LIYING LI

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EDUCATION

Ph.D. in Environmental Science, University of California, Merced, California, CA, 2021-2024
Master of Science in Project Management (Sustainability), Northwestern University, Evanston, IL, 2013-2015
M.Sc. in Environmental Policy and Regulation, Department of Geography, London School of Economics, UK, 2011-2012
Bachelor of Engineering in Environmental Engineering, Dalian University of Technology, Dalian, China, 2007-2011

EXPERTISE

AI and Machine-learning models for ecology•
Spatial and temporal explicit species abundance modeling• Remote-sensing data application• Climate change impacts on ecosystems • Spatial statistics • Land use land cover processing and mapping • Economic optimization • Climate change adaptation and conservation planning.

PROFESSIONAL EXPERIENCE

National Center of Ecological Analysis and Synthesis
University of California, Santa Barbara | Santa Barbara, CA **Aug 2024 – Present**
Postdoctoral Researcher

- Working collaboratively with working groups, conducting research on Gulf of Mexico restoration and ecosystem conservation plans in the context of climate change.
- Lead an independent research project on coastal birds' distribution across the Gulf of Mexico with climate change.
- Developing modeling frameworks and machine learning tools to handle remote-sensing and birds data in population composition and trends analysis

University of California, Merced | Merced, CA **Jan 2021 – Aug 2024**
Graduate Research Assistant and teaching assistant

I was a fully funded GSR by NSF-USDA-Integrated Food, Energy, and Water Studies for California's Central Valley. PI and direct supervisor: Prof. Martha Conklin, Prof. Josue Medellion-Azuara, and Prof. Joshua Viers

- Produced scientific papers
- Innovatively integrated a range of research methods that are highly interdisciplinary.
- Efficiently collaborated with researchers and stakeholders with diversified backgrounds
- Produced environmental policy-friendly science to maintain agriculture and ecosystem co-benefits.
- I successfully completed my teaching assignments in the Engineering Economics course twice.
- Successfully presented polished talks and posters at international conferences such as IGARSS and AGUs.

School of Environment, Tsinghua University | Beijing, China **Jan 2016 – Dec 2019**
Associate Researcher

Conducting environmental economics and policy analysis research. Advisor: Prof. Miao Chang. Examples of my job include:

- Independently accomplished research on Investment Gap Analysis for Municipal Wastewater Treatment Facility Construction in China.
- Responsibly in charge of and completed book chapter editing of "Environmental Technology Development in China".
- Successfully completed policy analysis report on "Making Business Case of Environmental Protection Technologies" for the Environmental Protection Bureau.

School of Environment, Tsinghua University | Beijing, China **Oct 2012 – Aug 2013**
Associate Researcher

I was in a role as a junior research scientist, conducting environmental policy analysis research. Advisor: Prof. Tianzhu Zhang.

- Independently conducted research on Oil Spill Accidents in Rivers' First-response Procedures and the Policies to Facilitate Such Procedures.
- Collaboratively conducted research on Analyzing carbon dioxide emission drivers in Beijing using input-output economic tables (A Life-cycle analysis study)

PUBLICATIONS

- Li, Liying, Cole, S., Rodriguez-Flores, J. M., Hestir, E., Fink, D., Viers, J. H., Medellin-Azuara, J., Conklin, M., & Harmon, T. (2025). Synergies Between Agricultural Production and Shorebird Conservation With Climate Change in the Central Valley, California, With Optimized Water Allocation and Multi-Benefit Land Use. Global Change Biology, 31(6). https://doi.org/10.1111/gcb.70304
- Li, Liying, Hestir, E., Fink, D., Viers, Rodriguez-Flores, J. M., J. H., Medellin-Azuara, J., Conklin, M., (2025).Nature-based Solutions to Reduce Carbon Emissions, Control Groundwater Overdraft, and Conserve Avian Biodiversity with Multi-Benefit. Environmental and Sustainability Indicators. Under Review
- Liying Li, Junwen Bai, Shoukun Sun, Marcos Zuzuarregui, Danial Fink, Zhe Wang, Heather Lahr, Courtney Scarborough, Caitlin Young. Interpretative Generative Deep Learning Hurdle Models Unraveled Functional Diversity Shifts in Bird Communities in Response to Sea Level Rise. Being submitted
- Liying Li, Marcos Zuzuarregui, Junwen Bai, Shoukun Sun, Yangkang Chen, Zhe Wang, Danial Fink. Storm Surge and Sea Level Rise Impacts on Avian Biodiversity by Functional Traits: Assessment Using Adaptive Ensemble Deep Learning Models. Being submitted
- Li, Liying, M. S. Dogan, M. Maskey, et al. 2025. "Optimized Water Allocation With Managed Groundwater Recharge and Prioritized Wetland Deliveries to Moderate Human-Nature Water Use Tradeoffs Under Climate Change." Journal of Hydrology: Regional Studies 60: 102496. https://doi.org/10.1016/j.ejrh.2025.102496.
- Yafei Wang, Hongyan Zhao, Liying Li, Zhu Liu, Sai Liang, Carbon Dioxide Emission Drivers for a Typical Metropolis Using Input-output Structural Decomposition Analysis. Energy Policy 2013; 58: 312–8. Citation:205.
- Liying Li, Integrating Climate Change Impact in New Building Design Process: A Review of Building Life Cycle Carbon Emission Assessment Methodologies. Cleaner Engineering and Technology 2021; 5, 100286. Citation: 36.
- Xiaona Li, Shuo Chen, Liying Li, Xie Quan, Huimin Zhao, Electrochemically Enhanced Adsorption of Nonylphenol on Carbon Nanotubes: Kinetics and Isotherms Study. Journal of Colloid and Interface Science 415 (2014) 159-164. Citation: 34.
- Maskey, Mahesh L., Mustafa S. Dogan, Angel Santiago Fernandez-Bou, Liying Li, Alexander Guzman, Wyatt Arnold, Erfan Goharian, Jay R. Lund, and Josue Medellin-Azuara. "Managing Aquifer Recharge to Overcome Overdraft in the Lower American River, California, USA." Water 14, no. 6 (2022): 966. Citation: 8.
- Liying Li, The Governance of Low-Carbon Transitions in a Multilevel Perspective Framework: How Does the Concept of 'System Transformation' Work? Energy Research Journal. 2020, Vol. 11: 45-53. Citation: 3
- Liying Li. Assessing Climate Change Impacts and Adaptation Options of Rain-Fed Agriculture in Africa with Integrated Modelling Framework. In Geo-Extreme 2021, pp. 203-212. Citation:1.

WORKING PAPERS/PRESENTATIONS

- Liying Li. Multi-benefit Conservation Planning for Balancing the Competing Land and Water Use for Human and Biodiversity Conservation. AGU 2024. https://lily6966.github.io/papers/agu2024.pdf

- Liying Li, Josue Medellin-Azuara, Integrated modeling framework for shorebird population changes under land-use and climate changes using remote-sensed and citizen science data for Central Valley farmlands in California. AGU fall meeting 2023. Oral presentation
- Liying Li, Spencer Cole, Erin L. Hestir, Josue Medellin-Azuara, Identifying the priority areas for non-breeding shorebird habitat provisioning from agricultural land: conserving water, biodiversity, and agriculture. International Geoscience and Remote Sensing Symposium 2023. Oral presentation
- Liying Li, J Medellin-Azuara, Co-benefits of Managed Aquifer Recharge in California: Integrated Assessment of Climate and Land Use Change Impacts on Agriculture with Spatial Explicit Ecosystem Service Analysis. AGU Fall Meeting 2021, Poster
- Chen Qing, Chang Miao, Liying Li, and Peikun Guo, Analysis of the Investment Need for Municipal Wastewater Treatment Facility Construction in China During the 13th Five-Year Plan Period. ICSI 2016 Conference, Poster.

PROFESSIONAL MEMBERSHIP

- American Geophysical Union (AGU)
- American Association for the Advancement of Science (AAAS)
- Ecological Society of America (ESA)
- Geological Society of America (GSA)

FELLOWSHIP

- Gulf Ecosystem Initiative Postdoctoral Fellow
- ES Bobcat Summer Fellowship, **2021 & 2023**
- ES Professional Development Fellowship, **2022**
- Bakersfield College Faculty Diversification Teaching Fellow-NSF-Funded, **2022- 2023**