RUBL in Alberta

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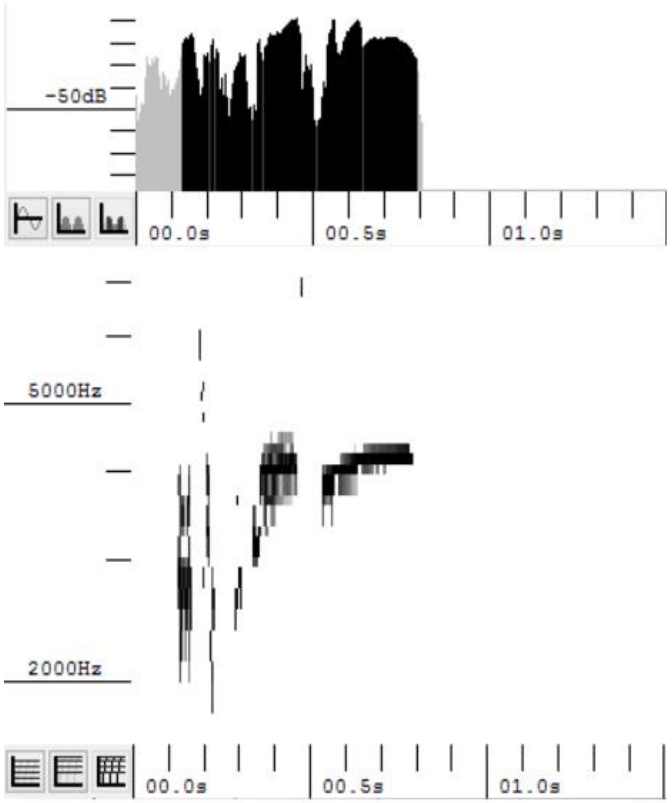
What do we know?

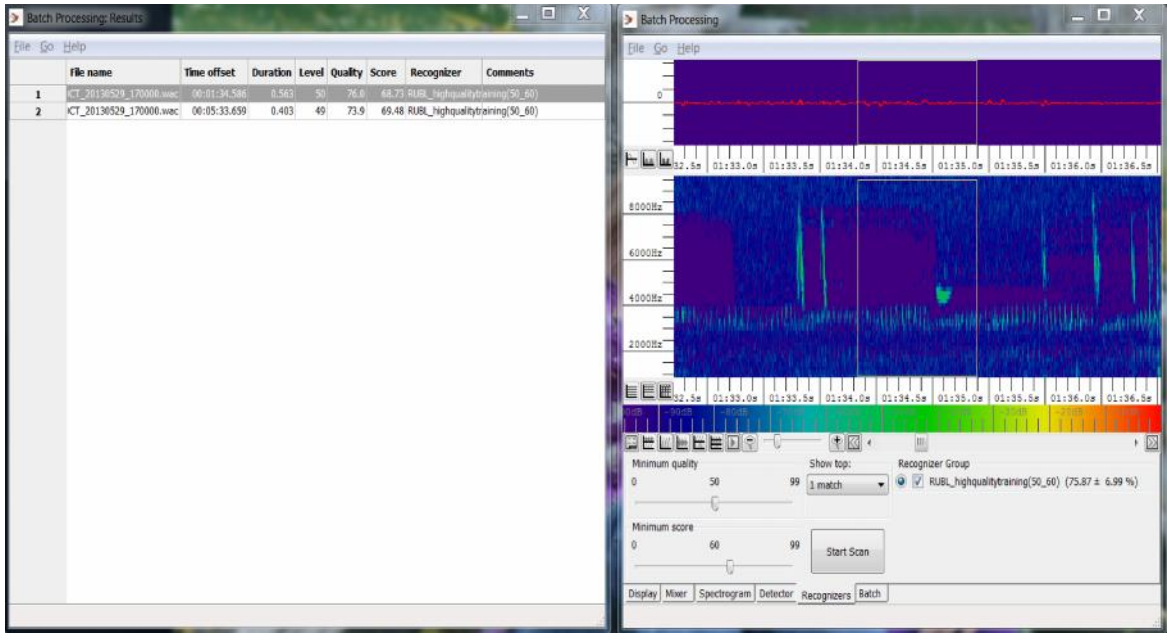
- Not that much!
- In the Boreal Avian Modelling database we have >50,000 human point counts in boreal Alberta. RUBL have only been detected at only 34 locations over 20 years. Relatively few locations in wetland per se.
- ABMI (Alberta Biodiversity Monitoring Institute) has been recording birds using Riverforks technology since mid-2000's and just switched to a multiple month recording schedule using ARUs (March to July) on a systematic grid
- In 2012, my lab started using ARUs to sample specific types of wetlands far more comprehensively. Focus was Yellow Rails and Canadian Toads, but started learning a lot more about species like the Rusty Blackbird.
- Use of ARUs has increased our detections to >200 new locations on top of the original 34.

Human Listening

- We listen to 8 unique times for 3 minutes at each ARU (minimum)
- Keep track of number of individuals heard and if they call on a minute by minute basis
- RUBL are moderately detectable. At a subset of 105 locations where we know them to be present, 45% of the time at 5 AM on different days you will detect them on a different day.
- On a per minute basis, there is a 57% chance that if they sing once you will find them singing at another minute with the overall 3-minute interval

Recognizers

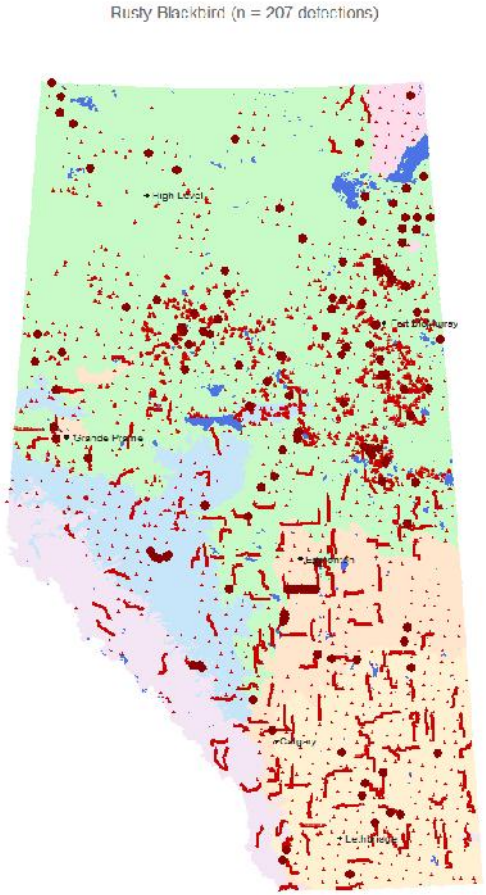


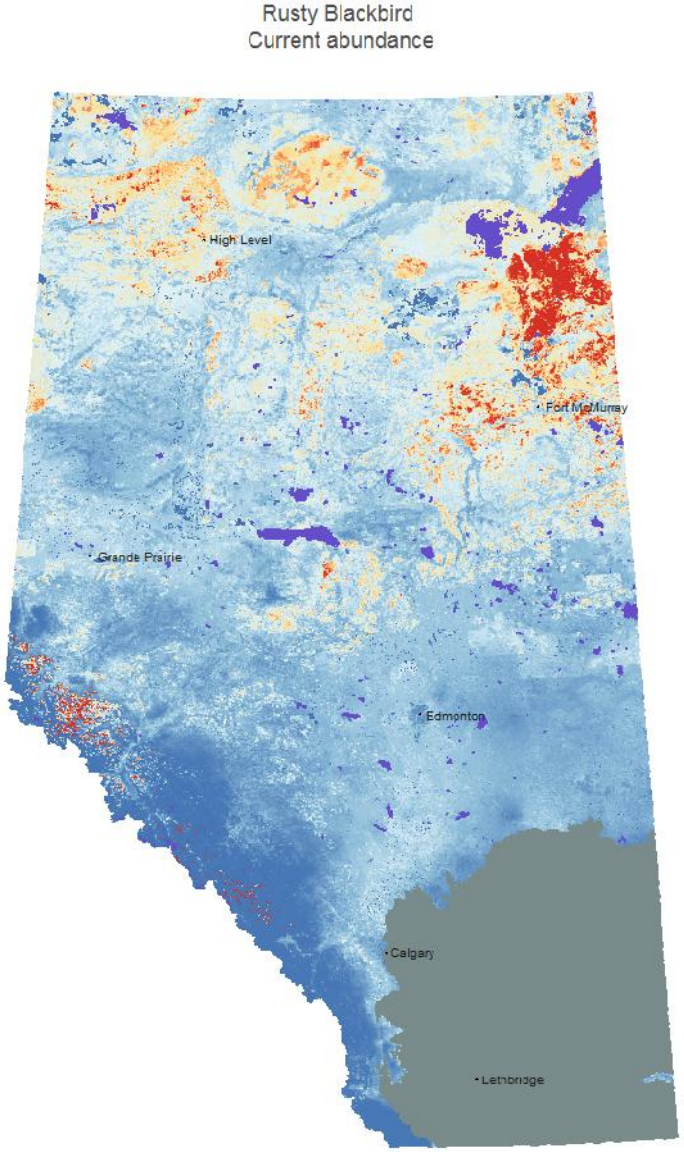


	BADO	BRCR	CATO	CONI	OSFL	RUBL	YERA
# Minutes Processed	1,065,120	46,800	1,229,760	61,400	60,480	60,480	1,229,760
# Stations Processed	317	65	366	65	17	17	366
Naïve Occurrence By Human	0.04	0.17	0.06	0.22	0.09	0.08	0.11
Naïve Occurrence By Recognizer	0.31	0.37	0.15	0.66	0.27	0.48	0.18
Occupancy Rate By Human	1*	0.18	0.09	0.31	0.12	0.11	0.11
Detection Rate By Human	0.01	0.54	0.18	0.27	0.22	0.20	0.58
False Positive Rate	N/A	0.61	N/A	N/A	0.73	0.52	N/A
False Negative Rate	0.73	0	0.83	N/A	0	0	0.02

- Difference in detection rate for RUBL is this is across the day & a subset of the whole dataset
- Really small test for RUBL thus far

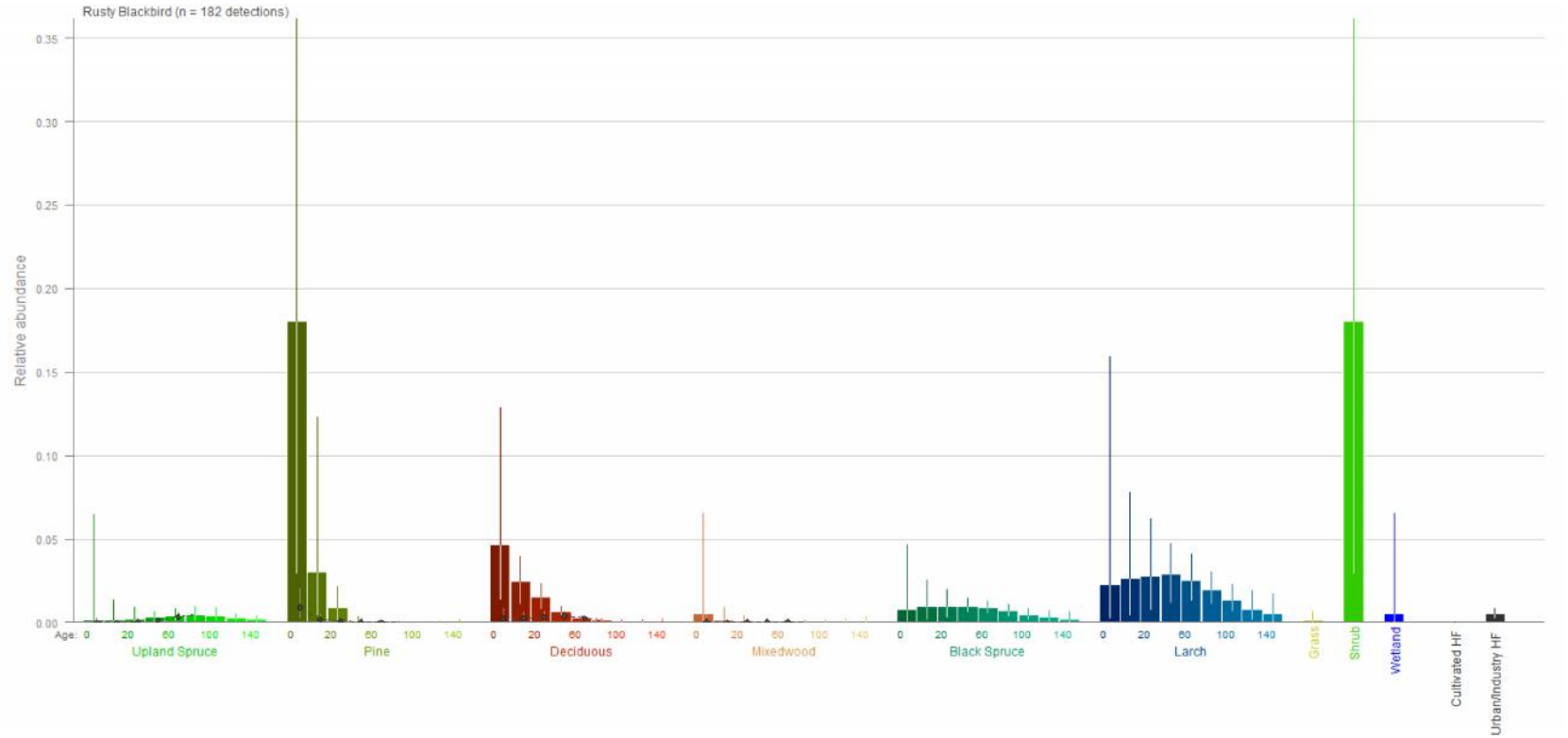
What we have done with data?



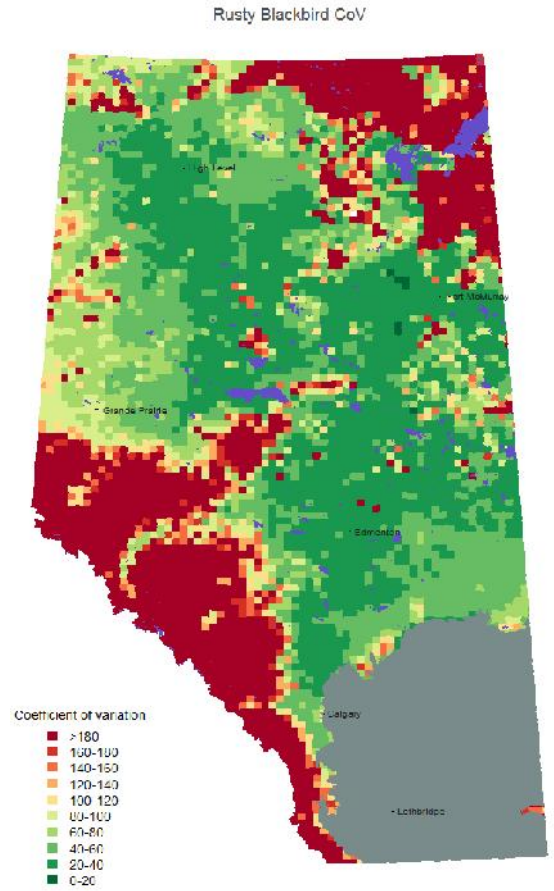


http://species.abmi.ca/

Habitat associations

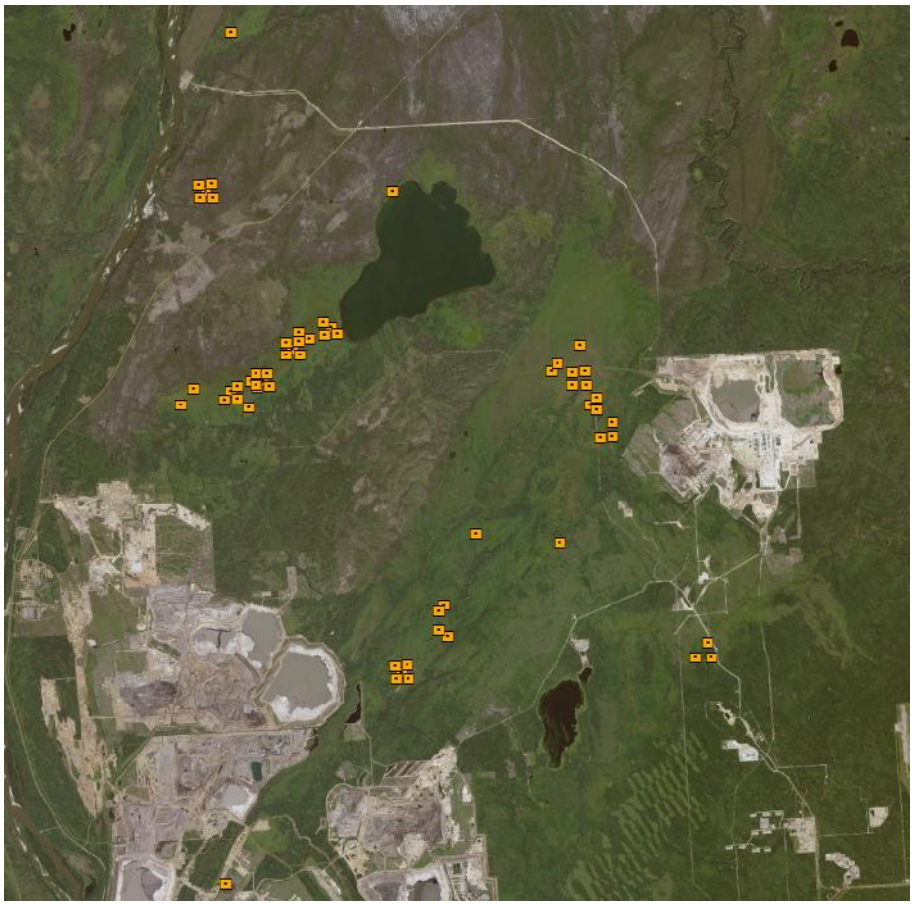


Model uncertainty



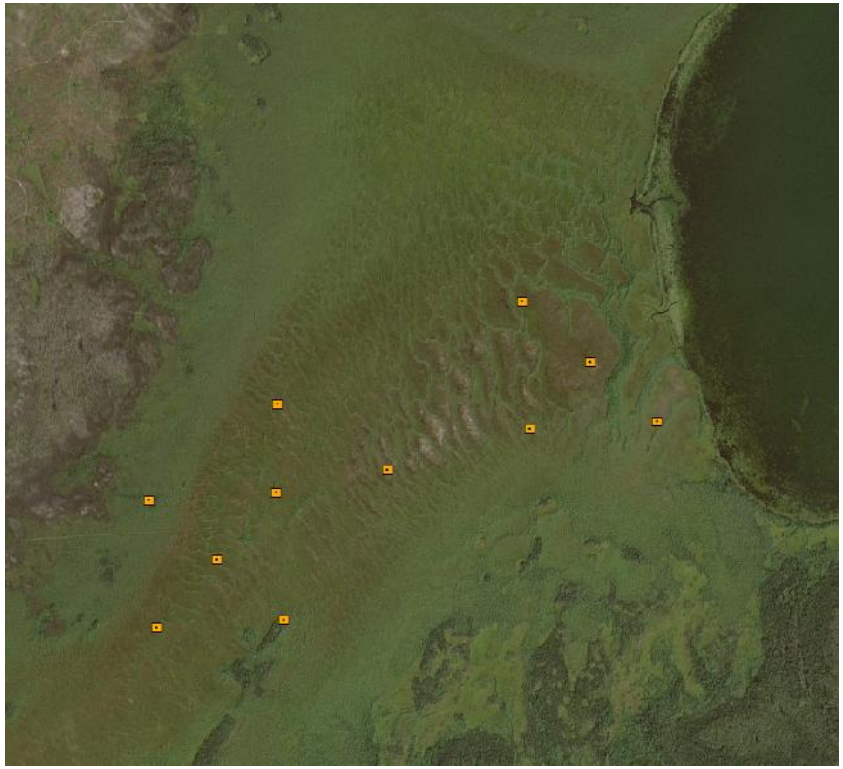
Small number of detections are near small open water wetland margins

Most have been found in very large fen complexes with larch (particularly those with flarks!)



- Probably the most controversial RUBL place on the planet! McLelland Fen.
- Is a mixture of graminoid, shrub, and treed fen surrounded by pine upland that results in dynamic waterflows in fen
- Directional flow creates “flarks” which are lines of larch that are oriented with water flow interspersed by wet shrubs & grass
- Easily 50 RUBL pairs, probably far more in this area
- Will be increasingly impacted by oilsands mines over next 50 years with potential for 60-70% of the fen to be lost

Flarks in the fen



Nesting

- Found 5 nests in 2015
- Could not monitor in detail but 2 of 5 failed between egg & our second visit
- Nests were in larch, usually mid-chest, and hidden in dense lichen mats on tree
- Distance between two nests of known individuals in subsequent years 400 & 600 metres respectively
- Both males & females returned to fen

Some interesting “foraging” behaviors?

Semi-colonial breeders? Lots of unpaired males?

When trying to catch birds and get their attention using playback, we would have get multiple males (4 or 5) coming to the same spot

It is possible that the birds are “defending space” together

However, most of the birds moving to the esker were males so maybe there are just a lot of males floating around without mates

A lot of unknowns, but home ranges are huge (20-30 ha easy) and lots of movement making hard to study because of difficult of walking in fen (1km per hour is about the max)

Take home

- Alberta seems to have pockets where a large number of RUBL still exist. Larch dominated systems with heavy lichen. **Perhaps caribou conservation might actually help something else!**
- Trying to raise funds to hit more of the “flarky” areas to assess how common they are elsewhere
- Work started on linking these populations to wintering grounds that Luke will talk about