THERESE CLARA FRAUENDORF

YALE UNIVERSITY, DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY
165 PROSPECT ST., NEW HAVEN, CT, 06511
therese.frauendorf@yale.edu
http://therese-frauendorf.weebly.com

EDUCATION

2019 Ph.D. in Biology, University of Victoria, British Columbia, CA

2012 M.Sc. in Zoology, Southern Illinois University, Carbondale, Illinois, USA

2007 B.Sc. in Biology, University of Notre Dame, Indiana, USA

RESEARCH EXPERIENCE

2019-present Postdoctoral Associate, Department of Ecology and Evolutionary Biology, Yale University
Examining how the magnitude of wildebeest carcass and hippo dung input influences production and food web dynamics in a large Kenyan river
Mentors: Drs. David Post and Amanda Subalusky

2013-2019 Doctoral Student, Department of Biology, University of Victoria
Measured the impact of climate-driven changes in precipitation and introduced guppies on tropical island stream community structure and ecosystem function
Mentor: Dr. Rana El-Sabaawi

2011-2013 Research Associate, Institute of Pacific Island Forestry, USDA Forest Service
Managed data and conducted field and laboratory work for two projects that examined a) effects of invasive pigs and strawberry guava on soil erosion and b) implications of precipitation changes on Hawaiian stream flow
Supervisor: Dr. Richard A. MacKenzie

2008-2011 Masters Student, Department of Zoology, Southern Illinois University
Quantified the energy flow through a Neotropical stream food web before an amphibian decline to predict the implications of the decline
Mentor: Dr. Matt Whiles

2005-2008 Laboratory and Field Technician, Department of Biology, University of Notre Dame
Managed and assisted several field and laboratory projects centered around determining the occurrence, decomposition, and effects of genetically modified corn and its insecticidal protein (Cry1Ab) in agricultural streams
Supervisor: Dr. Jennifer Tank

AWARDS, FELLOWSHIPS, AND GRANTS RECEIVED *Funding to date: $107,300*

2018	Randy Baker Memorial Fellowship ($2,750)
2017	King-Platt Memorial Award ($3,000)
2017	Best Ph.D. talk, Biology Graduate Symposium, University of Victoria
2016	Dr. Arne H. Lane Graduate Fellowship ($12,500)
2016	Dr. Esme Foord Graduate Scholarship ($2,250)
2014/16/18	University of Victoria Graduate Student Travel Grant ($1,800)
2013/14/16	King-Platt Fellowship ($39,000)
2013-2016	University of Victoria Graduate Fellowship ($46,000)
2012	Best poster presentation in Basic Research, Society of Freshwater Science

PUBLICATIONS

A. PEER-REVIEWED JOURNAL ARTICLES

Frauendorf, T.C., R.A. MacKenzie, R.W. Tingley III, D.M. Infante, and R.W. El-Sabaawi (2020) Using a space-for-time substitution approach to predict the effects of climate change on nutrient cycling in tropical island stream ecosystems. Limnology and Oceanography 65: 3114-3127.

Marques, P.S., L.R. Manna, **T.C. Frauendorf**, E. Zandonà, R. Mazzoni, and R.W. El-Sabaawi (2020) Urbanization can increase the invasive potential of alien species. Journal of Animal Ecology 89: 2345-2355.

Frauendorf, T.C., R.A. MacKenzie, R.W. Tingley III, A.G. Frazier, M.H. Riney, and R.W. El-Sabaawi (2019) Evaluating ecosystem effects of predicted changes in flow on tropical island stream ecosystems using high spatial and temporal resolution sampling regimes. Global Change Biology 25: 1344-1357.

Warbanski, M.L., P. Marques, **T.C. Frauendorf**, D.A.T. Phillip, and R.W. El-Sabaawi (2017) Implications of guppy (*Poecilia reticulata*) life history phenotype for mosquito control. Ecology and Evolution 10: 3324–3334.

Griffiths, N.A., J.L. Tank, T.V. Royer, E.J. Rosi-Marshall, A.J. Shogren, **T.C. Frauendorf**, and M.R. Whiles (2017) Occurrence, leaching, and degradation of Cry1Ab protein from transgenic maize detritus in agricultural streams. Science of the Total Environment 592: 97–105.

El-Sabaawi, R.W., **T.C. Frauendorf**, R.A. MacKenzie, L. Manna, P.S. Marques, R. Mazzoni, D.A.T. Phillip, M.L. Warbanski, and E. Zandonà (2016) Biodiversity and ecosystem risks arising from using guppies to control mosquitoes. Biology Letters 12: 20160590.

Barnum, T.R., J. Drake, J.C. Colón-Gaud, A.T. Rugenski, **T.C. Frauendorf**, S. Connelly, S.S. Kilham, M.R. Whiles, K.R. Lips, and C.M. Pringle (2015) Evidence for the persistence of food web structure after amphibian extirpation in a Neotropical stream. Ecology 96: 2106-2116.

Frauendorf, T.C., J.C. Colón-Gaud, M.R. Whiles, T.R. Barnum, K.R. Lips, C.M. Pringle, and S.S. Kilham (2013) Energy flow and the trophic basis of macroinvertebrate and amphibian production in a neotropical stream food web. Freshwater Biology 58: 1340-1352.

Griffiths, N.A., J.L. Tank, T.V. Royer, T.J. Warrner, **T.C. Frauendorf**, E.J. Rosi-Marshall, and M.R. Whiles (2012) Temporal variation in organic carbon spiraling in Midwestern agricultural streams. Biogeochemistry 108: 149-169.

Tank, J.L., E.J. Rosi-Marshall, T.V. Royer, M.R. Whiles, N.A. Griffiths, **T.C. Frauendorf**, and D.J. Treering (2010) Occurrence of maize detritus and a transgenic insecticidal protein (Cry1Ab) within the stream network of an agricultural landscape. PNAS 107: 17645-17650.

Griffiths, N.A., J.L. Tank, T.V. Royer, E.J. Rosi-Marshall, M.R. Whiles, C.P. Chambers, **T.C. Frauendorf**, and M.A. Evans-White (2009) Rapid decomposition of maize detritus in agricultural headwater streams. Ecological Applications 19: 133-142.

Laws, A.N., **T.C. Frauendorf**, J.E. Gomez, and I.M. Fuentes (2009) Predators mediate the effects of a fungal pathogen on prey: an experiment with grasshoppers, wolf spiders, and fungal pathogens. Ecological Entomology 34: 702-708.

B. MANUSCRIPTS IN REVIEW

Frauendorf, T.C., A.L. Subalusky, C.L. Dutton, S.K. Hamilton, F.O. Masese, E.J. Rosi, G.A. Singer, and D.M. Post. Animal legacies lost and found in freshwater ecosystems. Environmental Research Letters.

Frauendorf, T.C., A.E.G. Lee, A. López-Sepulcre, M.C. Marshall, R.W. El-Sabaawi. A new method for scaling and partitioning the effects of individual traits, population size and density on ecosystem function through time and space. The American Naturalist.

Barnum, T.R., T.J. Wootton, R.J. Bixby, J.M. Drake, D. Murray-Stoker, J.C. Colón-Gaud, A.T. Rugenski, **T.C. Frauendorf**, S. Connelly, S.S. Kilham, M.R. Whiles, K.R. Lips, and C.M. Pringle. Mechanisms underlying lack of functional compensation by insect grazers after tadpole declines in a Neotropical stream. Limnology and Oceanography.

Marques, P.S., **T.C. Frauendorf**, M.L. Warbanski, E. Zandonà, and R.W. El-Sabaawi. Disentangling the effects of predation and density on resource use among and within populations. PLoS ONE.

Rossetti de Paula, F., A. Ruschel, J. Feitosa Felizzola, **T.C. Frauendorf**, S. Frosini de Barros Ferraz, J. Richardson. Seizing resilience gaps to foster passive recovery in the forest-water interface in Amazonian lands. Global Change Biology.

C. BOOK REVIEW

Hertz, E., D.C. Claar, M.M. Davies, **T.C. Frauendorf**, J.C.B. White, J.A. Fisher, A.F. Martin, and B. Starzomski (2014) A Review of "Community Ecology" By Gary G. Mittelbach. Sinauer, Sunderland, Massachusetts. 2012. Transactions of the American Fisheries Society 143: 830-831.

TEACHING EXPERIENCE

A. UNIVERSITY COURSES

2021 — Short Course Organizer and Lecturer, Virtual
Developed course to teach food web ecology through the lens of East African rivers and lakes, included lectures by topic specific experts, personal lectures focused on quantitative food web ecology and analyses in R
Course: Aquatic Food Web Ecology (50 graduate students from 10 countries)

2020 — Invited Guest Lecturer, Dept. of Ecology and Evolutionary Biology, Yale University
Lectured on animal migrations and their effects on the landscape
Course: Conservation Biology (non-major undergraduate students)

Invited Guest Lecturer, Dept. of Biology, University of Alabama
Lectured on the influence of terrestrial animals on freshwater ecology
Course: Freshwater Studies (3rd – 4th year undergraduate students)

2018-2019 — Senior Laboratory Instructor, Dept. of Biology, University of Victoria
Designed and organized laboratory activities, presentations, assignments and exams; mentored and coordinated laboratory instructors
Courses: Survey of Invertebrates (3rd - 4th year); Animal Behaviour (3rd - 4th year); Chordate Zoology (2nd - 4th year, taught for 2 terms)

2016-2017 — Invited Guest Lecturer, Dept. of Biology, University of Victoria
Lectured on consumer-mediated nutrient recycling
Course: Food Web Ecology (3rd and 4th year, 2 terms)

2013-2019 — Laboratory Instructor, Dept. of Biology, University of Victoria
Taught background material and led laboratory experiments; graded quizzes, exams, and writing assignments
Courses: Physiology and Cell Biology (1st year); Chordate Zoology (2nd-4th year, 4 terms); Animal Behaviour (3rd and 4th year, 2 terms); Animal Physiology (3rd and 4th year, 3 terms)

2009-2010 — Laboratory Instructor, Dept. of Zoology, Southern Illinois University
Taught background material and led laboratory experiments; designed quizzes; graded quizzes, exams, and writing assignments
Courses: Cell and Molecular Biology, Genetics, and Evolution (1st year, 2 terms); Stream Ecology (4th year and graduate students)

B. STUDENT MENTORING

2013-current — Taught field and laboratory research techniques and provided guidance on data analyses and writing for: 8 undergraduate and 4 M.Sc. students in Canada | 4 M.Sc. students in Kenya | 2 community college, 5 university undergraduate, 1 M.Sc., and 1 Ph.D. students in the US

2015/2020 — Guided Katie Harms (University of Victoria) and Anna Reside (Yale University) with the design, execution, writing, and defense of their undergraduate Honors Theses. Anna is in the process of publishing her thesis.

2013 Guided Lauren Kapono with the design and execution of her research project for the Pacific Internship Programs for Exploring Science. She presented her research at the Emerging Researchers National in STEM Meeting and at the Hawaiian Conservation Conference.

C. SCIENCE OUTREACH

2020 Held an Inception workshop in Narok, Kenya with local county government, community leaders and the Kenyan Wildlife Service to discuss research goals and findings for the ongoing project that examines the influence of hippos and wildebeest on the Mara River

2019 Invited speaker at 'Pint of Science Victoria, BC' to discuss current research on climate change; Public talk titled: What can bug pee tell us about climate change?

2010 Showcase scientist at the 'Day on the River' event to create and present an interactive science exhibit on aquatic invertebrates for the Middle Mississippi River Field Station, Cape Girardeau, IL

2008 Showcase scientist for aquatic invertebrates at 'Insect Awareness Day' for the Southern Illinois Audubon Society, War Bluff Valley, IL

ACADEMIC SERVICE

A. DEPARTMENTAL

2013-2016 Committee member of the Biology Graduate Symposium at University of Victoria (co-organizer of the 2016 symposium, chair of abstract review, program composing, and scheduling committee)

2010-2011 Organizer of the Aquatic Journal Club at Southern Illinois University

2008-2011 Committee member of the Zoology Graduate Student Association at Southern Illinois University

B. NON-DEPARTMENTAL

2021 Special session organizer at the Society of Freshwater Science meeting, Title: Animal legacies lost and found

2010-2017 Session moderator, presentation judge and volunteer at annual meetings for the Ecological Society of America | Canadian Society for Ecology and Evolution | North American Benthological Society | Society of Freshwater Science

2015 Symposium organizer and moderator at the Association for Tropical Biology and Conservation meeting, Title: Impacts of climate change on tropical freshwater and estuarine ecosystems

2014 Special session organizer and moderator at the Joint Aquatic Science Meeting, Title: Impacts of climate change on the ecological function of tropical aquatic ecosystems

2011 Abstract reviewer for the Midwest Ecology and Evolution Conference

C. REVIEWER (publons.com/a/1232661/)

Since 2016 Journals: Global Change Biology | Hydrobiologia | International Review of Hydrobiology | Journal of Freshwater Science | Oikos

Since 2020 Grants: British Ecological Society (Ecologists in Africa Grant, Small Research Grant, and Outreach Grant)

SEMINARS AND PRESENTATIONS

A. INVITED SEMINARS

2020 Implications of climate change and introduced species for tropical island streams, Department of Biology, University of Florida, Gainesville, FL, USA

2019 The effects of climate change and introduced species on tropical island streams, Department of Biology, University of Victoria, Victoria, BC, Canada

B. PRESENTATIONS AT SCIENTIFIC MEETINGS

Frauendorf, T.C., A.L. Subalusky, C.L. Dutton, L. Njoroge, J.M. Benjamin, E.J. Rosi, and D.M. Post (2021) Hippos care how many bugs are there. Society of Freshwater Science, Virtual.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2018) Efectos del cambio climático y especies exóticas sobre la dinámica de nutrientes en arroyos tropicales. AQUATROP, Quito, Ecuador.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2018) Implications of climate driven change in flow on tropical stream ecosystem structure and function. Association for the Sciences of Limnology and Oceanography, Victoria, BC.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2017) Combined effects of climate change and exotic species on tropical stream nutrient dynamics. Ecological Society of America, Portland, OR.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2017) Using a space-for-time substitution to predict implications of climate change on stream ecosystem structure and function. Canadian Society of Ecology and Evolution, Victoria, BC.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2016) Predicted climate driven changes in rainfall affect stream nutrients in Hawaii. Society of Freshwater Science, Sacramento, CA.

Frauendorf, T.C., R.A. MacKenzie, and R.W. El-Sabaawi (2015) Predicted climate driven changes in flow affect stream resources, consumers, and nutrient dynamics in Hawaii. Association of Tropical Biology and Conservation, Honolulu, HI.

Frauendorf, T.C., P.S. Marques, M.L. Warbanski, D.A.T. Phillip, and R.W. El-Sabaawi (2015) Species introduction alters nutrient recycling patterns of introduced guppy fish and resident killifish species in Trinidad. Society of Freshwater Science, Milwaukee, WI.

Frauendorf, T.C., R.A. MacKenzie, and M.H. Riney (2014) Aquatic invertebrate biomass and production across a rainfall gradient: Implications of climate change on stream communities in Hawaii. Joint Aquatic Science Meeting, Portland, OR.

Frauendorf, T.C., R.A. MacKenzie, and G.L. Bruland (2013) Effects of decreasing rainfall on food resources and aquatic consumers in Hawaiian streams. Hawaiian Conservation Conference, Honolulu, HI.

Frauendorf, T.C., R.A. MacKenzie, and G.L. Bruland (2013) Effects of decreasing rainfall on food resources and aquatic consumers in Hawaiian streams. Hawai'i Ecosystems Meeting, Hilo, HI.

Frauendorf, T.C., R.A. MacKenzie, A.M. Strauch, and G.L. Bruland (2013) Effects of climate change on food resources and aquatic consumers in Hawaiian streams. Society of Freshwater Science, Jacksonville, FL.

Frauendorf, T.C., R.A. MacKenzie, A.M. Strauch, and G.L. Bruland (2013) Effects of climate change on food resources for aquatic fauna in Hawaiian streams. Tropical Conservation Biology and Environmental Science Research Symposium, Hilo, HI.

Frauendorf, T.C., R.A. MacKenzie, P.B. Foulk, and G.L. Bruland (2013) Organic matter dynamics along the Hilo-Hamakua stream flow gradient: Effects of climate change on food resources for aquatic fauna. Big Island Water Resource Meeting, Hilo, HI.

Frauendorf, T.C., R.A. MacKenzie, P.B. Foulk, A.M. Strauch, and G.L. Bruland (2012) Invertebrate abundance and diversity across a rainfall gradient in Hawaiian streams: Potential effects of climate change on terrestrial food resources. Hawaiian Conservation Conference, Honolulu, HI, *Poster*.

Frauendorf, T.C., A.T. Rugenski, J.C. Colón-Gaud, and M.R. Whiles (2012) Ontogenetic shifts in diets of aquatic neotropical macroinvertebrates. Society for Freshwater Science, Louisville, KY, *Poster.*

Frauendorf, T.C., J.C. Colón-Gaud, T. Barnum, M.R. Whiles, K.R. Lips, C.M. Pringle, and S.S. Kilham (2011) Trophic basis of production in a Neotropical headwater stream. North American Benthological Society, Providence, RI.

Frauendorf, T.C., J.C. Colón-Gaud, T. Barnum, M.R. Whiles, K.R. Lips, C.M. Pringle, and S.S. Kilham (2010) Trophic basis of production in a Neotropical headwater stream: Implications for the ecological consequences of amphibian declines. North American Benthological Society and American Society of Limnology and Oceanography, Santa Fe, NM.

Frauendorf, T.C, J.C. Colón-Gaud and M.R. Whiles (2009) Macroinvertebrate diet shifts along a Neotropical stream continuum. North American Benthological Society, Grand Rapids, MI, *Poster.*

Frauendorf T.C., N.A. Griffiths, J.L. Tank, M.A. Evans-White, E.J. Rosi-Marshall, T.V. Royer, and M.R. Whiles (2007) Bt leaching from corn detritus and the effects on stream sediment respiration. North American Benthological Society, Columbus, SC, *Poster*.

PROFESSIONAL MEMBERSHIPS

Association for the Sciences of Limnology and Oceanography | British Ecological Society | Ecological Society of America | Society of Freshwater Science

LANGUAGES

Verbal: English (fluent), German (native), Spanish (basic)