

# Isabel Jorgensen

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Calgary, AB

## EDUCATION

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### University of Waterloo, Waterloo, ON, Canada

Sep 2021 – Sep 2025

Social and Ecological Sustainability - Water, PhD Candidate; **Excellent (94%)**<sup>1</sup>

**Thesis:** How Terminal Lakes Die: Understanding Sacrifice Zones in the American West through Ecohydrology, Political Economy, and Organizational Ecology

(advised by Dr. Dustin Garrick, committee: Dr. Nandita Basu, Dr. Graham Epstein, Dr. Brad Fedy, Dr. Andrew Trant)

- Developed Bayesian models linking migratory waterbird populations and desert lake surface water dynamics
  - Created a typology and datasets for evaluating public/private landownership in desert basins
  - Conducted in-depth case study on advocacy strategies of multiple NGOs in Salton Sea region
- Comprehensive/Candidacy Examination: Passed with highest commendation

### University of Oxford, Wolfson College, Oxford, UK

Oct 2019 – Sep 2020

Water Science, Policy and Management, MSc.; **Distinction**<sup>2</sup>

**Thesis:** A hidden agenda? Piloting a rapid diagnostic approach for rural-urban water conflict in Addis Ababa, Ethiopia (advised by Dr. Dustin Garrick)

- Integrated Bayesian process tracing with SWAT hydrology models and remote sensing techniques

### Trinity College Dublin, Dublin, Ireland

Sep 2015 – May 2019

Environmental Science, BA(Hons.); **First Class Honours**<sup>3</sup> (ranked first in School of Natural Sciences)

**Thesis:** Investigating the Impacts of a Rural-to-Urban Water Transfer on Nutrient Loading to the Salton Sea, California (advised by Dr. Catherine Coxon)

- Longitudinal analysis of nutrient flux data to a large saline lake relying on irrigation runoff

### Supplementary Qualifications

- *Water Leadership Certificate*; University of Waterloo, 2024
- *Theories of the Public Policy Process with Frank Fischer*; International Public Policy Association, Aussois, France, 2024
- *Climate Change and Water Security in Urbanized Watersheds: An Interdisciplinary Perspective*; University of Waterloo, online, 2021
- *Machine Learning*; MIT, online, 2020
- *Systems-thinking and Facilitation*; Climate-KIC, Finland, Norway & Hungary; 2019
- *Enterprise and the Environment*; Smith School, Oxford, 2017
- *Advanced Statistics*; Somerville College, Oxford, 2017
- *Physics of the Climate System*; Utrecht University, 2017

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<sup>1</sup>University of Waterloo designates 80-100 as the upper most marking tier (i.e., Excellent standing). Individual courses where upper most marking tiers were achieved are indicated by an asterisk (\*) here on.

<sup>2</sup>Distinction is the upper most marking tier in the UK.

<sup>3</sup>First class is the upper most marking tier in Ireland.

## GRANTS, FELLOWSHIPS, & AWARDS (250,000+ CAD)

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- **PLAYA Residency** (2025), arts and sciences collaborative research residency at PLAYA in Summer Lake (Oregon), awarded to eight scientists per year (~2,500 CAD)
- **P.E.O. Scholar** (2024-2025), P.E.O., awarded to women who have demonstrated their ability to make significant contributions and be a leader in their chosen field of study (25,000 CAD)
- **Good Citizen Award** (2024), School of Environment and Resource Sustainability, awarded to students who have contributed disproportionately to the School community through mentorship and volunteering (50 CAD)
- **Data with Purpose Grant** (2024), Regrid, providing affordable access to nationwide parcel-level data for research with high impact potential (10,000 CAD)
- **American Ornithological Society Conference Grant** (2024), awarded to select early career researchers presenting at the Society Annual Meeting (1,000 CAD)
- **Graduate Student Research Dissemination Award** (2024), awarded to graduate students presenting their research at a conference (700 CAD)
- **Lincoln Research Grant** (2023-2024), Lincoln Institute of Land Policy, grant awarded for exploratory land use policy research (~20,000 CAD)
- **Leadership Fellow** (2023-ongoing), Blue Range Labs, University of Waterloo
- **Public Policy Travel Grant** (2023), International Public Policy Association (650 CAD)
- **Research Grant** (2023), Global Resilience Partnership, grant awarded for research on agrifood systems (~40,000 CAD)
- **Early Career Fellow** (2022-ongoing), Programme on Ecosystem Change and Society (PECS), Future Earth (800 CAD)
- **Early Career Fellow** (2022-2024), Ecosystem Approach Group, University of Windsor
- **UN Water Conference Delegate** (2023), selected by the Water Institute at University of Waterloo to represent the university and advance our emerging alumni network (2,500 CAD)
- **Faculty of Environment's Dean Doctoral Initiative** (2021-2025), University of Waterloo, awarded to top 10 doctoral applicants to Faculty of Environment, (100,000 CAD)
- **International Doctoral Student Award** (2021-2025), University of Waterloo, awarded to top international doctoral applicants (~60,000 CAD)
- **Provost Doctoral Entrance Award for Women** (2021), University of Waterloo 5000 CAD)
- **Entrance Scholarship** (2021), University of Waterloo (3000 CAD)
- **Research Grant** (2020-2021), World Bank, grant awarded for research on reallocation in Middle East and North Africa (84,500 CAD)
- **Trinity College Dublin Gold Medal** (2019), awarded by the College Board to students who have demonstrated exceptional merit at degree examination (most prestigious univ. award in Ireland)
- **Ireland's Undergraduate of the Year** (2019), awarded by the Environmental Sciences Association of Ireland in acknowledgement of excellence in environmental research
- **Trinity Women Who Lead Award** (2018, 2019), awarded by Trinity College Dublin's Student Union to women that inspire and lead their peers
- **An Taisce Climate Ambassador Award** (2018), awarded by Ireland's National Trust for outstanding communication and action on climate change
- **Brian McMurphy Prize** (2018), awarded to the Junior Sophister Candidate with the highest overall marks in the School of Natural Sciences (~200 CAD)

## RESEARCH EXPERIENCE

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### **Data Consultant, Gordon Foundation**

*Jun 2025 – Aug 2025*

- Analyzing public data and designing data visualizations supporting policy primers on the value of Canadian groundwater

### **Co-Principal Investigator, Lincoln Institute of Land Policy**

*Sep 2023 – Jun 2024*

- Led research on land and water use trends in the Colorado River Basin

### **Principal Investigator, Global Resilience Partnership**

*Mar 2023 – Aug 2023*

- Directed project evaluating strategies for smallholders facing agrifood transformations, emphasizing inclusive wellbeing and integration through transnational stewardship

### **Research Assistant, Univ. of Waterloo & The Nature Conservancy**

*Jan 2022 – Jan 2023*

- Coordinated a systematic review of water markets literature to understand their potential to improve welfare
- Led a report and scoping review for The Nature Conservancy on Nature-based Solutions for groundwater management in transitioning agricultural landscapes

### **Postgraduate Researcher, Univ. of Oxford & World Bank**

*Nov 2020 – Aug 2021*

- Led research for the World Bank on rural-urban water re-allocation in the MENA region with Dr. Dustin Garrick (PI)
  - Secured competitive contract by leveraging past database work
- Collaborated with World Bank and Oxford teams for meetings and project deliverables
- Compiled and analyzed data on water allocation institutions in eight countries
- Lead author on background paper for a World Bank flagship report

### **Research Assistant, Univ. of Oxford**

*May 2018 – Mar 2020*

- Co-founded the Global Reallocation Database (GRaD), publishing journal article and World Bank policy report
  - Designed systematic review on rural-to-urban water transfers, using machine learning and manual inspection techniques according to PRISMA standards
  - Coordinated data collection, analysis, and expert validation of country-level data across a network of long-term research collaborators working in Brazil, China, Mexico, India and South Africa
- Advanced GRaD framework to include water budgeting and remote sensing approaches to support Global Challenges Research Fund Water Governance Hub
- Proofed manuscripts for special issue in the *Review of Environmental Economics and Policy*

## TEACHING EXPERIENCE

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### **Instructor, Applied Data Science, Univ. of Waterloo**

*Apr 2024 - Aug 2024*

Developed a **gateway course** to apply rigorous data science methods for radio-tracking of informal water vendors in peri-urban Kenyan communities. Training environments included PyGIS, Git, and RMarkdown.

### **Co-Instructor, Integrated Water Management, Univ. of Waterloo**

*Jan 2024 – Apr 2024*

Redesigned course using inclusive pedagogical approaches, incorporating hands-on systems thinking workshops. Facilitated interactive sessions and coordinated 13 guest lecturers from 7 different faculties to bring diverse perspectives.

### **Teaching Assistant, Integrated Water Management, Univ. of Waterloo**

*Jan 2023 – Apr 2023*

Contributed to syllabus and course material for a graduate-level course on interdisciplinary water topics. Delivered lectures and offered peer-to-peer mentorship on policy for systems change.

**Teaching Assistant, Applied Statistics, Univ of Waterloo**

Sep 2021-Dec 2021

Developed rubrics and assessed students in a large-format online Applied Statistics (ENVS 278) course.

**Educator, The Rediscovery Centre**

Sep 2017-May 2018

Developed and delivered science and sustainability courses for underprivileged youth and adults with learning disabilities at Europe's first fully reclaimed eco-facility.

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PEER-REVIEWED PUBLICATIONS<sup>4</sup>

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**Jorgensen, I.**, Garrick, D., Wight, C. (2025). A Narrative Review of Social Infrastructure for Agricultural Groundwater Nature-based Solutions. Global Sustainability. S2059479825100203. *In press*.

Cullen et al. (including **Jorgensen, I.**) (2025). SDG6 in the era of the Paris Agreement: changes and tradeoffs in tailoring water challenges to global climate goals. Ecology and Society. *In press*.

Garrick, D., Balasubramanya, S., Beresford, M., Wutich, A., Gilson, G., **Jorgensen, I.** et al. (2023). A systems perspective on water markets: barriers, bright spots, and building blocks for the next generation. Environmental Research Letters, 18. 031001. <https://doi.org/10.1088/1748-9326/acb227>

Garrick, D., Alvarado-Revilla, F., de Loë R., **Jorgensen, I.** (2022). Markets and misfits in adaptive water governance: how agricultural markets shape water conflict and cooperation. Ecology and Society, 27(4). Available at: <https://doi.org/10.5751/ES-13337-270402>

Garrick, D., De Stefano, L., Yu, W., **Jorgensen, I.**, O'Donnell, E., Turley, L., Aguilar-Barajas, I., Dai, X., Leão, R.S., Punjabi, B., Schreiner, B., Svensson, J., Wight, C. (2019). Rural water for thirsty cities: a systematic review of water reallocation from rural to urban regions. Environmental Research Letters, 14(4). 043003. Available at: <https://doi.org/10.1088/1748-9326/ab0db7>

**Jorgensen, I.** (ed.) (2018). Natural Sciences. Trinity Student Scientific Review, 4. Pp. 95-132. Available at: <https://trinityssr.com/2018-edition-2/>

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POLICY REPORTS

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Garrick, D., **Jorgensen, I.**, Kernkamp, R. (2024). Tracking Agricultural Transitions in the Colorado River Basin: Towards an Observatory Approach. Working Paper, Lincoln Institute of Land Policy.

**Jorgensen, I.**, Norström, A., Garrick, D., Matthews, N. (2023). Inclusive wellbeing and resilience in transforming agrifood systems: from smallholders to transnational stewards. Report prepared for the Global Resilience Partnership.

**Jorgensen, I.**, Garrick, D., Iseman, T. (2022). Nature-based Solutions for Sustainable Groundwater Management. Report prepared for The Nature Conservancy.

**Jorgensen, I.**, Garrick, D., Hussein, H., Erfurth, S. (2021). Pathways of Water Reallocation. Background paper for The Economics of Water Scarcity in the Middle East and North Africa: Institutional Solutions. World Bank, Washington, DC

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<sup>4</sup> Including in-press and submitted. Theses are listed in Education section

Garrick, D., De Stefano, L., Turley, L., **Jorgensen, I.**, Aguilar-Barajas, I., Schreiner, B.G., Leão, R.S., O'Donnell, E., Horne, A. (2019). Dividing the Water, Sharing the Benefits: Lessons from Rural-to-Urban Water Reallocation. Global Discussion Paper. Washington, D.C.: World Bank Group.

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## CONFERENCE POSTERS & PRESENTATIONS

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A bird's eye view on terminal lake decline in the western United States: Bayesian modelling of 42 species reveals new evidence for regional conservation strategies. **American Ornithological Society**, St. Louis, Missouri, 16 August 2025. [Refereed]

Problem brokers and policy entrepreneurs: NGOs and CBOs in the Salton Sea, California. **International Conference on Public Policy**, Chiang Mai (virtual), 3 July 2025. [Refereed]

The role of land ownership inequities in the decline of desert lakes of the American West. **AGU (H43R: Water and Society: Advancing Water Equity in an Uncertain Future)**, Washington DC, 12 December 2024. [Refereed]

A bird's eye view on terminal lake decline: migratory species as a sentinel of change for terminal lakes in water-limited landscapes of the Pacific Flyway? **AGU (H33B: Advances in Ecohydrology of Water-Limited Environments)**, Washington DC, 11 December 2024. [Refereed]

Who owns the desert basins of the American West? **Salton Sea Summit**, Palm Desert, California, 18-19 October 2024.

A Bird's Eye View on Terminal Lake Collapse. **American Ornithological Society**, Estes Park, Colorado, 5 October 2024. [Refereed]

Give an inch, take a lake: evaluating the political ecology of destruction and restoration of the Salton Sea, California. **CIEEM Conference - Nature Based Solutions**, online, 4 March 2021. [Refereed]

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## INVITED TALKS

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The collapse of desert lakes: why it matters for the Oakville chapter. **PEO International**, Burlington, ON, 26 January 2024.

Keynote address: The importance of interdisciplinarity and alumni. **Collaborative Water Program 10<sup>th</sup> Anniversary**, University of Waterloo Black and Gold Room, 3 November 2023.

Nature-based Solutions for Sustainable Groundwater Management. **Stockholm World Water Week**, Norra Latin, Stockholm, 31 August 2022.

More than just a lake. **TD Walter Bean Lecture – Water Future: A New Generation of Sustainability Leaders**, University of Waterloo Federation Hall, 9 June 2022.

Identifying a culprit for rural-urban water conflict: distributional inequities or genuine scarcity? Geosciences Department, **University of Edinburgh**, online, 14 November 2020.

Kenyan Roses in Tesco: why businesses need to step up instead of step out. **University of Oxford Student Union and Skoll Centre for Social Entrepreneurship, Saïd Business School**, 11 November 2019.

How British imperialism made climate refugees in Nauru Island. The Philosophical Society, **Trinity College Dublin**, Graduates Memorial Building, 1 October 2018.

## PROFESSIONAL SERVICE

Manager, <b>Water Governance Research Cluster, Univ. of Waterloo</b>	<i>2022-Present</i>
Member, <b>PECS Working Group</b> on Institutional Design	<i>2022-Present</i>
Board member, <b>Water Institute Task Force</b>	<i>2024-Present</i>
Peer Reviewer, <b>Environmental Research Letters</b>	<i>2024-Present</i>
Peer Reviewer, <b>Environmental Research Communications</b>	<i>2023-Present</i>

## PROFESSIONAL MEMBERSHIPS

American Ornithological Society	<i>2024-Present</i>
American Political Science Association	<i>2024-Present</i>
International Political Science Association	<i>2024-Present</i>
National Audubon Society	<i>2023-Present</i>
Water Environment Federation	<i>2023-Present</i>
Community of Women in Water	<i>2022-Present</i>
Oxford Water Network	<i>2019-Present</i>
International Water Resources Association	<i>2019-Present</i>
Environmental Sciences Association Ireland	<i>2017-Present</i>

## LEADERSHIP AND COMMUNITY SERVICE

**Executive Board Member, Water Institute Strategic Planning Committee** *Aug 2023 - Present*  
Steering the Water Institute's interdisciplinary research and educational objectives, including setting the research and curriculum *agenda for 2025-2030 to foster equitable education.*

**Graduate Mentor, School of Environment, Resources and Sustainability** *Aug 2023 – Aug 2025*  
Mentored graduate students in their thesis studies, mainly research design and navigating student-advisor relationships.

**Chair, Society of Water Institute Graduate Students (SWIGS)** *Aug 2023 – Aug 2024*  
Directed a student government representing the largest cohort of graduate students across campus. Founded alumni network.

**Vice-Chair: World Water Day Organizer, Water Institute** *Aug 2022 – Aug 2023*  
Organized World Water Day 2023, coordinated attendance of *Giulio Boccaletti*, and structured a 2-year partnership with Kitchener's THEMUSEUM and Toronto's Aga Khan Museum

**Environment Representative, Graduate Endowment Fund Exec. Board** *Aug 2021 – Aug 2023*  
Evaluated funding proposals for research grants, conferences, and student initiatives, optimizing fund allocations to maximize academic and professional impact for students.

**Expedition Guide, Water Cycles Expeditions** *Feb 2023*  
Led a 300 km educational cycling trip from Joshua Tree through the Salton Basin and Palo Verde Irrigation District, featured in an *LA Times Article*.

**Events Director, Environment Graduate Student Association** *Jan 2022 – Dec 2022*  
Planned and executed major events, including the Annual Charity Ball, Orientation Week, and academic sessions to build community and professional growth.

**Covid-19 Class Representative, University of Oxford** *Mar 2020 – Sep 2020*  
Surveyed 100+ graduate students to synthesize a representative letter supporting Faculty efforts to modify examinations in light of Covid-19 emergency lockdown.

**Co-Founder, Wolfson Climate Research Group, Oxford**

*Oct 2019 – Aug 2020*

Co-founded a research cluster addressing climate crisis topics; secured a 4000 GBP grant to expand research activities and established collaboration with the Artificial Intelligence Research Cluster.

**Convenor, School of Natural Sciences, Trinity College Student Union**

*Apr 2018 – Apr 2019*

Represented student welfare and academic concerns to faculty, facilitated responses to systemic issues, and engaged in broader university policy discussions at Student Union meetings.

**Chair, Trinity Environmental Society, Trinity College Dublin**

*Mar 2018 – Mar 2019*

Directed the largest environmental society in Ireland, organized weekly events, managed a 4800 EUR charity contribution, and was awarded the Society's Choice Award and Top 4 Leader in Sustainability by the Union of Students in Ireland.

**Provost's Student Sustainability Advisor, Trinity College Dublin**

*Mar 2018 – Mar 2019*

Proposed sustainability projects on campus, established 20,000 EUR Student Sustainability Fund to support environmental initiatives, including highly successful cup deposit scheme adopted by government buildings and 30% of all cafés in Ireland.

**Conference Chair, Women Who Lead, Trinity College Dublin**

*May 2018*

Assembled panel of leading women scientists to discuss systemic gender-based barriers to research

**Climate Ambassador, An Taisce (Irish National Trust)**

*Sep 2017-May 2018*

Communicated climate change science and solutions to a national audience, reaching an estimated 1.6 million people. Selected as Irish Representative for Ministerial Delegation in Glasgow, Scotland.