

# Christopher A. Wada

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## Contact Information

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## Education

2010 Ph.D. Economics, University of Hawai'i, Mānoa

2007 M.A. Economics, University of Hawai'i, Mānoa

2005 B.A. Economics, University of California, Berkeley

## Professional Positions

2013– Resource and Environmental Economist  
University of Hawai'i Economic Research Organization

2010–13 Postdoctoral Researcher  
University of Hawai'i Economic Research Organization

## Journal Articles

Pongkijvorasin, S., Burnett, K., **Wada, C.** 2018. Joint Management of an Interconnected Coastal Aquifer and Invasive Tree. *Ecological Economics* 146, 125-135.

**Wada, C.**, Bremer, L., Burnett, K., Trauernicht, C., Giambelluca, T., Mandle, L., Parsons, E., Weil, C., Kurashima, N., Ticktin, T. 2017. Estimating the cost-effectiveness of Hawaiian dry forest restoration using spatial changes in water yield and landscape flammability under climate change. *Pacific Science* 71(4), 401-424.

Burnett, K., **Wada, C.**, Balderston, A. 2017. Benefit-Cost Analysis of Watershed Conservation on Hawai'i Island. *Ecological Economics* 131, 262-274.

Burnett, K., **Wada, C.**, Endo, A., Taniguchi, M. 2017. The Economic Value of Groundwater in Obama. *Journal of Hydrology: Regional Studies* 11, 44-52.

Burnett, K., **Wada, C.**, Endo, A., Taniguchi, M., 2016. Cost-Benefit Analysis of Disaster Mitigation Infrastructure: The Case of Seawalls in Otsuchi, Japan. *Journal of Finance and Economics* 4(3), 1-11.

- Wada, C.A.**, Burnett, K., Gurdak, J.J., 2016. Sustainable Agriculture Irrigation Management: The Water-Energy-Food Nexus in Pajaro Valley, California. *Sustainable Agriculture Research* 5(3), 76-83.
- Endo, A., Burnett, K., Orencio, P.M., Kumazawa, T., **Wada, C.A.**, Ishii, A., Tsurita, I., Taniguchi, M., 2015. Methods of the Water-Energy-Food Nexus. *Water* 7, 5806-5830.
- Roumasset, J., **Wada, C.A.**, 2015. Payments for Watershed Services as Adaptation to Climate Change: Upstream Conservation and Downstream Aquifer Management. *Water Economics and Policy* 1(1), 1450003.
- Roumasset, J., **Wada, C.A.**, 2014. Energy, Backstop Endogeneity, and the Optimal Use of Groundwater. *American Journal of Agricultural Economics* 96(5), 1363-1371.
- Burnett, K., **Wada, C.A.**, 2014. Optimal groundwater management when recharge is declining: a method for valuing the recharge benefits of watershed conservation. *Environmental Economics and Policy Studies* 16(3), 263-278.
- Endress, L., Pongkijvorasin, S., Roumasset, J., **Wada, C.A.**, 2014. Intergenerational Equity with Individual Impatience in a Model of Optimal and Sustainable Growth. *Resource and Energy Economics* 36(2), 620-635.
- Burnett, K., Endress, L., Ravago, M.-L., Roumasset, J., **Wada, C.A.**, 2014. Islands of sustainability in time and space. *International Journal of Sustainable Society* 6(1-2), 9-27.
- Roumasset, J., **Wada, C.A.**, 2013. A dynamic approach to PES pricing and finance of interlinked ecosystem services: Watershed conservation and groundwater management. *Ecological Economics* 87, 24-33.
- Burnett, K., Roumasset, J., **Wada, C.A.**, 2012. Multi-instrument pollution abatement from multiple sources: The case of nitrogen pollution in groundwater. *Journal of Sustainable Watershed Science & Management* 1(3), 76-83.
- Burnett, K., D'Evelyn, S., Loope, L., **Wada, C.A.**, 2012. An Economic Approach to Assessing Import Policies Designed to Prevent the Arrival of Invasive Species: The case of Puccinia psidii in Hawai'i. *Environmental Science & Policy* 19-20, 158-168.
- Roumasset, J.A., **Wada, C.A.**, 2012. Ordering the extraction of renewable resources: The case of multiple aquifers. *Resource and Energy Economics* 34(1), 112-128.
- Roumasset, J.A., **Wada, C.A.**, 2011. Ordering renewable resources: Groundwater, recycling, and desalination. *The B.E. Journal of Economic Analysis & Policy* 11(1), Contributions, Article 28.
- Roumasset, J.A., **Wada, C.A.**, 2010. Optimal and sustainable groundwater extraction. *Sustainability* 2(8), 2676-2685.

## **Book Chapters**

- Burnett, K., Pongkijvorasin, S., Roumasset, J., **Wada, C.A.**, 2015. Incentivizing interdependent resource management: watersheds, groundwater, and coastal ecology. In: Dinar, A., Schwabe, K. (Eds.), *Handbook of Water Economics*, Cheltenham and Northampton: Edward Elgar Publishing.

Burnett, K., Roumasset, J., **Wada, C.A.**, 2015. The Good, Bad, and Ugly of Watershed Management. In: Burnett, K., Howitt, R., Roumasset, J.A., Wada, C.A. (Eds.), *Routledge Handbook of Water Economics and Institutions*, pp. 100-110, Oxford and New York: Routledge.

Jandoc, K., Howitt, R., Roumasset, J., **Wada, C.A.**, 2015. Institutions for Conjunctive-Use Management and the Theory of the Second-Best. In: Burnett, K., Howitt, R., Roumasset, J.A., Wada, C.A. (Eds.), *Routledge Handbook of Water Economics and Institutions*, pp. 165-180, Oxford and New York: Routledge.

Roumasset, J., **Wada, C.A.**, 2015. Integrating Demand-Management with Development of Supply-Side Substitutes. In: Burnett, K., Howitt, R., Roumasset, J.A., Wada, C.A. (Eds.), *Routledge Handbook of Water Economics and Institutions*, pp. 50-60, Oxford and New York: Routledge.

Roumasset, J., **Wada, C.A.**, 2015. Ordering Extraction from Multiple Aquifers. In: Burnett, K., Howitt, R., Roumasset, J.A., Wada, C.A. (Eds.), *Routledge Handbook of Water Economics and Institutions*, pp. 40-49, Oxford and New York: Routledge.

Burnett, K.M., Roumasset, J.A., **Wada, C.A.**, 2015. Optimal Joint Management of Interdependent Resources: Groundwater versus Kiawe (*Prosopis pallida*). In: Balisacan, A.M., Chakravorty, U., Ravago, M.-L.V. (Eds.), *Sustainable Economic Development: Resources, Environment and Institutions*, pp. 91-104, Oxford: Academic Press.

Roumasset, J.A., **Wada, C.A.**, 2015. Integrated Groundwater Resource Management. In: Balisacan, A.M., Chakravorty, U., Ravago, M.-L.V. (Eds.), *Sustainable Economic Development: Resources, Environment and Institutions*, pp. 77-89, Oxford: Academic Press.

Roumasset, J., **Wada, C.A.**, 2014. Groundwater economics. In: Whitehead, J., Haab, T. (Eds.), *Environmental and Natural Resource Economics: An Encyclopedia*, Santa Barbara: Greenwood.

Roumasset, J.A., **Wada, C.A.**, 2013. Economics of Groundwater. In: Shogren, J.F. (Ed.), *Encyclopedia of Energy, Natural Resource, and Environmental Economics*, volume 2, pp. 10-21, Amsterdam: Elsevier.

### **Edited Books**

Burnett, K., Howitt, R., Roumasset, J.A., **Wada, C.A.** (Eds.), 2015. *Routledge Handbook of Water Economics and Institutions*, Oxford and New York: Routledge.

### **Other Publications**

Chun, G., Adler, P., Arik, A., Burnett, K., Redding, N., **Wada, C.**, 2017. Organizational Study of Water Management Networks and Processes in Hawai'i. Prepared for Ulupono Initiative.

Burnett, K., **Wada, C.**, 2016. Assessing the Costs of Priority HISC Species in Hawaii. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for The Hawaii Invasive Species Council.

Burnett, K., **Wada, C.**, 2016. Economic Valuation of The Nature Conservancy's Watershed Conservation on Hawai'i Island: Ka'u and Kona Hema. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for The Nature Conservancy.

Burnett, K., **Wada, C.**, 2016. Recent Trends in Hawai'i's Green Economy. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for Hau'oli Mau Loa Foundation.

Burnett, K., Cintina, I., **Wada, C.**, 2014. The Economic Impact of Astronomy in Hawai'i. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for Mauna Kea Observatories.

Burnett, K., **Wada, C.**, Coffman, M., 2013. Methodologies to Assess the Value of the Coastal Zone Management (CZM) Special Management Area (SMA) Permit Program. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for the State of Hawai'i Department of Business, Economic Development & Tourism, Office of Planning.

Cintina, I., Burnett, K., **Wada, C.**, 2013. The Economic Impact of the University of Hawai'i System. University of Hawai'i Economic Research Organization Report.

Burnett, K., **Wada, C.**, 2012. Foundations for Hawaii's Green Economy: Economic Trends in Hawai'i Agriculture, Energy, and Natural Resource Management. University of Hawai'i Economic Research Organization, Project Environment Report. Prepared for Hau'oli Mau Loa Foundation and The Nature Conservancy.

Burnett, K., D'Evelyn, S., Loope, L., **Wada, C.**, 2012. Economic Analysis of the Proposed Rule to Prevent Arrival of New Genetic Strains of the Rust Fungus *Puccinia psidii* in Hawai'i. Technical Report No. 177. The Hawai'i-Pacific Islands Cooperative Ecosystem Studies Unit & Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i. 50 pp.

Roumasset, J., **Wada, C.**, 2010. Beyond sustainable yield: Managing water scarcity for abundance. University of Hawai'i, Mānoa Water Resources Research Center, May 2010 bulletin.

### **Works in Progress**

Burnett K., Ticktin, T., Winter, K., Bremer, L., Quazi, S., Geslani, C., **Wada, C.**, Kurashima, N., Mandle, L., Pascua, P., Depraetere, T., Wolkis, D., Edmonds, M., Giambelluca, T. Restoring to the Future: Environmental, Cultural, and Management Trade-Offs in Historical versus Hybrid Restoration of a Novel Ecosystem. Under review.

Endress, L.H., Roumasset, J.A., **Wada, C.A.** Do natural disasters make sustainable growth impossible? Revised and resubmitted.

Bremer, L.L., Mandle, L., Trauernicht, C., Burnett, K., Pascua, P., McMillen, H.L., Kurashima, N., **Wada, C.A.**, Quazi, S., Giambelluca, T.W., Chock, P., Ticktin, T. Bringing multiple values to the table: assessing future land-use and climate change in North Kona, Hawai'i. Revised and resubmitted.

Burnett, K., **Wada, C.A.** Accounting for externalities in the water energy food nexus. Under review.

### **Conference, Workshop, and Seminar Presentations**

2017 Economic Applications in the Water-Energy-Food Nexus. Human-Environmental Security in the Asia Pacific Ring of Fire Water-Energy-Food Nexus International Meeting. Research Institute for Humanity and Nature, Kyoto, Japan, Aug. 21-24, 2017.

- The Economics of Water Resource Management: Oahu, Maui, and Kona [w/ J. Roumasset]. IHS/STRATA/PERC Policy Research Seminar: The Challenge of Balancing Competing Demands for Water. Lahaina, Hawai'i, Apr. 8, 2017.
- Costs of Restoration of Dry Forest Ecosystems. Nāhelehele Dryland Forest Symposium. Kona, Hawai'i, Feb. 24, 2017.
- 2016 Payments for Watershed Services: In Theory and Practice. A Conference in Celebration of Sumner La Croix and Jim Roumasset's Careers in Economics at UHM: Resources, Institutions, and the State. Honolulu, Hawai'i, Nov. 12, 2016.
- 2012 Optimal Joint Management of Interdependent Resources: The Case of Groundwater and Kiawe (*Prosopis pallida*) [w/ K. Burnett]. Risk, Resources, Governance and Development: Foundations for Public Policy Conference. Honolulu, Hawai'i, Dec. 7-8, 2012.
- 2011 Planning for the Integrated Use of Groundwater, Recycled Wastewater, and Desalination [w/ J. Roumasset]. Water Resource Sustainability Issues on Tropical Islands Conference. Honolulu, Hawai'i, Nov. 14-16, 2011.
- Economic Analysis of the Proposed Rule to Prevent Arrival of New Genetic Strains of the Rust Fungus *Puccinia psidii* [w/ K. Burnett]. Hawai'i Conservation Conference. Honolulu, Hawai'i, Aug. 2-4, 2011.
- 2010 Sustainability Science for Policy Analysis: The Case of Watershed Conservation and Groundwater Management [w/ J. Roumasset]. 12th Occasional California Workshop on Environmental and Resource Economics. Santa Barbara, California, Nov. 12-13, 2010.
- Watershed Conservation as Climate Adaptation [w/ J. Roumasset]. Sustainability Science for Foods, Forests, and Floods: Integrating Climate Adaptation and Pro-Poor Resource Management Workshop. Honolulu, Hawai'i, May 27-28, 2010.
- Beyond Sustainable Yield: Managing Multiple Aquifers, Recycling, and Watershed Conservation in the South O'ahu Aquifer System [w/ J. Roumasset]. University of Hawai'i at Mānoa Water Resources Research Center Seminar. Honolulu, Hawai'i, Mar. 5, 2010.
- 2009 Integrated Management of the South O'ahu Aquifer System: A Spatial and Temporal Approach [w/ J. Roumasset]. University of Hawai'i at Mānoa Department of Economics Applied Economics Workshop. Honolulu, Hawai'i, Sep. 23, 2009.
- 2008 Beyond Sustainable Yield: Managing the South O'ahu Aquifer over Space and Time [w/ J. Roumasset]. University of Hawai'i at Mānoa Water Resources Research Center Water Management Workshop. Honolulu, Hawai'i, May 19, 2008.

### **Referee Activity**

American Journal of Agricultural Economics, Canadian Journal of Agricultural Economics, Climate and Development, Contemporary Economic Policy, Diversity and Distributions, Ecological Economics, Economic Development and Cultural Change, Energy Journal, Environmental and Resource Economics, Environment and Development Economics, Environmental Modeling & Assessment, Forest Policy and Economics, International Journal of Sustainable Society, Journal of Agricultural and Resource Economics, Journal of Economic Dynamics and Control, Journal of

Environmental Economics and Management, Journal of Environmental Management, Journal of Policy Analysis and Management, Journal of Political Economy, Journal of Sustainable Forestry, Mitigation and Adaptation Strategies for Global Change, Natural Resource Modeling, Proceedings of the National Academy of Sciences, Quarterly Journal of Economics, Resource and Energy Economics, Scandinavian Journal of Economics, Sustainability, Water Resources and Economics, Water Resources Research