Wisconsin-Madison, GEOG 302. *LiDAR, fundamentals and applications.*
- 2013 Paul Smith's College, GIS 350. *LiDAR, fundamentals and applications.*
- 2012 University of Wisconsin-Madison, GEOG 377. *Spatial Modeling with LiDAR Data.*
- 2012 University of Wisconsin-Madison, FOREST 300. *LiDAR remote sensing for forest inventories.*

### Teaching Assistant

- 2009 University of Idaho, FOR-472: Remote Sensing of Environment.
- 2002 National University of La Plata, General Ecology.

## ADVISING

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- Maria Rosa Derguy, Universidad Nacional de Avellaneda, Argentina, & CONICET. Ph.D. Thesis committee member. In progress (started 2015).
- Edgar Andrés Estrada, Universidad de Antioquia, Colombia. Ph.D. Thesis committee member (2014)
- Edgar Andrés Estrada, Universidad de Antioquia, Colombia. Master's Thesis committee member. Finished (2014)

## PROFESSIONAL ACTIVITIES

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**Ad hoc manuscript reviewer:** Acta Científica, Ambio, Applied Vegetation Science, Biological Conservation, Bioscience, Canadian Journal of Forest Research, Canadian Journal of Remote Sensing, Cities and the Environment, Chelonian Conservation and Biology, Conservation Letters, Diversity and Distributions, Ecological Applications, Ecology and Society, Ecosphere, Environment, Development and Sustainability, Environmental Monitoring and Assessment, Environmental Research Communications, Environmental Research Letters, European Journal of Remote Sensing, Facets, Forest Ecology and Management, Functional Ecology, Global Environmental Change, Habitat International, International Journal of Applied Earth Observation and Geoinformation, International Journal of Digital Earth, International Journal of Remote Sensing, Journal of Applied Ecology, Journal of Field Ornithology, Journal of Forestry, Journal of Land Use Science, Journal of Rural Studies, Landscape and Urban Planning, Plant Ecology, PLOS ONE, PNAS, Progress in Physical Geography, Remote Sensing, Remote Sensing in Ecology and Conservation, Remote Sensing Letters, Remote Sensing of Environment, Science of the Total Environment, Urban Forestry & Urban Greening, Wetlands.

### Working groups:

“Land-use change and conservation policy in Brazil and the U.S. for biodiversity, ecosystem services and economic returns” – National Center for Ecological Analysis and Synthesis (NCEAS); 2015-2017 (participant).

“Rural forest communities at a tipping point? Trends and actionable research opportunities” – Socio-environmental Synthesis Center (SESYNC); 2012-2014 (participant).

**Proposal Review for** National Science Foundation; McIntire-Stennis Program; NOAA Sea Grant

**Member** Society of Conservation Biology, American Geophysical Union.

## MEDIA COVERAGE

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*The Guardian*. After Fort McMurray: where are the world's most fire-prone cities? May 16, 2016

*NASA Earth Observatory*. Mona Island article. Feb. 28, 2016

*USA Today*. One in three California homes prone to wildfires. Sept. 15, 2015

*Wisconsin Public Radio*. Rural Homebuilding Heightens Fire Risk. Sept. 17, 2015

*ScienceDaily*. As wildland-urban interface grows, so does risk to people and habitats. Sept. 15, 2015.

*SummitCountyVoice*. Forest Service maps development boom in fire-prone exurbs. Sept. 12, 2015.

- Ruidoso News*. Maps show expanding Wildland Urban Interface. Sept. 17, 2015
- The Auk / The Condor* (blog). Protected Areas Only Work if They Include What Threatened Species Need. Sept. 09, 2015.
- Wisconsin Public Radio*. New UW Experiment Models Effects Of Climate Change, Land Use Change On Ecosystem. Aug. 19, 2014.
- ClimateWire*. Land use will complicate the speed of climate change as a threat to species. Aug. 19, 2014.
- University of Wisconsin News*. No one-size-fits-all approach in a changing climate, changing land. Aug. 18, 2014.
- On Wisconsin Magazine*. Putting freshwater species on the map. Spring 2014 Issue.
- University of Wisconsin News*. Study puts freshwater biodiversity on the map. Oct 16, 2013.
- Scientific American*. America's Island of Enchantment: Environmental hazards and hope in Puerto Rico". May 09, 2011.
- The University of Puerto Rico Seagrass Blog*. Strategies for mangrove conservation in Puerto Rico. May 24, 2011.
- El Nuevo Día*. Confirmado desde el cielo el desparrame urbano. 2005.

## REFERENCES

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- Volker C. Radeloff – University of Wisconsin-Madison (radeloff@wisc.edu)
- Ariel E. Lugo – USDA Forest Service International Institute of Tropical Forestry  
(alugo@fs.fed.us)
- Lee A. Vierling – University of Idaho (leev@uidaho.edu)
- William A. Gould – USDA Forest Service International Institute of Tropical Forestry  
(wgould@fs.fed.us)