Graduate Opportunities

Quantitative Migratory Bird Ecology

Large-scale modelling • Big data • Full annual cycle

Elly Knight | Adjunct Professor, University of Alberta | Co-Director, Boreal Avian Modelling Centre

I am recruiting graduate students (MSc, PhD) to join the **Boreal Avian Modelling Centre (BAM)** and the University of Alberta to work on quantitative solutions to migratory bird conservation. BAM uses **large ecological datasets, spatial models, and passive acoustic monitoring** to estimate migratory bird populations and understand **where, when, and why migratory bird populations change.**

Research themes

- High-resolution modelling of breeding bird abundance and trend
- Linking population change to environmental conditions across the annual cycle via migratory connectivity
- Decision-support science for migratory birds
- Integration of acoustic monitoring data in quantitative frameworks

Qualifications

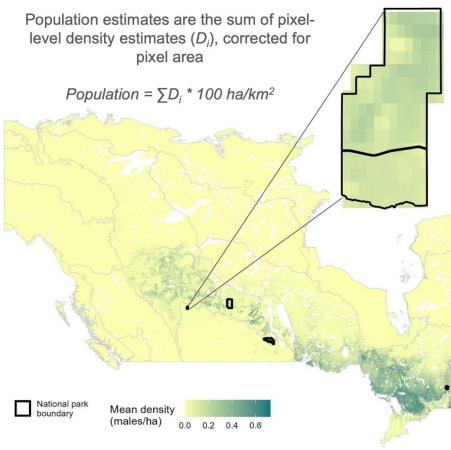
- Interest in statistical integration of diverse existing datasets to solve hard problems
- Background in ecology, statistics, data science, mathematics, computer science, or a related field
- Experience with reproducible workflows and spatial analysis
- Curiosity about migratory birds and applied ecological science
- Comfort with a project centred on coding, modelling, and synthesis rather than field work

Why BAM?

- Develop skills in acoustics, ornithology, quantitative ecology, high-performance computing, and more
- Work with BAM's large harmonized bird database and large-scale density models
- Join the BAM team and collaborate across academia, government, & NGOs
- Study at the University of Alberta, a leading Canadian research university

From pixels to populations

BAM's bird density models translate large-scale survey data into spatially explicit estimates of abundance.



National Park	Population estimate (male birds)	Mean density (males/ha)
Kejimkujik	14500	0.614
Fundy	5200	0.445
Forillon	4100	0.308
La Mauricie	10800	0.307
Kouchibouguac	3000	0.249
Prince Albert	52900	0.184
Riding Mountain	29500	0.137
Elk Island	**2000**	**0.134**
Cape Breton Highlands	7200	0.124



Interested?

Learn more about BAM at borealbirds.ca.

Email ecknight@ualberta.ca with a CV, transcripts, and a brief statement of research interests. Applications will be reviewed as received.