

Louis Sears

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Education

Cornell University

Ph.D. candidate, Applied Economics and Management (August 2017-present)

Cornell University

M.S., Applied Economics and Management, 2020

University of California at Davis

M.S., Agricultural and Resource Economics, 2017

University of Chicago

B.A. in Economics, 2012

B.A. *with Honors* in Public Policy, 2012

Fields of Interest

Economics of sustainable agricultural groundwater management

Natural resource economics

Agricultural economics

Environmental and energy economics

Peer-Reviewed Publications

Sears, Louis, David Lim, and C.-Y. Cynthia Lin Lawell. (2019). Spatial groundwater management: A dynamic game framework and application to California. Water Economics and Policy, 5 (1), 1850019.

Sears, Louis, and C.-Y. Cynthia Lin Lawell. (2019). Water management and economics. In Gail L. Cramer, Krishna P. Paudel, and Andrew Schmitz (Eds.), The Routledge Handbook of Agricultural Economics (pp. 269-284). London: Routledge.

Sears, Louis, David Lim, and C.-Y. Cynthia Lin Lawell. (2018). The economics of agricultural groundwater management institutions: The case of California. Water Economics and Policy, 4 (3), 1850003.

- Sears, Louis, Joseph Caparelli, Clouse Lee, Devon Pan, Gillian Strandberg, Linh Vuu, and C.-Y. Cynthia Lin Lawell. (2018). Jevons' Paradox and efficient irrigation technology. Sustainability, 10 (5), 1590.
- Coady, David, Ian Parry, Louis Sears, and Baoping Shang. (2017). How large are global fossil fuel subsidies? World Development, 91, 11-27.
- Coady, David, Valentina Flamini, and Louis Sears. (2015). The unequal benefits of fuel subsidies revisited: Evidence for developing countries. In Benedict Clements, Ruud de Mooij, Sanjeev Gupta, and Michael Keen (Eds.), Fiscal Policy and Income Inequality (Chapter 14). IMF Press.
- Shang, Baoping, Ian Parry, and Louis Sears. (2013). Estimating pretax and posttax global energy subsidies. In Benedict Clements, David Coady, Stefania Fabrizio, Sanjeev Gupta, Trevor Alleyne, and Carlo Sdravovich (Eds.), Energy Subsidy Reform: Lessons and Implications (Appendix A). IMF Press.

Other Publications

- Sears, Louis, David Lim, and C.-Y. Cynthia Lin Lawell. (2017). Agricultural groundwater management in California: Possible perverse consequences? Agricultural and Resource Economics Update, 20 (3), 1-3.
- Fabrizio, Stefania, Alexei Goumilevski, and Kangni Kpodar (research assistance: Louis Sears). (2016). A New Tool for Distributional Incidence Analysis: An Application to Fuel Subsidy Reform. IMF Technical Notes and Manuals 16/07.
- Kpodar, Kangni Roland, and Chadi Abdallah (research assistance: Louis Sears). (2016). Dynamic Fuel Price Pass-Through; Evidence from a New Global Retail Fuel Price Database. IMF Working Papers 16/254.
- Kochhar, Kalpana, Catherine Pattillo, Yan Sun, Nujin Suphaphiphat, Andrew Swiston, Robert Tchaidze, Benedict Clements, Stefania Fabrizio, Valentina Flamini, Laure Redifer, Harald Finger, Ian Parry, Louis Sears, Frank Wallace, and IMF Staff Team. (2015). Is the Glass Half Empty or Half Full?: Issues in Managing Water Challenges and Policy Instruments. IMF Staff Discussion Note SDN/15/11.
- Coady, David, Ian Parry, Louis Sears, and Baoping Shang. (2015). How Large Are Global Energy Subsidies? IMF Working Paper WP/15/105.
- Gupta, Sanjeev, Michael Keen, Benedict Clements, Victoria Perry, David Coady, Ruud De Mooij, Stefania Fabrizio, Baoping Shang, Allan Dizioli, Luc Eyraud, Csaba Feher, Valentina Flamini, Alvar Kangur, Javier Kapsoli, Carlos Mulas-Granados, Peter Mullins, Philippe Wingender, Dora Benedek, Ryan Espiritu, and Louis Sears. (2014). Fiscal Policy and Income Inequality. IMF Policy Paper.
- Sears, Louis. (2013). Subsidy Reform: Lessons and Implications. IMF Policy Paper.
- Sears, Louis. (2011). How Consumers Respond to Stimulus Payments. Region Focus. Richmond Federal Reserve Bank.
- Sears, Louis. (2011). Carolina Gold: Exploration at a Historic Mine in South Carolina is Put on Hold. Region Focus. Richmond Federal Reserve Bank.
- Sears, Louis. (2011). Jargon Alert: Utility. 2011. Region Focus. Richmond Federal Reserve Bank.

Working Papers

Sears, Louis, C.-Y. Cynthia Lin Lawell, and M. Todd Walter. (2022). Groundwater under open access: A structural model of the dynamic common pool extraction game. Working paper, Cornell University.

Sears, Louis, C.-Y. Cynthia Lin Lawell, David Lim, Gerald Torres, and M. Todd Walter. (2022). Interjurisdictional spatial externalities in groundwater management. Working paper, Cornell University.

Sears, Louis, C.-Y. Cynthia Lin Lawell, Gerald Torres, and M. Todd Walter. (2022). Managing common pool resources: Lessons from groundwater resource extraction in California. Working paper, Cornell University.

Sears, Louis, C.-Y. Cynthia Lin Lawell, Gerald Torres, and M. Todd Walter. (2022). Adjudicated groundwater property rights: A structural model of the dynamic game among groundwater users in California. Working paper, Cornell University.

Sears, Louis, C.-Y. Cynthia Lin Lawell, Gerald Torres, and M. Todd Walter. (2022). Moment-based Markov equilibrium estimation of high-dimension dynamic games: An application to groundwater management in California. Working paper, Cornell University.

Sears, Louis, and C.-Y. Cynthia Lin Lawell. (2022). Dual rights to groundwater: Theory and application to California. Working paper, Cornell University.

Sears, Louis, Ernst Bertone Oehninger, David Lim, and C.-Y. Cynthia Lin Lawell. (2022). The economics of sustainable agricultural groundwater management: Recent findings. Working paper, Cornell University.

Awards and Honors

Cornell TREESPEAR Research Grant (2022)

Cornell DEEP-GREEN-RADAR Research Grant (2022)

Dyson Graduate Student – Research Excellence Award (2022)

Cornell DEEP-GREEN-RADAR Research Grant (2021)

Cornell TREESPEAR Research Grant (2021)

Robert R. Dyson Fellowship (2020-2021)

Northeastern Agricultural and Resource Economics Association (NAREA) Best Student Paper Award (2020)

Cornell TREESPEAR Research Grant (2020)

Cornell DEEP-GREEN-RADAR Research Grant (2020)

George F. Warren Award for Outstanding Paper, Second Place (2020)

Cornell DEEP-GREEN-RADAR Travel Grant (2020)

Cornell TREESPEAR Travel Grant (2020)
Robert R. Dyson Fellowship (2019-2020)
Cornell University Graduate School Conference Grant (August 2019)
Cornell University Graduate School Conference Grant (June 2019)
Cornell University Ching Endowment Summer Fellowship (2019)
Agricultural and Applied Economics Association (AAEA) Chester O. McCorkle, Jr. Student Scholarship (2019)
Benjamin H. Stevens Graduate Fellowship in Regional Science Finalist (2019)
Cornell University Graduate School Conference Grant (December 2017)
University of California at Davis Fellowship for Excellence in Graduate Research (June 2017)
Giannini Fellowship (Fall 2016)
University of California at Davis Agricultural and Resource Economics First-Year Supplemental Fellowship (Spring 2016)
University of California at Davis Agricultural and Resource Economics First-Year Supplemental Fellowship (Winter 2016)
University of California at Davis Agricultural and Resource Economics First-Year Fellowship (Fall 2015)
International Monetary Fund Annual Award (2014)
International Monetary Fund Expenditure Policy Divisional Award (2013)
International Monetary Fund Fiscal Affairs Departmental Award (2013)
International Monetary Fund Annual Award (2013)

Presentations

“Groundwater under open access: A structural model of the dynamic common pool extraction game.” Sustainable Environment, Energy and Resource Economics (SEERE) Research Seminar. Cornell University. Ithaca, NY. September 2021.

“Adjudicated groundwater property rights: A structural model of the dynamic game among groundwater users in California.” Northeastern Agricultural and Resource Economics Association (NAREEA) Virtual Annual Meeting. June 2021.

“Groundwater under open access: A structural model of the dynamic common pool extraction game.” Association of Environmental and Resource Economists (AERE) Summer Conference. June 2021.

“Groundwater under open access: A structural model of the dynamic common pool extraction game.” North American Meetings of the Regional Science Association International. Virtual Conference. November 2020.

“Groundwater under open access: A structural model of the dynamic common pool extraction game.” In Your Own Backyard: Innovative Perspectives on the Environment. Cornell University. Ithaca, NY. October 2020.

- “Groundwater under open access: A structural model of the dynamic common pool extraction game.” Sustainable Environment, Energy and Resource Economics (SEERE) Research Seminar. Cornell University. Ithaca, NY. September 2020.
- “Groundwater under open access: A structural model of the dynamic common pool extraction game.” Agricultural and Applied Economics Association (AAEA) Annual Meeting. August 2020.
- “Groundwater under open access: A structural model of the dynamic common pool extraction game.” Association of Environmental and Resource Economists (AERE) Session at the Western Economic Association International (WEAI) Annual Conference. June 2020.
- Discussant for “The Effect of Close Electoral Outcomes on Pollution Abatement and Monitoring: An Example from India’s 1996 Lok Sabha Election” by Michael Jerman. Association of Environmental and Resource Economists (AERE) Session at the Western Economic Association International (WEAI) Annual Conference. June 2020.
- “Groundwater under open access: A structural model of the dynamic common pool extraction game.” Northeastern Agricultural and Resource Economics Association (NAREA) 2020 Annual Meeting. June 2020.
- “Groundwater under open access: A structural model of the dynamic common pool extraction game.” Sustainable Environment, Energy and Resource Economics (SEERE) Research Seminar. Cornell University. Ithaca, NY. December 2019.
- “Property rights and groundwater management: A dynamic structural model of the dual rights system in California.” Poster presentation. Agricultural and Applied Economics Association (AAEA) Annual Meeting. Atlanta, GA. July 2019.
- “Property rights and groundwater management: A dynamic structural model of the dual rights system in California.” Northeastern Agricultural and Resource Economics Association (NAREA) Annual Meeting. Portsmouth, NH. June 2019.
- “Property rights and groundwater management: A dynamic structural model of the dual rights system in California.” Mid-Continent Regional Science Association (MCRSA) 50th Annual Conference. Madison, WI. June 2019.
- “Property rights and groundwater management: A dynamic structural model of the dual rights system in California.” Second-Year Paper Presentation. Cornell University. Ithaca, NY. May 2019.
- “Property rights and groundwater management: A dynamic structural model of the dual rights system in California.” Sustainable Environment, Energy and Resource Economics (SEERE) Research Seminar. Cornell University. Ithaca, NY. March 2019.
- “Dual rights to groundwater: Theory and application to California.” Tenth Annual Meeting of the Society for Environmental Law and Economics. Notre Dame Law School in Chicago. Chicago, IL. June 2018.
- “Dual rights to groundwater: Theory and application to California.” Sustainable Environment, Energy and Resource Economics (SEERE) Research Seminar. Cornell University. Ithaca, NY. March 2018.

“My experience as an EERE PhD student at Cornell.” Environmental, Energy, and Resource Economics Applicant Info Session, Cornell Dyson School of Applied Economics and Management Ph.D. and M.S. Open House. Cornell University. Ithaca, NY. March 2018.

“Dual rights to groundwater: Theory and application to California.” Conference celebrating the 25th Anniversary of Douglass North's Nobel Prize in Economics. George Mason University, Arlington Campus. Arlington, VA. March 2018.

“Interjurisdictional spatial externalities in groundwater management.” North American Meetings of the Regional Science Association International. Vancouver. November 2017.

Discussant for “Territorial governance and proximity dynamics. The case of two public policy arrangements in the Brazilian Amazon” by Etienne Polge and André Torre. North American Meetings of the Regional Science Association International. Vancouver. November 2017.

“Dual rights to groundwater: Theory and application to California.” Canadian Resource and Environmental Economics (CREE) Study Group Annual Conference. London, Ontario. September 2017.

Discussant for “Roads and Resources: Groundwater Depletion in the North China Plains” by Ujjayant Chakravorty, Xiangzheng Deng, Yazhen Gong, Martino Pelli, and Qian Zhang. Canadian Resource and Environmental Economics (CREE) Study Group Annual Conference. London, Ontario. September 2017.

Research Experience

Cornell University (Ithaca, NY)

Graduate Research Associate, Cornell University DEEP-GREEN-RADAR

Cornell University Dynamics, Economics, Econometrics, Policy, and Games: Rigorous Environmental, Energy, Natural Resource, Agriculture, and Development Analysis and Research (DEEP-GREEN-RADAR)

Advisor: Professor C.-Y. Cynthia Lin Lawell

July 2017 to present

Cornell University (Ithaca, NY)

Graduate Research Associate, Cornell University TREESPEAR

Cornell University Think-tank for Resources, Energy, and the Environment: Science and Policy-related Economic Analysis and Research (TREESPEAR)

Advisor: Professor C.-Y. Cynthia Lin Lawell

July 2017 to present

University of California at Davis (Davis, CA)

Graduate Student Researcher

Advisor: Professor C.-Y. Cynthia Lin Lawell

Fall 2015 - September 2017

International Monetary Fund (Washington, DC)

Research Assistant

June 2012-June 2015

Federal Reserve Bank of Richmond (Richmond, VA)
Research Publications Intern
Summer 2011

Teaching Experience

University of California at Davis (Davis, CA)
Guest Lecture, Natural Resource Economics
Spring 2017

University of California at Davis (Davis, CA)
Intermediate Microeconomics: Theory of Production and Consumption
Winter 2017

University of California at Davis (Davis, CA)
Resource and Environmental Policy Analysis (with Professor C.-Y. Cynthia Lin Lawell)
Spring 2016

Mentoring and Advising Experience

David Lim
B.S., Environmental Science and Management, University of California at Davis, 2017
American Water Works Association California-Nevada Section undergraduate scholarship, 2017
M.P.S. candidate in Applied Economics and Management, Cornell University

Professional Activities

Referee, *Water Resources and Economics*. 2021.

Referee, *Resource and Energy Economics*. 2020.

Session Chair, Managing Power and Water. North American Meetings of the Regional Science Association International. Virtual Conference. November 2020.

Invited Participant, Roundtable Discussion: Transitioning out of Open-Access to Managing Groundwater Environmental Defense Fund. December 2019.

Invited Participant, Social Cost of Water Pollution Workshop. Atkinson Center for a Sustainable Future. April 2019.

Referee, *Energy Policy*. 2017.

Media Citations

“Louis Sears awarded Cornell Dyson Graduate Student -- Research Excellence Award”. Cornell University Think-tank for Resources, Energy, and the Environment: Science and Policy-related Economic

- Analysis and Research (TREESPEAR). June 2022. URL: https://treespear.dyson.cornell.edu/louis_sears_awards_DysonResearchExcellence.html
- “Dyson celebrates 2020 faculty, staff, and student award recipients”. *Dyson Business Feed*. 22 June 2020. URL: <https://business.cornell.edu/hub/2020/06/22/dyson-2020-award-recipients/>
- “Louis Sears awarded McCorkle Scholarship by the Agricultural and Applied Economics Association”. Cornell University Dynamics, Economics, Econometrics, Policy, and Games: Rigorous Environmental, Energy, Natural Resource, Agriculture, and Development Analysis and Research (DEEP-GREEN-RADAR). December 2019. URL: http://deep-green-radar.dyson.cornell.edu/louis_sears_awards_McCorkle.html
- “Professor Lin Lawell and #Cornell students examine possible consequences of incentive-based programs for agricultural groundwater conservation”. Cornell Dyson on Twitter, @DysonSchool. 15 November 2019. URL: <https://twitter.com/CornellDyson/status/1195356125807427584>
- “Professor Lin Lawell and #Cornell students examine possible consequences of incentive-based programs for agricultural groundwater conservation. #EconTwitter #CornellDyson”. Cornell Dyson on Twitter, @DysonSchool. 15 September 2019. URL: <https://twitter.com/CornellDyson/status/1173340741197860864?s=17>
- “Years of drought have parched #California's vast agricultural lands, prompting higher water costs. #CornellDyson researchers have a solution to coordinate water use @CornellNews”. Cornell Dyson on Twitter, @DysonSchool. 13 September 2019. URL: <https://twitter.com/CornellDyson/status/1172555626268041219?s=17>
- “Professor Lin Lawell and #Cornell students examine possible consequences of incentive-based programs for agricultural groundwater conservation”. Cornell Dyson on Twitter, @DysonSchool. 21 July 2019. URL: <https://twitter.com/CornellDyson/status/1152926288597962752>
- “Years of drought have parched #California's vast agricultural lands, prompting higher water costs. #CornellDyson researchers have a solution to coordinate water use”. Cornell Dyson on Twitter, @DysonSchool. 6 July 2019. URL: <https://twitter.com/CornellDyson/status/1147550797368111109>
- “Years of drought have parched #California's vast agricultural lands, prompting higher water costs. #CornellDyson researchers have a solution to coordinate water use. @CornellNews”. Cornell Dyson on Twitter, @DysonSchool. 17 May 2019. URL: <https://twitter.com/CornellDyson/status/1129431605448257538>
- “Research Recap: Can groundwater conservation policies have unintended consequences?”. *Dyson Business Feed*. 9 May 2019. URL: <https://dyson.cornell.edu/businessfeed/2019/05/09/research-groundwater-conservation-policies/>
- “Years of drought have parched #California's vast agricultural lands, prompting higher water costs. #CornellDyson researchers have a solution to coordinate water use”. Cornell Dyson on Twitter, @DysonSchool. 31 March 2019. URL: <https://twitter.com/CornellDyson/status/1112338788682997760?s=17>
- “Years of drought have parched California's vast agricultural lands, prompting higher water costs. #CornellDyson researchers have a solution to coordinate water use”. Cornell Dyson on Twitter,

- @DysonSchool. 14 January 2019. URL: <https://twitter.com/CornellDyson/status/1084857860327202817>
- “The shape of water: When ag water management pays off”. *Newswise*. 9 January 2019. URL: <https://www.newswise.com/articles/the-shape-of-water-when-ag-water-management-pays-off>
- “The shape of #water: When agricultural water management pays off”. Cornell Chronicle on Twitter, @CornellNews. 9 January 2019. URL: <https://twitter.com/CornellNews/status/1083113168421953536>
- “The shape of water: When ag water management pays off”. *Cornell Chronicle*. 8 January 2019. URL: <http://news.cornell.edu/stories/2019/01/shape-water-when-ag-water-management-pays>
- “Subsidies and puppies”. *Energy Institute at Haas blog*. 19 March 2018. URL: <https://energyathaas.wordpress.com/2018/03/19/subsidies-and-puppies/>
- “Louis Sears presented spatial groundwater research”. Cornell University Think-tank for Resources, Energy, and the Environment: Science and Policy-related Economic Analysis and Research (TREESPEAR). November 2017. URL: http://treespear.dyson.cornell.edu/louis_sears_news_NARSC.html
- “Louis Sears presented research on groundwater property rights”. Cornell University Think-tank for Resources, Energy, and the Environment: Science and Policy-related Economic Analysis and Research (TREESPEAR). November 2017. URL: http://treespear.dyson.cornell.edu/louis_sears_news_CREE.html
- “Groundwater research by Louis Sears and David Lim receives media attention”. Cornell University Think-tank for Resources, Energy, and the Environment: Science and Policy-related Economic Analysis and Research (TREESPEAR). August 2017. URL: http://treespear.dyson.cornell.edu/louis_sears_david_lim_news_media.html
- “Commentary: Underground overwatering no assurance of security”. *The Porterville Recorder*. 17 April 2017. URL: http://www.recorderonline.com/news/commentary-underground-overwatering-no-assurance-of-security/article_2e08fc32-2311-11e7-871e-37db3e8ad9e4.html
- “Ag at Large: Underground Overwatering No Security Assurance”. *Western Farm Press*. 24 March 2017. URL: <http://www.westernfarmpress.com/water/ag-large-underground-overwatering-no-security-assurance>
- “Working as one UN to address the root environmental causes of ill health”. Dr. Margaret Chan, Director-General of WHO; Erik Solheim, Executive Director of United Nations Environmental Programme; and Petteri Taalas, Secretary-General of World Meteorological Organization. 3 January 2017. URL: <http://www.who.int/mediacentre/commentaries/2017/one-un-environmental-health/en/>
- “Policy: Five cornerstones of a global bioeconomy”. *Nature*. 12 July 2016. URL: <http://www.nature.com/news/policy-five-cornerstones-of-a-global-bioeconomy-1.20228>
- “The High Cost of Dirty Fuels”. *The New York Times*. 21 May 2015. URL: <http://www.nytimes.com/2015/05/21/opinion/the-high-cost-of-dirty-fuels.html>

Technical Skills

Matlab
Stata
R

Professional References

C.-Y. Cynthia Lin Lawell, Ph.D.

Associate Professor and Robert Dyson Sesquicentennial Chair in Environmental, Energy and Resource Economics

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M. Todd Walter, Ph.D.

Professor

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Gerald Torres, J.D., LL.M.

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David Coady, Ph.D.

Assistant Director, Expenditure Policy

Fiscal Affairs Department

International Monetary Fund

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