A. John Woodill

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EDUCATION

2018 Ph.D. Economics, University of Hawaii at Manoa
Fields: Environmental and Resource, International Trade and Macroeconomics, Finance

2015 M.A. Economics, University of Hawaii at Manoa

2013 B.A. Economics—Quantitative Analysis, San Diego State University, *Summa Cum Laude*

2010 A.S. Computer and Information Science, San Diego Mesa/City College

2004 Civil Engineer Journeyman, Community College of the Air Force

SCIENTIFIC EXPERTISE

I am an **interdisciplinary environmental economist** whose research bridges natural and social sciences to address complex environmental challenges. My work spans resource and fisheries economics, climate change, agricultural systems, and oceanography. I integrate methods from econometrics, systems modeling, and machine learning to analyze issues such as international fisheries conflict, carbon removal technologies, phenological shifts in viticulture, and the economic impacts of agricultural pests. Drawing on diverse collaborations, my research advances data-driven approaches to sustainability across terrestrial and marine environments.

PROFESSIONAL APPOINTMENTS

2022—present **Research Associate,** College of Earth, Ocean, and Atmospheric Sciences
Oregon State University

2019—2022 **Postdoctoral Scholar,** College of Earth, Ocean, and Atmospheric Sciences
Oregon State University—Advisor: James R. Watson

2014—2018 **Graduate Research Assistant,** Natural Resources and Environmental Management
University of Hawaii at Manoa—Advisors: PingSun Leung and Stuart T. Nakamoto

2015 **Research Analyst,** Food and Agriculture Organization of the United Nations
University of Hawaii at Manoa—Advisor: Philippe Jeanneaux

HONORS AND AWARDS

2018 Economic Department Travel Award - University of Hawaii

2018 College Travel Funds for Professional Development in Research
University of Hawaii

2018 Graduate Student Organization Travel Award - University of Hawaii

2015 Food and Agriculture Organization of the United Nations Travel Award
University of Hawaii

2013 Weintraub Paper Award—"Mining for Bitcoins: an Econometric Analysis."
San Diego State University

2011 Future Scholars Award — San Diego State University

PATENTS

Watson, James R., **Woodill, A. John**, Kavanaugh, Maria. "An Operational Forecasting System Based On Anomalous Behaviors In Complex Systems." U.S. Patent Application No. US 2022/0253727 A1 May 20, 2020.

PEER REVIEWED PUBLICATIONS

Published

[13] Delelee, L. M., **Woodill, A. J.**, & Skinkis, P. A. (2025). Climate change projections indicate shifts in phenology for Willamette Valley Pinot noir. *American Journal of Enology and Viticulture*. [Viticulture]]

[12] **Woodill, A. J.**, Krohn, B., Wolf, A., & Smith, T. (2025, January 2). *Life cycle analysis and full carbon accounting of enhanced rock weathering*. CDRXIV. [Carbon Removal]

[11] Mooshammer, M., Shrieves, C., Chang, E., Marklein, A., **Woodill, A. J.**, & Wolf, A. (2024, December 6). *Untitled*. CDRXIV. [Carbon Removal]

[10] Gómez-Andújar, N. X., **Woodill, A. J.**, Villegas, C., & Watson, J. R. (2024). Scarcity induces conflict in Puerto Rican fisheries. *Environmental Research Letters, 19*(12), 124001. https://doi.org/10.1088/1748-9326/ad8809 [Fisheries / Conflict]

[9] Nomura, K. J., **Woodill, A. J.**, Sweeney, J., Harte, M., Samhouri, J. F., & Watson, J. R. (2024). Emergent geopolitical risks from fishing activities and past conflicts in the Pacific Ocean. *Marine Policy, 166*, 106234. https://doi.org/10.1016/j.marpol.2024.106234 [Fisheries / Conflict]

[8] Villarino, E., Watson, J. R., Chust, G., **Woodill, A. J.**, Klempay, B., Jonsson, B., Gasol, J. M., *et al.* (2022). Global beta diversity patterns of microbial communities in the surface and deep ocean. *Global Ecology and Biogeography*. [Oceanography]

[7] Watson, J. R., & **Woodill, A. J.** (2022). Detecting illegal maritime activities from anomalous multiscale fleet behaviours. *Fish and Fisheries*. [Complex Systems / Fisheries]

[6] **Woodill, A. J.**, Kavanaugh, M., Harte, M., & Watson, J. R. (2021). Ocean seascapes predict distant‐water fishing vessel incursions into exclusive economic zones. *Fish and Fisheries*. [Machine Learning / Fisheries]

[5] **Woodill, A. J.**, Nakamoto, S. T., Kawabata, A. M., & Leung, P. (2021). Optimal spraying and harvesting strategy to combat CBB: A dynamic approach. *Journal of Agriculture and Food Research*. [Decision Theory / Precision Agriculture]

[4] **Woodill, A. J.**, Nakamoto, S. T., Kawabata, A. M., Arita, S., & Leung, P. (2019). The impact of CBB on the economics of coffee production in Hawai‘i: 2007–2012 USDA Census analysis. *College of Tropical Agriculture and Human Resources, University of Hawai‘i at Mānoa*, Insect Pests, IP-46. [Agriculture]

[3] **Woodill, A. J.**, Nakamoto, S. T., Kawabata, A. M., & Leung, P. (2017). To spray or not to spray: A decision analysis of coffee berry borer in Hawai‘i. *Insects*, 8(1), 1–16. [Decision Theory / Precision Agriculture]

[2] **Woodill, A. J.**, Hemachandra, D., Nakamoto, S. T., & Leung, P. (2014). The economics of coffee production in Hawai‘i. *Economic Issues, 25*, 1–9. [Agriculture]

[1] Richardson, G. M., Bowers, J., **Woodill, A. J.**, Barr, J. R., Gawron, J. M., & Levine, R. A. (2014). Topic models: A tutorial with R. *International Journal of Semantic Computing, 8*(1), 85–98. [Natural Language Processing]

RESEARCH GRANTS AND PROPOSALS

Active Grant Funding

2020-2025, Co-Principal Investigator — “High-Resolution Vineyard Nutrition Research Project”, a collaborative effort between WSU and Cornell, UC Davis, Oregon State, Rochester Institute of Technology, Virginia Tech, and USDA-ARS, funded through the National Institute of Food and Agriculture’s Specialty Crop Research Initiative Coordinated Agricultural Projects (CAP) grant ($4.75 million)

2022-2025, Co-Principal Investigator — "The Yield-Quality Paradigm: Using Long-Term, Multi-Vineyard Data to Understand Yield Management into the Future", a collaborative effort at OSU with Patty Skinkis and Katie McLaughlin to disentangle field-level decision-making with a 10-year robust panel dataset that allows us to identify climate change impacts, funded through the USDA ARS Northwest Center for Small Fruits Research grant ($104,585)

TEACHING

2021 **Guest Lecturer,** Geography 361 and 561—Species Distribution Modeling
Oregon State University

2020 **Guest Lecturer,** Geography 361 and 561—Climate Econometrics
Oregon State University

2017 **Graduate Student Instructor (Online),** Economics 358—Environmental Economics
University of Hawaii

2012 **Teaching Assistant**, Math 150—Calculus I
San Diego State University

TECHNICAL SKILLS

Statistical/Mathematical Methods
Non/Semi/Parametric Regressions, Machine/Deep Learning—Classification and Regression, Bayesian, Dynamic Programming, Stochastic Programming, Complex Systems, Information Theory, Agent-based Modeling, and Natural Language Processing

Programming/Statistical Languages (order of exp): Python, R, STAN, STATA, SAS, SQL, Matlab, C/C++, Julia, Bash

Cloud Platforms: Google Cloud, Amazon Web Services

Tools: ETL/Production Workflows, Docker, Kubernetes, Shiny, Dask, Flask, Dash, Plotly, Travis CI, Github Actions, Jupyter, git, LaTeX, Python-pypi, R-dev-tools

PROFESSIONAL SERVICE

Chaired Sessions in Conferences

2018 **6th World Congress of Environmental and Resource Economists (WCERE)**
Dimensions of Adaptation and its Potential to Mitigate Harm to Agriculture
Co-host with Michael J. Roberts
University of Gothenburg, Sweden

Journal Referee

Journal of the European Economic Association, Environmental Research Letters, Agricultural and Forest Meteorology, Journal of Environmental Economics and Management, Nature Communications, Sustainability

Professional Memberships

Association of Environmental and Resource Economists, Agricultural & Applied Economics Association, American Geophysical Union

PRESENTATIONS

Seminars/Workshops

2023 **Woodill, A. John,** Titus, Mat, Landers, Lexi, Goodbody, Angus, Watson, James R. "ASO Data Integration for Improved Water Supply Forecasting with M4 Model." 8th Annual Airborne Snow Observations, Inc. Workshop

2022 **Woodill, A. John,** Nicolás Gómez Andújar, Jonathan Sweeney, Kavanaugh, Maria, Harte, Michael, and Watson, James R. "Measuring the Economic Value of Dynamic Oceanographic Seascapes.**"** Ocean Sciences Meeting (online).

2021 **Woodill, A. John,** Nicolás Gómez Andújar, Jonathan Sweeney, Kavanaugh, Maria, Harte, Michael, and Watson, James R. "Measuring the Economic Value of Dynamic Oceanographic Seascapes.**"** Yale Environmental Economics Workshop (online).

2019 Watson, James R. and **Woodill, A. John** "Anticipating Illegal Maritime Activities from Anomalous Multiscale Fleet Behavior." NASA Biodiversity and Ecological Forecasting Team Meeting, Washington D.C.

Woodill, A. John and Roberts, Michael J. "Adaptation and the Envelope Theorem." Applied Economics Working Group, Oregon State University.

2017 **Woodill A. John.** "Blinder-Oaxaca Decomposition Workshop." Applied Microeconomics Workshop, University of Hawaii at Manoa.

Woodill A. John. "Crop Choice and Climate Change." Applied Microeconomics Workshop, University of Hawaii at Manoa.

Woodill, A. John and Roberts, Michael J. "Adaptation Along the Envelope: Evidence from U.S. Agriculture." Seminar in Energy and Environmental Policy, University of Hawaii at Manoa.

2016 **Woodill A. John.** "Optimal Water Extraction in California's Central Valley Under Snow Pack Uncertainty." Applied Microeconomics Workshop, University of Hawaii at Manoa.

Woodill, A. John, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "Decision Tree Analysis of Coffee Berry Borer in Hawaii." CTAHR/COE Student Research Symposium, University of Hawaii at Manoa.

2015 **Woodill, A. John**, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "Decision Tree Analysis of Coffee Berry Borer in Hawaii." Seminar in Energy and Environmental Policy, University of Hawaii at Manoa.

Invited Presentation

2022 **Woodill, A. John,** Nicolás Gómez Andújar, Jonathan Sweeney, Kavanaugh, Maria, Harte, Michael, and Watson, James R. "Measuring the Economic Value of Dynamic Oceanographic Seascapes.**"** Ocean Sciences, Honolulu, HI (online).

2020 **Woodill, A. John,** Kavanaugh, Maria, Harte, Michael, and Watson, James R. "Predicting Illegal Fishing on the Patagonian Shelf.**"** Ocean Sciences, San Diego, CA.

2019 **Woodill, A. John,** Kavanaugh, Maria, Harte, Michael, and Watson, James R. "Predicting Illegal Fishing on the Patagonian Shelf.**"** AGU Fall Conference, San Francisco, CA.

Woodill, A. John and Roberts, Michael J. "Adaptation and the Envelope Theorem." Association of Environmental and Resource Economists Summer Conference, Lake Tahoe, CA.

2018 **Woodill, A. John** and Roberts, Michael. J. "Adaptation to Climate Change: Disentangling Revenue and Crop Responses." World Congress of Environmental and Resource Economists, Gothenburg, Sweden

2016 **Woodill, A. John**, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "Decision Tree Analysis of Coffee Berry Borer in Hawaii." Coffee Berry Borer Conference, Kona, Hawaii.

Woodill, A. John, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung."Decision Tree Analysis of Coffee Berry Borer in Hawaii." Coffee Berry Borer Summit, CTAHR, Komohana Research and Extension Center, Hilo, Hawaii.

2015 **Woodill, A. John**, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "CBB Decision Tree Model." VetAgro Seminar of EIDER/METAFORT Team, Clermont- Ferrand, France.

Woodill, A. John, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "Geographical Indication of Kona Coffee." World Expo: Forum Origin, Diversity, and Territories, Milan, Italy.

Woodill, A. John, Stuart T. Nakamoto, Andrea M. Kawabata, and PingSun Leung. "Geographical Indication of Kona Coffee." Università Cattolica del Sacro Cuore of Piacenza, Piacenza, Italy.