Hi folks,

I’ve been collaborating with some of you over the last several years to develop a Bayesian analysis framework for provincial breeding bird atlases. To date, we’ve applied this framework to the Saskatchewan Breeding Bird Atlas, and it’s now time to focus attention on the 3rd Ontario Breeding Bird Atlas.

I’ve attached some “sneak peek” results from the analysis that illustrate changes in species abundance between Ontario atlas 2 and 3. The colour scale should be interpreted as change in the expected number of birds you'd detect during a 5-minute point count. For example, for CAJA, in the bluest areas you'd expect to detect 1.5 more CAJA in OBBA-3 than in OBBA-2. These maps show evidence that CAJA and BOCH have shifted northward, RUBL has declined (but note the overall estimate of change is quite uncertain), and NAWA has patchy changes throughout the AOU. These are still \*very\* preliminary, and all aspects of the analysis need to be improved (data QA/QC, covariate layers, model structure, goodness-of-fit assessment, and output visualizations).

Next steps are to:

1. Continue improving the model structure (through discussion/testing in this group)
2. Identify better covariate layers to use (I need LOTS of help with this)
3. Determine the best way(s) to evaluate model quality – note that this is also a key goal of the Northern Ontario Bird Modeling Working Group led by Russ Weeber and Josie Hughes.

At this stage, I’d like to arrange a meeting in November to review current progress and plan next steps. I’m proposing Tuesday November 12 at 11 am eastern time.

Please

This analysis will culminate in several key outputs:

* Estimating the **distribution** and **relative abundance** of as many bird species as possible
* Maps of **probability of observing** the species during a standard survey
* Estimating **change** in relative abundance between atlases
* Measures of **uncertainty** at multiple spatial scales (e.g., 1-km pixels, ecodistricts, BCRs, etc)

The analysis will also include several key features:

* Integrating point counts, checklists, and acoustic recordings (collected either from handheld devices or autonomous recording units)
* Accounting for spatial autocorrelation and changes in spatial/temporal survey intensity over time
* Informative priors for species range limits, to avoid covariate-based extrapolations into areas that the species is unlikely to occupy
* Integrating data from multiple atlas cycles simultaneously
* Time-of-day and day-of-year detectability adjustments