Matthew Strimas-Mackey

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Profile

- Experienced in GIS and spatial analysis, particularly using R and other open source tools
- Exceptional analytical and technical skills, including modeling, data analysis, and software development
- Strong theoretical background in ecology and extensive wildlife field experience with a variety of taxa
- **Goal:** to work as an analyst for a conservation NGO, performing data analysis and developing software tools

Education

MSc Zoology, University of British Columbia, *Supervisor: Jedediah Brodie,* **GPA:** 4.33/4.33 — 2014 – 2016
- Thesis: *Accounting for metapopulation persistence in systematic conservation planning*

BSc Ecology, University of Guelph, **GPA:** 4.0/4.0 — 2010 – 2012

MSc Physics, University of Toronto, **GPA:** 3.8/4.0 — 2005 – 2006

BSc Physics and Mathematics, University of Toronto, **GPA:** 3.5/4.0 — 2001 – 2005

Skills

- **Spatial**
  - Analysis, management, and visualization of spatial data with a focus on open source tools including R, PostGIS, GDAL/OGR, and QGIS; some experience with ArcGIS 10 and Spatial Analyst Extension
  - **Remote Sensing:** orthorectification and classification with ENVI; familiar with Landsat data
  - **Drones:** mission planning, flight regulations, map making using Agisoft photogrammetry software
  - **Other:** Marxan systematic conservation planning software; species distribution modeling
- **Data**
  - Expert R user, including data processing, visualization, and analysis
  - Extensive experience with relational databases and SQL
  - Familiar with modern statistical techniques, including hierarchical occupancy/abundance modelling
- **Programming**
  - **R**: package development, R Shiny web applications, Hadleyverse
  - Web design: HTML, CSS, and Jekyll static site generator
  - Version control: Git and GitHub
  - Cloud computing with Amazon Web Services
  - Experience with Python, SAS, VBA, and FORTRAN
  - Strong supporter of open source software and the reproducible research ethos
- **Field Techniques:** radio telemetry; camera trapping; experienced in the capture and safe handling of passerines, small mammals, and venomous snakes

Research and Work Experience

Database Consultant, Kluane Red Squirrel Project — 2013–present
Supervisors: Dr. Andrew McAdam, Guelph University
- Act as an ongoing database administrator, software developer, and consultant for a database containing 30 years of field observations from the Kluane Red Squirrel Project
- Developed an R package to interface between the project database and R; migrated old DB2 database to new MySQL database; implemented best practices in data management and use

Intern, Tropical Dry Forest Conservation Project, Bioversity International, Cali, Colombia — Summer 2014
Supervisor: Evert Thomas, Associate Scientist, Bioversity International
- Developed a software package to model the distributions of all tropical dry forest tree species in Colombia under different future climate scenarios and at the last glacial maximum
- Results informed ecological restoration efforts by identifying hotspots of genetic diversity and candidate areas for restoration that will remain suitable under climate change

Field Assistant, Bamboo Pit Viper Translocation Effectiveness Study, Hong Kong — Summer 2013
Supervisor: Anne Devan-Song, MSc Candidate, University of Rhode Island
- Assisted in an investigation of the effects of translocating venomous snakes in Hong Kong
- Conducted visual encounter surveys for snakes; handled and processed venomous snakes; tracked snake movements with radio telemetry; assisted with snake surgeries and lab work

Field Technician, Kluane Red Squirrel Project — Summer 2012 & Winter 2013
Supervisors: Dr. Stan Boutin, University of Alberta & *Dr. Andrew McAdam,* Guelph University
- Responsible for collecting data on the reproductive status and breeding success of over 200 squirrels as part of a long-term, large-scale evolutionary ecology study of red squirrels
- Managed a 30 ha study grid; monitored reproductive status via live trapping and behavioural observations; radio collared squirrels; located nests using radio telemetry; followed strict data

collection protocols; designed data checking queries and helped manage database

Data Mining Analyst, Customer Analytics, Bank of Montreal, Toronto, ON 2008–2010

- Provided analysis and insights to inform decision making; used SQL and SAS to analyze large relational databases; developed models; designed software to aid front line managers

Scholarships & Awards

- **UBC Zoology Graduate Fellowship** 2015
- **NSERC Canada Graduate Scholarship–Master's** 2014
- **Biodiversity Research: Integrative Training and Education (BRITE) Internship** 2014 & 2016
- **BMO Annual Best of the Best**, Two-time Winner 2008 & 2009
- **BMO Quarterly Top Performer**, Six-time Winner 2008-2010
- **J.R.G. Smyth Scholarship in Physics** 2005
- **Sir John Cunningham McLennan Prize in Physics** 2005
- **James Loudon Gold Medal in Physics** 2005
- **NSERC Undergraduate Summer Research Assistantship**, Two-time Winner 2004 & 2005

Presentations & Workshops

- **Niche modeling as a tool for forest restoration,** Biodiversity Lunchtime Internal Seminar Series, UBC
- **Best practices in field data management**, Workshop for UBC Lab Group
- **Analyzing spatial data in R**, Workshop for UBC Lab Group
- **Cloud computing with Amazon Web Services and R,** UBC R Study Group

Publications

Nastos, F., J. Rioux, **M. Strimas-Mackey**, B.S. Mendoza, J.E. Sipe. (2007). *Full band structure LDA and k•p calculations of optical spin-injection*. Physical Review B, 76(20): 205113.

Teaching Assistantships

Duties: teaching, supervising labs, demonstrating techniques, leading discussions, office hours, marking

- **Biostatistics**, University of British Columbia 2015
- **Laboratory Investigations in Life Sciences,** University of British Columbia 2014 & 2016
- **GIS & Spatial Analysis**, University of Guelph 2012
- **Physics Lab for Biological Sciences**, University of Toronto 2006
- **Advanced Physics Laboratory**, University of Toronto 2005

References

Available upon request