Drew Sauve

PhD Student
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Education

Queen's University, MSc. Evolutionary and Ecological Genetics 2018

Queen's University, B.Sc. (Hons) Biology 2016

Research Experience

Statistics and Bioinformatics

I have used R throughout my academic career and I am comfortable with generalized linear models, mixed models, and non-linear models. I am proficient in basic bioinformatics (filtering and preparing ddRADseq or whole genome data) and comfortable navigating and submitting jobs on a UNIX computer cluster. I have done basic programming in Python and have run non-linear and custom Bayesian models using STAN. I am happy and eager to learn and work with the best statistical software for any given analysis.

Fieldwork

I have spent three field seasons of working with numerous seabird species in Northern Alaska, Newfoundland, and in the Gulf of Alaska. I have worked with both small and large teams under difficult weather conditions to collect blood samples, make field observations, and capture and record morphometrics. I was in charge of the field team on Middleton Island for part of the 2019 field season. I have worked with teams in France to maintain long-term data sets on great and blue tits near Montpellier and in Corsica.

Labwork

I am proficient in DNA extraction, PCR, microsatellite analysis, and preparing DNA samples for next-generation sequencing.

Awards

NSERC Michael Smith Foreign Study Supplement **$6,000CAD**

NSERC Alexander Graham Bell Canada Graduate Scholarship – Doctoral **$105,000CAD**

Haldane Prize Shortlist - Best Early Career Paper in Functional Ecology 2020

TD Fellowship in Arctic Environmental Issues 2019-2020 **$30,000CAD**

Northern Studies Training Program. Canadian Polar Commission. 2019. **$2,343CAD**

Northern Studies Training Program. Canadian Polar Commission. 2018. **$2,890CAD**

Society for the Study of Evolution Travel Grant. Society for the Study of Evolution.2018. **$500USD**

Northern Studies Training Program. Canadian Polar Commission. 2017. **$2,263CAD**

Canadian Society for the Study of Ecology and Evolution Travel Grant. 2016. **$750CAD**

Undergraduate Student Research Award. NSERC. 2016. **$4,500CAD**

North American Bluebird Society Grant. North American Bluebird Society. 2015. **$1,000USD**

Teaching Assistantships

I've helped to teach five biology courses at Queen's University. Topics included introductory genetics, evolutionary genetics, conservation biology, and evolutionary biology. I designed and taught a custom tutorial on quantitative genetics for an upper-year genetics course. I've helped co-supervise three honours thesis students at Queen's University on effective population size, phenotypic plasticity, and measuring selection in captivity.

Publications

Journal Articles

In prep or review

Sauve, D., Friesen, V.L., A, Hatch, S.A., Elliott, K.H., Charmantier A. Shifting environmental predictors of phenotypes under climate change: a case study of growth in high latitude seabirds. *in review for Oikos*

Sauve, D., Hudecki, J., Steiner, J., Wheeler, H., Chabot, A.A. Improving species conservation plans under IUCN's One Plan Approach using quantitative genetic methods. *In review for Peer Community In*. Available as a preprint: 10.32942/osf.io/n3zxp

Sauve, D., Friesen, V.L., A, Hatch, S.A.,Teplitsky, C., Charmantier A. Variation in natural selection across time, space, and ontogeny *Proposed Abstract submitted for a Special Issue in Evolution Letters*

2022

Sauve, D., Charmantier, A, Hatch, S.A., Friesen V.L. Effects of the environment on growth vary across the breeding season in a subarctic seabird. *Oecologia* 198, 307-318.

2021

Sauve, D., Friesen, V.L., Charmantier, A. 2021. The effects of weather on avian growth and implications in the context of climate change. *Frontiers in Ecology and Evolution* 9.

Friesen, V.L., Brunt, R., Morris-Pocock, J.A., **Sauve, D.**, Baker, A.J., Birt, T.P., Davidson, W.S., Elliott, K.H., Montevecchi, W.A. 2021. A test of mechanisms of population differentiation in gannets (genus Morus) using comparative phylogeography and morphometrics. *Marine Ornithology* 49, 275-291.

2020

Sauve, D., Dale, C.A., Tigano, A., Ratcliffe, L.M., and Friesen V.L. 2021. Do candidate genes for migration and behaviour explain migratory variation in bluebirds (*Sialia spp.*)? *The Wilson Journal of Ornithology* 132, 820-829.

2019

Sauve, D., Divoky, G., and Friesen V.L. Phenotypic plasticity or evolutionary change? An examination of the phenological response of an Arctic seabird to climate change. 2019. (*Cepphus grylle mandtii*) *Functional Ecology* 33, 2180-2190.

Sauve, D., Patirana, A., Chardine, J., and Friesen V.L. 2019. Mitochondrial DNA reveals genetic structure within Atlantic but not Pacific populations of a holarctic seabird *Marine Ornithology* 47, 199-208.

Presentations

Sauve, D., Friesen, V.L., Teplitsky, C., Hatch, S.A., Charmantier, A. 2021. Impacts of fluctuating environmental conditions and experimental feeding on selection of growth in black-legged kittiwakes. *Virtual Evolution*. Presentation.

Sauve, D., Friesen V.L., Divoky G.J., Hatch, S.A., Elliott, K.H., Gaston, A.J., Charamantier, A. 2020. Ecological and evolutionary impacts of climate change on the phenology and growth of seabirds. Presentation. *Seminars in Ecology and Evolution*. Presentation. Centre d'Ecologie Fonctionelle & Evolutive,Montpellier, France.

Sauve, D., Chabot, A. The value of quantitative genetics for managing captive breeding populations. 2019. *Loggerhead Shrike Recovery Meeting* Presentation. African Lion Safari, Cambridge, Ontario.

Sauve, D., Charmantier, A., Divoky, G., Hatch, S., Elliott, K., Gaston, T., Friesen V. 2019. *Evolution*. Variation in chick growth in response to climate change in three high latitude seabird species. Poster. Providence, Rhode Island.

Sauve, D., Divoky, G., and Friesen V. 2018. Queen's University. *Biology Graduate Student Day*. Phenological change in Mandt's Black Guillemot is driven by phenotypic plasticity. Presentation. Kingston, Ontario.

Sauve, D., Divoky, G., and Friesen V. 2018. Queen's University. *American Genetics Associations: Quantitative Genetics in the Wild*. Phenological change in Mandt's Black Guillemot is driven by phenotypic plasticity. Presentation. Toronto, Ontario.

Sauve, D., Divoky, G., and Friesen V. 2017. Disentangling evolutionary and plastic change in the laying date of an Arctic seabird. *Wild Animal Modelling Biennial Meeting*. Presentation. Saint-Michel-Des-Saints, Quebec.

Sauve, D., Divoky, G., and Friesen V.2017. Phenotypic plasticity drives phenological change in Mandt's Black Guillemot. *ArcticNet*. Poster. Quebec City, Quebec.

Media

Sixty Second Seabird Science Youtube Series https://www.youtube.com/watch?v=sNLRIqPfNFE

Spotlight Article in Functional Ecology https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2435.13430?af=R

National Geographic Coverage of 2019 Functional Ecology Paper https://www.nationalgeographic.com/environment/2019/08/many-animals-can-adapt-climate-change-just-not-fast-enough-/

Blog post on Proteus (Storytelling for a blue planet). https://proteusscicomm.org/2018/08/15/long-term-data-collection-serves-many/

Service

Graduate Student Advisor for Creation of an Online Resource Library for Inclusive Science Communication 2021-2022

SciNapse Undergraduate Case Study Judge 2021-2022

Certifications

*Pleasure Craft Operator Card:*18032589508 2016

Canadian Firearms Safety Course 2016