

Preliminary trends for Yellow Rail in LAPR

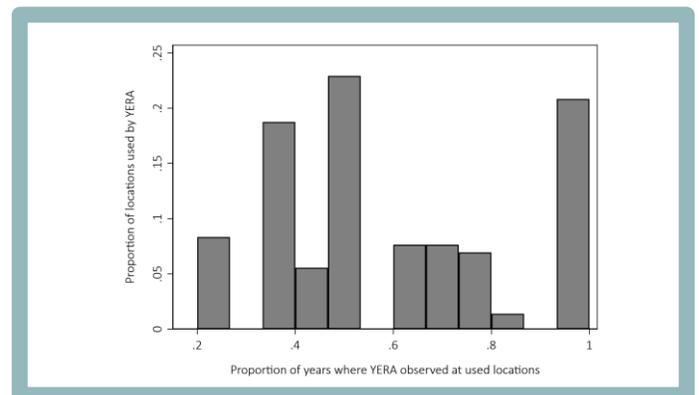
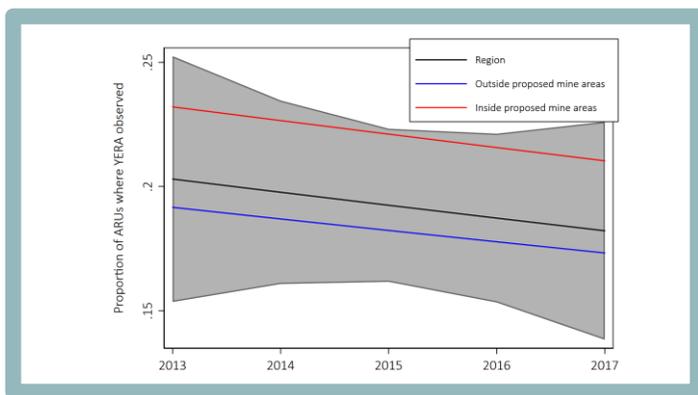
Dr. Erin Bayne – Professor – University of Alberta. January 18, 2018.

Introduction: The Yellow Rail (YERA), a species of concern in Canada, is found in grassy wetlands of the boreal forest that are relatively common near Alberta’s oilsands mines. Habitat models created for a section of the Lower Athabasca planning region (LAPR), suggest YERA may lose 2.5% of their habitat to future mine development. Evaluating how potential loss of habitat in the future will effect YERA requires a good understanding of current population size & trends at meaningful spatial extents. Formal trend estimates do not exist for YERA in Canada, although anecdotal reports suggest local declines. Of particular importance in Alberta, is how YERA populations are changing in suitable habitat close to versus far from oilsands mines.

Is YERA occurrence close versus far from oilsands mines changing at the same rate?

Methods: Since 2013, we have surveyed for YERA at almost 4000 locations in the Lower Athabasca planning region (LAPR) using autonomous recording units (ARU). When a YERA is found at a site (area of ~ 80 hectares), we redeploy 4 to 5 ARUs in subsequent years. A total 414 ARUs have been deployed at the same sites in multiple years (44% for 2 years, 32% for 3 years, 14% for 4 years, and 10% for 5 years). Controlling for # of recordings, time of day, & time of year, a cross-sectional time-series analysis was used to determine change in YERA occurrence close (inside proposed mine expansion areas) vs. far (areas outside mineable region).

Results: The occurrence of YERA showed a slight, but non-significant decline (grey area in left panel indicates 95% CI in regional trend). The rate of decline is similar close vs. far from mines. Whether a location is used every year varied, with 21% of ARUs having YERA every year & 67% having YERA more than half the time. Variation between years is the same close vs. far from mines. Future work will examine trends in occupancy & density.



Take-home messages:

- Current mining activities have not caused change in YERA at rates any higher than observed in LAPR overall.
- Some sites are used more consistently. Currently assessing why & evaluating potential management options.
- Simulations shows significant declines in YERA would be observed in LAPR if proposed mines were developed.
- We are assessing if mitigation monitoring adjacent to future mine edges will have sufficient statistical power to detect edge effects in suitable habitat caused by activities within the mines per se (i.e. water draw down, deposition).

Acknowledgments: The YERA is monitored by the Bioacoustic Unit, Suncor – Fort Hills, Imperial - Kearl, Canadian Natural Resources, and the regional Oilsands Monitoring program. See [//bioacoustic.abmi.ca/](http://bioacoustic.abmi.ca/) for details.