Wenxiu Teng
Ph.D. Candidate
Department of Earth, Geographic, and Climate Sciences
University of Massachusetts Amherst
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EDUCATION

2020-present Ph.D. University of Massachusetts Amherst, MA, USA
Earth, Geographic, and Climate Sciences

2017-2020 M.S. Nanjing Forestry University (NJFU), Jiangsu, China
Remote Sensing & GIS Application

2013-2017 B.S. Chuzhou University (CHZU), Anhui, China
Geographic Information Science (GIS)

PROFESSIONAL EXPERIENCE

2022- present NE CASC Graduate Fellow, Northeast Climate Adaptation Science Center

2020- 2023 Teaching Assistant, Dept. of Earth, Geographic, and Climate Sciences, UMass

2018-2019 Research Assistant, Dept. of Forest Resources Management, NJFU

2014-2017 Research Assistant, Geovisualization Research Center, CHZU

RESEARCH

My current research studies how marine source sediment supply affects tidal marsh carbon storage and resilience to accelerating sea level rise under climate change. I use optical remote sensing, field and laboratory measurement as the major tools to quantify tidal marsh sediment supply and carbon storge.

PEER-REVIEWED PUBLICATIONS

Manuscripts in preparation:

2023 **Wenxiu Teng**, Qian Yu, Brian Yellen, Bonnie Turek, Jon Woodruff. Blue Carbon Mapping in the Northeastern US Tidal Marshes Using Satellite Remote Sensing. In preparation for *Remote Sensing of Environment* spring of 2023.

2023 Turek, B., **Teng, W**., Yellen, B., Yu, Q., Woodruff, J.W. Lidar-based geomorphic mapping of blue carbon. In preparation for submission to JGR Earth Surface spring of 2023.

2023 Yellen, B., **Teng, W**., Yu, Q., Woodruff, J.W., Turek, B., Richardson, J.B. A regional scale assessment of blue carbon inventories for the Northeast US. In preparation for submission to JGR Earth Surface fall 2023.

Published:

2022 **Wenxiu Teng,** Qian Yu, Ivan Mischenko, Alexandrea Rice, Justin Richardson. Predicting foliar nutrient concentrations across geologic materials and tree genera in the New England United States using spectral reflectance and PLSR models, *Journal of Forestry Research*.

2021 Huihui Shi, Yannan Xu, **Wenxiu Teng**, Ni Wang. "Scene classification of high-resolution remote sensing imagery based on deep transfer deformable convolutional

neural networks." *Acta Geodaetica et Cartographica Sinica* 50.5 (2021): 652. (In Chinese)

2020 **Wenxiu Teng**, Ni Wang, Huihui Shi, Yuchan Liu, Jing Wang. Classifier-constrained deep adversarial domain adaptation for cross-domain semisupervised classification in remote sensing images [J]. *IEEE Geoscience and Remote Sensing Letters*, 2020, 17(5): 789-793. doi: 10.1109/LGRS.2019.2931305 *Code Available*, doi: 10.24433/CO.8732565.v3

2019 Jiarong Tian, Tingting Dai, Haidong Li, Chengrui Liao, **Wenxiu Teng**, et al. A novel tree height extraction approach for individual trees by combining TLS and UAV image-based point cloud integration. *Forests*, 2019, 10, 537. doi: 10.3390/f10070537

2019 **Wenxiu Teng**, Xiaorong Wen, Ni Wang, Huihui Shi. Tree species classification and mapping based on deep transfer learning with unmanned aerial vehicle high resolution images [J]. *Laser and Optoelectronics Progress*, 2019,56(07):072801. doi: 10.3788/LOP56.072801 (In Chinese)

2019 Huihui Shi, Ni Wang, **Wenxiu Teng**, et al. Tree canopy extraction method of high resolution image based on gabor filter and morphology [J]. *Journal of Geo-Information Science*, 2019, 21(2):249-258. doi: 10.12082/dqxxkx.2019.180280 (In Chinese)

2018 **Wenxiu Teng**, Xiaorong Wen, Ni Wang, Huihui Shi. Individual tree crown extraction in high resolution remote sensing image based on iterative h-minima improved watershed algorithm [J]. *Laser and Optoelectronics Progress*, 2018, 55(12): 122802. doi: 10.3788/LOP55.122802 (In Chinese)

2018 **Wenxiu Teng**. A vector tile generation method for mobile device [J]. *Geomatics and Spatial Information Technology*, 2018,41(12):88-90. doi: 10.3969/j.issn.1672-5867.2018.12.024 (In Chinese)

MAJOR PARTICIPANT ON PROJECTS

2022-2025 Effects of Urban Coastal "Armoring" on Salt Marsh Sediment Supplies and Resilience to Climate Change. U.S. Geological Survey (USGS), Northeast Climate Adaptation Science Center (NECASC), PI Brian Yellen, Co-PIs Qian Yu, Jon Woodruff.

2020-2022 Regional Scaling of Blue Carbon Measurements with Lidar-derived Geomorphic Tools. U.S. Dept of Agriculture (USDA), Natural Resources Conservation Service (NRCS), PI Brian Yellen, Co-PIs Qian Yu, Kostas Andreadis, Justin Richardson, Jon Woodruff.

2021-2025 Assessing Nutrient Sustainability in Forest Management: Novel Applications of Metal Isotopes and In-Situ Mineral Measurements. U.S. Dept of Agriculture (USDA), National Institute for Food and Agriculture, PI Justin B Richardson. Co-PIs Nicolas JP Perdrial, Anthony D'Amato.

2017-2010 Individual Tree Crown Extraction and Tree Species Classification from High-Resolution Images, National Natural Science Foundation of China, PI, Ni Wang

2013-2015 Map Symbol Sharing Data Model and Method, National Natural Science Foundation of China, PI, Taisheng Chen

HONORS, AWARDS, AND FELLOWSHIPS

NASA Fellowship (support 20 students worldwide) to participate in the Calibration and Validation of Ocean Color Remote Sensing Workshop, Bowdoin College, Schiller Coastal Studies Center (SCSC), Orr's Island, Maine, June 12 – July 7, 2023.

Outstanding Teaching Assistant Award, Dept. of Earth, Geographic, and Climate Sciences, UMass Amherst, 2023

National Fellowships & Scholarships for Graduate Students, Nanjing Forestry University (NJFU), 2019

TEACHING EXPERIENCE

TA for Remote Sensing & Image Interpretation, GEOG426/626, Fall 2021 and 2022

TA for GIS and Spatial Analysis, GEOG468/668, Spring 2022 and 2023

CONFERENCE

Wenxiu Teng, Qian Yu, Brian Yellen, Bonnie Turek, Jon Woodruff. Process-based Blue Carbon Mapping in the Northeastern US Tidal Marshes Using Optical Remote Sensing. AGU Fall Meeting Poster 2022, B15F-1189.

JOURNAL REVIEW

IEEE Transactions on Geoscience and Remote Sensing, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, International Journal of Remote Sensing

SELECTED COURSES

Physical Geography, Coastal Processes, Hydrogeology, Aqueous Environment Geochemistry, Reactive Transport in the Geosciences, Remote Sensing & Image Interpretation, GIS Spatial Analysis, Data Structure and Algorithm, Principle of Database and Geodatabase

RESEARCH EXPERIENCE AND SKILLS

Field experiences: Spectral measurement, terrestrial laser scanning, turbidity sensor, pressure transducer (water level logger) and sediment trap deployment, sediment core collection

Laboratory instruments: ASD FieldSpec (leaf spectral), ITRAX XRF Core Scan, Soil organic matter and dry bulk density measurement

Software: ArcGIS, ENVI, Microsoft office

Programming: C/C++, Python, Java, C#, R, MATLAB, JavaScript