

Dr. Hongqing Wang

Center for Louisiana Inland Water Studies

University of Louisiana at Lafayette

635 Cajundome Blvd, 126 Abdalla Hall, Lafayette, LA 70506

Tel: 850-443-7870, Fax: 337-482-0698, E-mail: hxw7894@louisiana.edu

PERSONAL INFORMATION

Married, U.S. Permanent Resident

EDUCATION

Ph.D. 2001, **Systems Ecology**, State University of New York (SUNY) - College of Environmental Science and Forestry (ESF), and Syracuse University, Syracuse, New York.

M.S. 1991, **Agro-Ecology**, South China Agricultural University (SCAU), Guangzhou, China.

B.S. 1985, **Environmental Biology**. Hebei University, Baoding City, China.

PRINCIPAL FIELDS OF INTERESTS

Systems Ecology; Aquatic Ecology; Landscape Ecology; Forest Ecology; Hydrology; Ecosystem Biogeochemistry; Spatially-Explicit Process-based Ecosystem & Biogeochemical Modeling; Population Modeling; Land Use/Land Cover Mapping/Modeling/Change Detection; Hydrodynamic and Water Quality Modeling; Land-Water-Atmosphere Interaction; Natural and Anthropogenic Disturbances on Ecosystems; Climate Change; Sea Level Rise; Remote Sensing; Biogeography; Geostatistics; Geographic/Spatial Analysis.

RESERCH EXPERIENCE

Assistant Professor – Research, 2007 – Present, Center for Louisiana Inland Water Studies, Department of Civil Engineering, University of Louisiana at Lafayette, Lafayette, Louisiana.

- Coastal ecosystem hydrodynamic and water quality modeling;
- Coastal ecosystem biogeochemistry studies through field investigation, modeling and application of GIS, remote sensing and GPS;
- Coastal land use and land cover mapping/change detection.

Research Associate (Ecological modeler), 2004 – 2007, Environmental Cooperative Science Center (ECSC), NOAA, and Environmental Sciences Institute (ESI), Florida A&M University, Tallahassee, Florida.

- Modeling soil pore water salinity distribution along topographic gradients in tidal salt marshes in Atlantic and Gulf coasts;
- Simulating the effects of environmental changes including change in freshwater inflow on Easter oyster production in Apalachicola Bay, Florida, using a hydrodynamic–oyster population model;
- Coastal water quality and tidal marsh vegetation mapping, habitat suitability modeling, and landscape change detection using remote sensing;
- Modeling the influences of climate change, sea-level rise, and water management strategy on soil salinity, organic matter, primary productivity in salt marshes of Apalachicola Bay Ecosystem, Florida in Northeast of Gulf Coast;

Postdoctoral Research Associate (Landscape Ecologist), 2001 – 2004, Department of Geography and Environmental Systems, University of Maryland, Baltimore County (UMBC).

- Helped develop methods for detecting environmental changes at fine scales including high-resolution Ecotope mapping, and accuracy assessment;
- Landscape change detection;
- Effects of landscape change on biogeochemistry in agro-ecosystems.

Research Project Assistant (Ecosystem Ecologist), 1997 – 2001, SUNY ESF, Syracuse, NY. Conducted modeling tasks for the Luquillo Experimental Forest (LUQ), Puerto Rico, as part of the Long-Term Ecological Research (LTER):

- Modeling the spatial and temporal variability in climate across the Luquillo Mountains;
- Modeling the spatial and temporal dynamics of primary productivity, soil organic carbon, nitrogen, and their responses to hurricane disturbances;
- Modeling the hydrological processes in the Bisley watershed;
- Modeling patterns of soils in transporting DOC to streams in the Bisley watershed.

TEACHING EXPERIENCE

Student advisor, Summer & Fall, 2006, Water quality modeling using BASINS, FAMU.

Instructor, Summer 2006. Application of GIS, RS and GPS in environmental science, FAMU

Guest Lecturer, Summer 2005, Ecological Modeling, FAMU.

Student advisor, 2002-2003. Long-term biogeochemical changes in rural landscapes. UMBC.

Guest Lecturer, Spring 2003, Landscape Ecology, UMBC.

Training Instructor, Fall, 2002. Land use change detection using GIS, RS and GPS, UMBC.

Teaching Assistant, Fall 1998, Systems Ecology, SUNY ESF.

Teaching Assistant, Spring 1999, Ecosystems, SUNY ESF.

Instructor, Spring 1986, Agro-Ecology, SCAU.

RESEARCH GRANTS

Current Project:

Participating Scientist, *The Arthur R. Marshall Loxahatchee National Wildlife Refuge Hydrodynamic and Water Quality Model*, Grant from the United States Fish and Wildlife Services (DOI).

Past Projects:

Project Coordinator and Participating Scientist, *Development of Coupled Physical and Ecological Models for Stress-Response Simulations of the Apalachicola Bay Regional Ecosystem*.

EPA STAR Grant (with Mark A. Harwell, Ping Hsieh, Wenrui Huang, Elijah Johnson, Katherine Milla, Glynnis Bugna, Kevin Dillon, and Jack Gentile). \$749,691 (2004-2007).

Participating Scientist, *Ecological and Hydrological Modeling in Apalachicola Bay, Florida*.

Funded by NOAA to ECSC (led by FAMU in collaboration with 7 universities) (PIs: Larry Robinson, Mark A. Harwell, Ambrose Anoruo, David Leston, Michael Reiter, John Schalles, Paul Tchounwou, and Anthony Wilbon). \$5,000,000 (2004-2007).

Participating Scientist, *Long-Term Biogeochemical Changes in China's Anthropogenic*

Landscapes. NSF, Ecosystem Studies Cluster (PI: Erle C. Ellis, conducted in collaboration with Linzhang Yang, Hua Ouyang, and Xu Cheng). \$801,545 (2000-2006).

Participating Scientist, *Modeling the Spatial and Temporal Variations in Climate and Soil*

Organic Carbon in the Luquillo Experimental Forest, Puerto Rico. NSF-LTER (PIs: Ariel E. Lugo, Jess Zimmerman, Fred Scatena, Robert Waide, and Nicolas Brokaw). \$2,949,771 (1996-2004).

Participating Scientist, *Modeling the Spatial and Temporal Variations in Soil Organic Carbon in the Luquillo Experimental Forest, Puerto Rico*. USDA Forest Service Southern Station Grant (PIs: Charles A.S. Hall, Ariel E. Lugo, and Jess Zimmerman). \$24,000 (1998-2000).

Participating Scientist, *Modeling of the Patterns of Soils in Transporting DOC to Streams in the Bisley Watershed, Luquillo Experimental Forest, Puerto Rico*. Department of Environmental and Forest Biology, SUNY ESF. \$1,000 (2000).

Participating Scientist, *Spatial modeling of soil physical properties in a tropical forest*. Environmental Research Program, SUNY ESF. \$1,200 (1998).

HONORS AND AWARDS

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| 2000 | Outstanding Doctoral Candidate Travel Award, LTER-LUQ, NSF. |
| 1997-2001 | Doctoral Fellowship, LTER-LUQ, NSF and USFS. |
| 1995 | Scientific and Technical Progress Award, Tianjin City Government, China. |
| 1994&1993 | Scientific and Technical Progress Award, The Ministry of Agriculture, China. |
| 1989 | Award of Excellent Achievement on Rural Energy and Agro-environmental Protection, The Ministry of Agriculture, China. |

PROFESSIONAL ASSOCIATION MEMBERSHIPS

- Sigma Xi, The Scientific Research Society
- Ecological Society of America (ESA)
- American Geophysical Union (AGU)
- International Society of Ecological Modeling (ISEM)
- ASPRS: The Imaging & Geospatial Information Society
- International Association of Landscape Ecology (IALE)

MANUSCRIPTS

Erle C. Ellis, **Wang, Hongqing**, Peng, K., Xiao, H. S., Liu, X. P., Li, S. C., Ouyang, H., Cheng, X., and Yang, L. Z., in review, High-resolution mapping reveals unanticipated increases in perennial vegetation cover within human dominated landscapes. *Proceedings of the National Academy of Sciences of the United States of America*, XX, XXX-XXX.

Hongqing Wang, Christine M. Hladik, Wenrui Huang, Katherine Milla, Lee Edmiston, Mark A. Harwell and John F. Schalles. Mapping Chlorophyll-*a* and Total Suspended Solids in Apalachicola Bay, Florida Using MODIS Terra 250 m Imagery". *International Journal of Ecology & Development* (in review).

Hongqing Wang, Mark A. Harwell, Wenrui Huang, Lee Edmiston, Elijah Johnson, Ping Hsieh, Katherine Milla, John Christensen, R.J. Livingston, Jessica Stewart, and Xiaohai Liu. Modeling Eastern oyster (*Crassostrea virginica*) population dynamics in response to changing environment in Apalachicola Bay, Florida. *Journal of Coastal Research* (in preparation).

Hongqing Wang, Ping Hsieh, Mark A. Harwell, and Wenrui Huang. Modeling the effects of fresh water input on porewater salinity in salt marshes of Apalachicola Bay ecosystem, Florida. *Estuaries* (in preparation).

Erle C. Ellis **Hongqing Wang**, Kui Peng, Hong Sheng Xiao, Nagaraj Neerchal, Xin Ping Liu, Shou Cheng Li, Jun Xi Wu, Jia Guo Jiao, Shi Ming Luo, Hua Ouyang, Xu Cheng, and Lin Zhang Yang. Estimating long-term regional changes from samples of high-resolution imagery across rural China. *Remote Sensing of Environment* (submitted).

Jiao, Jianguo, Linzhang Yang, Junxi Wu, **Hongqing Wang**, and Erle C. Ellis. Land use, land cover and soil organic carbon in China's agricultural village landscapes. *Agriculture, Ecosystems & Environment* (submitted).

Hongqing Wang, Kui Peng, Hongsheng Xiao and Erle C. Ellis. In review. Impacts of thematic resolution on landscape metrics from high-resolution ecological maps. *Landscape Ecology*.

- Ellis, E. C., Peng, K., Xiao, H., Li, S. C., Liu, X. P., **Wang, Hongqing**, Ouyang, H., Cheng, X., and Yang, L. Z., Long-term changes in carbon, nitrogen and phosphorus loading of agricultural fields in China. *Agriculture, Ecosystems & Environment* (in preparation).
- Ellis, E. C., Xiao, H., Peng, K., Li, S. C., Liu, X. P., **Wang, Hongqing**, Ouyang, H., Cheng, X., and Yang, L. Z., Long-term changes in household fuel and biomass combustion in densely populated rural China. *Global Biogeochemical Cycles* (in preparation).
- Ellis, E. C., Jiao, J.G., Peng, K., Li, S. C., Liu, X. P., Xiao, H., **Wang, Hongqing**, Ouyang, H., Cheng, X., and Yang, L. Z., Long-term changes in soil carbon, nitrogen and phosphorus across China's densely populated rural landscapes. *Global Biogeochemical Cycles* (in preparation).
- Ellis, E. C., Wu, J.X., Xiao, H., Peng, K., Li, S. C., Liu, X. P., **Wang, Hongqing**, Ouyang, H., Cheng, X., and Yang, L. Z., Long-term changes in vegetation biomass, carbon, nitrogen and phosphorus across China's densely populated rural landscapes. *Global Change Biology* (in preparation).

SELECTED PUBLICATIONS

- Hongqing Wang**, Ping Hsieh, Mark A. Harwell, and Wenrui Huang. 2007. Modeling soil salinity distribution along topographic gradient in tidal salt marshes in Atlantic and Gulf coastal regions. *Ecological Modeling*, 201 (3-4): 429-439.
- Wu, J.X., Jiao, J.G., Xiao, H.S., **Wang, Hongqing**, Cheng, X., Yang, L.Z., & Ellis, E.C. 2006. Landscape structure, management and soil organic carbon in the density populated village landscapes of China's Yangtze Delta Plain. *Acta Ecologica Sinica* (in Chinese), 26(12): 4135-4147.
- Erle C. Ellis, and **Hongqing Wang**. 2006. Estimating area errors for fine-scale feature-based ecological mapping. *International Journal of Remote Sensing*, 27 (21): 4731 – 4749.
- Erle C. Ellis, **Hongqing Wang**, Hongsheng Xiao, Kui Peng, Xinping Liu, Shoucheng Li, Hua Ouyang, Xu Cheng, and Linzhang Yang. 2006. Measuring long-term ecological changes in densely populated landscapes using current and historical high resolution imagery. *Remote Sensing of Environment* 100: 457-473.
- Chengli Tong, Wenju Zhang, **Hongqing Wang**, Guoyong Tang, Gairen Yang, and Jinshui Wu. 2005. Relationship between organic carbon and water content in four type wetland sediments in Sanjiang Plain. *Chinese Journal of Environmental Science*, 26: 38-42.
- Chengli Tong, Wenju Zhang, Yang Tang, and **Hongqing Wang**. 2005. Estimation of daily solar radiation in China. *Chinese Journal of Agro-meteorology*, 26: 165-169.
- Hongqing Wang**, and Erle C. Ellis. 2005. Image misregistration error in change measurements. *Photogrammetric Engineering and Remote Sensing* 71(9): 1037-1044.
- Hongqing Wang**, and Erle C. Ellis. 2005. Spatial accuracy of orthorectified IKONOS imagery and historical aerial photographs across five sites in China. *International Journal of Remote Sensing* 26 (9): 1893-1911.
- Hongqing Wang**, and Charles A.S. Hall. 2004. Modeling the effects of Hurricane Hugo on spatial and temporal variation in primary productivity and soil carbon and nitrogen in the Luquillo Experimental Forest, Puerto Rico. *Plant & Soil* 263: 69-84.
- Hongqing Wang**, Charles A.S. Hall, Frederick N. Scatena, Ned Fetcher, and Wei Wu. 2003. Modeling the spatial and temporal variability in climate and primary productivity across the Luquillo Mountains, Puerto Rico. *Forest Ecology and Management* 179(1-3): 69-94.
- Chengli Tong, Charles A.S. Hall, and **Hongqing Wang** (corresponding author). 2003. Land use change in rice, wheat and maize production in China (1961-1998). *Agriculture, Ecosystems & Environment* 95(2-3): 523-536.
- Hongqing Wang**, Charles A.S. Hall, Joseph D. Cornell, and Myrna H.P. Hall. 2002. Spatial dependence and relationship of soil organic carbon and soil moisture in the Luquillo Experimental Forest, Puerto Rico. *Landscape Ecology* 17(8): 671-684.
- Hongqing Wang**, Joseph D. Cornell, Charles A.S. Hall, and David P. Marley. 2002. Spatial and seasonal dynamics of surface soil carbon in the Luquillo Experimental Forest, Puerto Rico. *Ecological Modeling* 147(2): 105-122.
- Charles A.S. Hall, Carlos Leon, Will Ravenscroft, and **Hongqing Wang**. 2000. Temporal and spatial overview of Costa Rican agriculture production. In: Charles A.S. Hall (ed.), *Quantifying sustainable development*. pp. 349-401. Academic Press, 2000, San Diego.

- Charles A.S. Hall, Jae-Young Ko, chia-Lun Lee, and **Hongqing Wang**. 1998. Ricardo lives: the inverse relation of resource exploitation intensity and efficiency in Costa Rican agriculture and its relation to sustainable development. *Advances in Energy Studies*: 355-370. Musis, Roma, 1998.
- Hui Yang, **Hongqing Wang**, and Qing Ji. 1997. Study on monitoring soil pollution using horsebean micronucleus assay. *Agro_Environmental Protection* 16(1): 20-23.
- Hongqing Wang**, and Zhan Tao. 1996. Study on the index system of agricultural and ecological monitoring. *Agro_Environmental Protection* 15(4): 173-176.
- Hongqing Wang** and Zhan Tao. 1995. A study on the 'pond fir-fish-duck' eco-agricultural forest model. *Journal of Eco-Agriculture Research* 3(2): 26-32.
- Zhan Tao and **Hongqing Wang**. 1994. Issues and options in greenhouse gases emission control in China. *Chinese Research Academy of Environmental Science*: 120-146.
- R. Zhang, S. Qi, and **Hongqing Wang**. (Eds.). 1992. *Techniques and designing of Eco-Agriculture*. Publishing House of Hebei Science and Technology, 1990. Shijiazhuang, China.
- W. Dong, **Hongqing Wang**, and R. Zhang. 1989. The analysis of the function and productivity of semiarid agro-ecosystems in the south of Greater XinanLin Mountains. *Journal of Southwest Agricultural University* 11(6): 557-592.
- Hongqing Wang**, W. Dong, and R. Zhang. 1989. An approach on the comprehensive development in agroecosystems using Goal Programming Method. *Journal of Southwest Agricultural University* 11(6): 536-541.
- R. Zhang, **Hongqing Wang**, and X. Cheng. 1989. The Comprehensive development of Eco-agriculture construction in some parts of China. *Journal of Southwest Agricultural University* 11(6): 520-530.
- Hongqing Wang**, R. Zhang, and W. Ji. 1989. Systematic design of ecological agriculture model in Liuhe Village. *Agro_Environmental Protection* 8(6): 239-243.
- R. Zhang, W. Dong, and **Hongqing Wang**. 1989. The ecological agriculture construction and assessment in Liuhe Village of Qingan County, Heilongjiang Province. *Rural Eco-Environment* (4): 14-19.
- X. Wan, **Hongqing Wang**, and C. Shen, 1987. On the methods of imitation of Logistic Curve. *The Young Ecologists* 1(1): 28-39.

CONFERENCE PRESENTATIONS

- Ellis, E.C., **Wang, Hongqing**., Peng, K., Xiao, H.S., Neerchal, N., Liu, X.P., Li, S. C., Wu, J.X., Jiao, J.G., Luo, S.M., Ouyang, H., Cheng, X., & Yang, L.Z. 2006. Estimating long-term regional changes from samples of high-resolution imagery across rural China. AGU Fall Meeting, December 11-15, 2006, San Francisco, CA.
- Hongqing Wang**, Ping Hsieh, Mark A. Harwell, and Wenrui Huang. 2006. Modeling soil salinity distribution along an elevational gradient in tidal salt marshes in Atlantic and Gulf coastal regions. Fourth Education and Science Forum, Education Partnership Program (EPP), NOAA, October 30 – November 1, 2006, Tallahassee, FL.
- Hongqing Wang**, Wenrui Huang, Harwell, Mark, Ping Hsieh, Elijah Johnson, Katherine Milla, , Glynnis Bugna, Kevin Dillon, and Jack Gentile. 2006. *Developing Regional-Scale Stressor-Response Models for Use in Environmental Decision-Making in Apalachicola Bay, Florida*. EPA STAR Progress Review Workshop, June 8-9, 2006, Washington, DC.
- Hongqing Wang**, Ping Hsieh, and Mark A. Harwell. 2005. *Modeling soil salinity distribution along an elevational gradient in Atlantic and Gulf coastal regions*. American Geophysical Union (AGU) Fall Meeting, December 5-9, 2005, San Francisco, CA.
- Harwell, Mark, **Hongqing Wang**, Ping Hsieh, Wenrui Huang, Elijah Johnson, Katherine Milla, , Glynnis Bugna, Kevin Dillon, and Jack Gentile. 2005. *Developing Regional-Scale Stressor-Response Models for Use in Environmental Decision-Making in Apalachicola Bay, Florida*. EPA STAR Workshop: Regional Scale Stressor Response Models and Consequences of Global Change for Aquatic Ecosystems, November 3-4, 2005, Arlington, VA,
- Hongqing Wang**, Kui Peng, Hongsheng Xiao and Erle C. Ellis. 2005. Impact of thematic resolution of landscape classification on landscape metrics. Ecological Society of America 90th Annual Meeting, August 7-12, 2005, Montreal, Canada.
- Hongqing Wang**, Ping Hsieh, and Mark A. Harwell. 2005. *Modeling porewater salinity along an elevational gradient in Gulf coast*. Strategic Planning Retreat, Environmental Cooperative Science Center (ECSC) of NOAA. January 10-14, 2005, Amelia Island, Florida.

- Erle C. Ellis, and **Hongqing Wang**. 2004. *Ecotope mapping for high-resolution ecological change measurement across anthropogenic landscapes*. 2004 Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland.
- Erle C. Ellis, **Hongqing Wang**, Hong Sheng Xiao, and Kui Peng *Measuring Long-Term Ecological Changes across Inhabited Landscapes*. Ecological Society of America 89th Annual Meeting, August 1-6, 2004, Portland, Oregon.
- Harwell, Mark, Ping Hsieh, Wenrui Huang, Elijah Johnson, Katherine Milla, **Hongqing Wang**, Glynnis Bugna, Kevin Dillon, and Jack Gentile. 2004. *Development of coupled physical and ecological models for stress-response simulations of the Apalachicola Bay regional ecosystem*. Annual EPA STAR Progress Review meeting, June 16-18, Washington, DC.
- Hongqing Wang**, Charles A. S. Hall, Frederick N. Scatena, and Wei Wu. 2001. *Spatial modeling of primary production and transpiration in the Luquillo Mountains of Puerto Rico*. Annual meeting of Long-Term Ecological Research at the Luquillo site, January 13-14, 2001, Puerto Rico.
- Hongqing Wang**, Charles A. S. Hall, William H. McDowell, Frederick N. Scatena, Joseph D. Cornell, and Marshall R. Taylor. 2000. *Patterns of soils in transporting DOC to streams in the Bisley watershed, Luquillo Experimental Forest, Puerto Rico*. Long-Term Ecological Research All Scientists Meeting, August 2-4, 2000, Snowbird, Utah.
- Hongqing Wang** and Charles A. S. Hall. 2000. *Application of the topographic index and TOPMODEL to a catchment in the Luquillo Forest, Puerto Rico*. Workshop on application of the topographic index and TOPMODEL in forested catchments, February 29, 2000. Syracuse, New York.
- Hongqing Wang**, Joseph D. Cornell, and Charles A. S. Hall. 1998. *Modeling the spatial and seasonal dynamics of soil organic carbon in the Luquillo Experimental Forest, Puerto Rico*. Ecological Society of America Annual Meeting, August 2-6, 1998, Baltimore, Maryland.
- Hongqing Wang**. 1995. *On the policies of biodiversity protection in Chinese agriculture*. XVIII Pacific Science Congress, June 5-12, 1995, Beijing, China.
- Jian Zhou, **Hongqing Wang**, Luobao Cai, and Zhan Tao. 1995. *Discussion on development and the biodiversity protection of Chinese agriculture*. XVIII Pacific Science Congress, June 5-12, 1995, Beijing, China.
- Hongqing Wang**, R. Zhang, and W. Ji. 1989. (Chairman of Agro-Ecological Engineering Section). *Systematic design of ecological agriculture model in Liuhe Village*. Proceedings of International Symposium on Agricultural Engineering, (Ed. Wang Maohua), 89-ISAIE, September 12-15, 1989, Beijing, China.

PROFESSIONAL SERVICES/ACTIVITIES

Reviewer, *Ecological Modeling, Photogrammetric Engineering and Remote Sensing (PE&RS), Land Use Policy, Scientia Agricola*

Member, *Long-Term Ecological Research (LTER) Modeling Group, NSF*

Member, *Environmental Science Summer Camp Advisory Committee, Florida A&M University*

Member, *Expert Group on Potential Climate Change Impacts on China*

Judge, *Environmental Science Summer Camp 2005, Florida A&M University*