# Dominique Caron

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## Profile

I am currently completing my PhD in Laura Pollock's lab at McGill University. My thesis focuses on trait-based modeling of trophic interactions of terrestrial vertebrates and the seasonal movements of birds. I am particularly interested in biogeography, biodiversity modeling, and food web ecology. Through my academic and professional experience, I have developed advanced skills in quantitative analyses (R, Julia, QGIS), data management, and ecological modeling.

## Education

**McGill University** January 2020 - 2024
PhD in Biology

**Université de Montréal** September 2017 - December 2018
MSc in Quantitative and Computational Biology

**Université de Montréal** September 2014 - May 2017
BSc in Biological Sciences

**Polytechnique Montréal** October 2012 - May 2014
B.Eng. in Civil Engineering (unfinished)

## Experience

**Software Developper**, Environment and Climate Change Canada 2019 - 2022
**Conservation Planning Assistant**, Éco-corridors Laurentiens 2019
**MSc Research Intern**, Poisot Lab, Université de Montréal 2018
**Research Assistant** Ouranos Inc. 2018
**MSc Research Intern**, James Lab, Université de Montréal 2017
**Field Assistant**, Bélanger Lab, TÉLUQ 2017
**Technical Assistant for the Collections of Marine Invertebrates**, Institut québécois de la biodiversité (IQBIO) 2016

## Teaching

Lab Coordinator - Methods in Biology of Organisms, McGill University. 2023
Teaching Assistant - Methods in Biology of Organisms, McGill University. 2021 & 2022
Teaching Development Fellow - Methods in Biology of Organisms, McGill University. 2020

Teaching Assistant - Biostatistics I, Université de Montréal. 2018

Tutor - Biostatistics I, Université de Montréal. 2018

Tutor - Biostatistics II, Université de Montréal. 2018

## Grants, Honors, and Awards

**Writing-Year Award**, Department of Biology, McGill University. 2024

**Graduate Research Ehancement and Travel Award**, Department of Biology, McGill University. 2023

**QCBS Excellence Award**, Quebec Cener for Biodiversity Science, QCBS. 2023

**Best Poster**, Gordon Research Conference on Predictive Ecology, GRC. 2023

**Learning and Development Award (LeaDA)**, Quebec Center for Biodiversity Science, QCBS. 2020-2022

**Best Short Presentation**, QCBS symposium 2020, QCBS. 2020

**Undergraduate Student Research Award**, Natural Sciences and Engineering Research Council of Canada, NSERC. 2017

**Intensive Courses Award**, Quebec Center for Biodiversity Science, QCBS. 2017

**Dean's Honour List**, Faculty of Arts and Science, Université de Montréal. 2015 - 2017

## Publications

**Caron, D.**, Brose, U., Lurgi, M., Blanchet, F., Gravel, D., & Pollock, L. Trait-matching models predict pairwise interactions across regions, not food web properties. Global Ecology and Biogeography, 33(4), e13807. 2024

Eckert, I., Brown, A., **Caron, D.**, Riva, F., & Pollock, L. 30×30 biodiversity gains rely on national coordination. Nature Communications, 14(1), 7113. 2023

Strydom, T., Bouskila, S., Banville, F., Barros, C., **Caron, D.**, Farrell, M., Fortin, M.J., Mercier, B., Pollock, L., Runghen, R., Dalla Riva, G., & Poisot, T. Graph embedding and transfer learning can help predict potential species interaction networks despite data limitations. Methods in Ecology and Evolution, 14(12), 2917–2930. 2023

**Caron, D.**, Maiorano, L., Thuiller, W., & Pollock, L. Addressing the Eltonian shortfall with trait-based interaction models. Ecology Letters, ele.13966. 2022

Strydom, T., Bouskila, S., Banville, F., Barros, C., **Caron, D.**, Farrell, M., Fortin, M.J., Hemming, V., Mercier, B., Pollock, L., Runghen, R., Dalla Riva, G., & Poisot, T. Food web reconstruction through phylogenetic transfer of low-rank network representation. Methods in Ecology and Evolution, 13(12), 2838–2849. 2022

Strydom, T., Catchen, M., Banville, F., **Caron, D.**, Dansereau, G., Desjardins-Proulx, P., Forero-Muñoz, N., Higino, G., Mercier, B., Gonzalez, A., Gravel, D., Pollock, L., & Poisot, T. A roadmap towards predicting species interaction networks (across space and time). Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 376(1837), 20210063. 2021

**Caron, D.**, Lessard, V., Wu, Q., & Poisot, T. (2019). [Re] Insect natural enemies as regulating factors. ReScience, 5(1), #1. 2019

## Talks

**Caron, D.**, Jousse, M., Eckert I., Pollock, L.J. Niche trackers don't play by the rules: Consequences of niche tracking on seasonal north american bird biogeography. QCBS Symposium. Montréal (Canada) 2024

**Caron, D.**, Brose, U., Lurgi, M., Blanchet F.G., Gravel, D., Pollock, L.J. Transferability of trophic interaction models across space. GRC on Predictive Ecology. Stonehill College, Massachusetts (USA). Poster 2023

**Caron, D.**, Jousse, M., Eckert I., Pollock, L.J. Trophic niche and seasonality shape the structure of avian diversity. Species on the Move conference. Bonita Springs, Florida (USA). 2023

**Caron, D.**, Maiorano, L., Thuiller, W., Pollock, L.J. Tackling knowledge gaps about food webs with trait-based models. Ecological Society America (ESA) & Canadian Society for Ecology and Evolution (CSEE) joint meeting. Montréal (Canada). 2022

**Caron, D.** What are Muad'Dibs eating? Predicting Dune's metaweb using functional traits. Ecological Society America (ESA) & Canadian Society for Ecology and Evolution (CSEE) joint meeting. Montréal (Canada). 2022

**Caron, D.**, Maiorano, L., Thuiller, W., Pollock, L.J. Predicting trophic interactions to fill the Eltonian shortfall. Canadian Society for Ecology and Evolution (CSEE) Annual Meeting. Online 2021

**Caron, D.**, Pollock, L.J. Doing a lot with "a little": (Re)Building a large food web with sparse data. Colloque du CSBQ. Online 2020

**Caron, D.**, Chavaillaz, Y., Roy, P. Évolution d'indicateurs d'exposition à la chaleur et conséquences pour la santé des travailleurs extérieurs. Séminaire Ouranos. Montréal (Canada). 2019

**Caron, D.** & James, PMA. L'échelle d'autocorrélation spatiale de données génétiques chez un insecte ravageur de l'Ouest canadien : capacité de dispersion importante et historique de colonisation complexe. Symposium de sciences biologiques de l'Université de Montréal, Montréal (Canada). 2018

**Caron, D.** & Poisot, T. Les données ouvertes sur la biodiversité au Québec : forces, faiblesses et défis. Symposium de sciences biologiques de l'Université de Montréal, Montréal (Canada). 2017