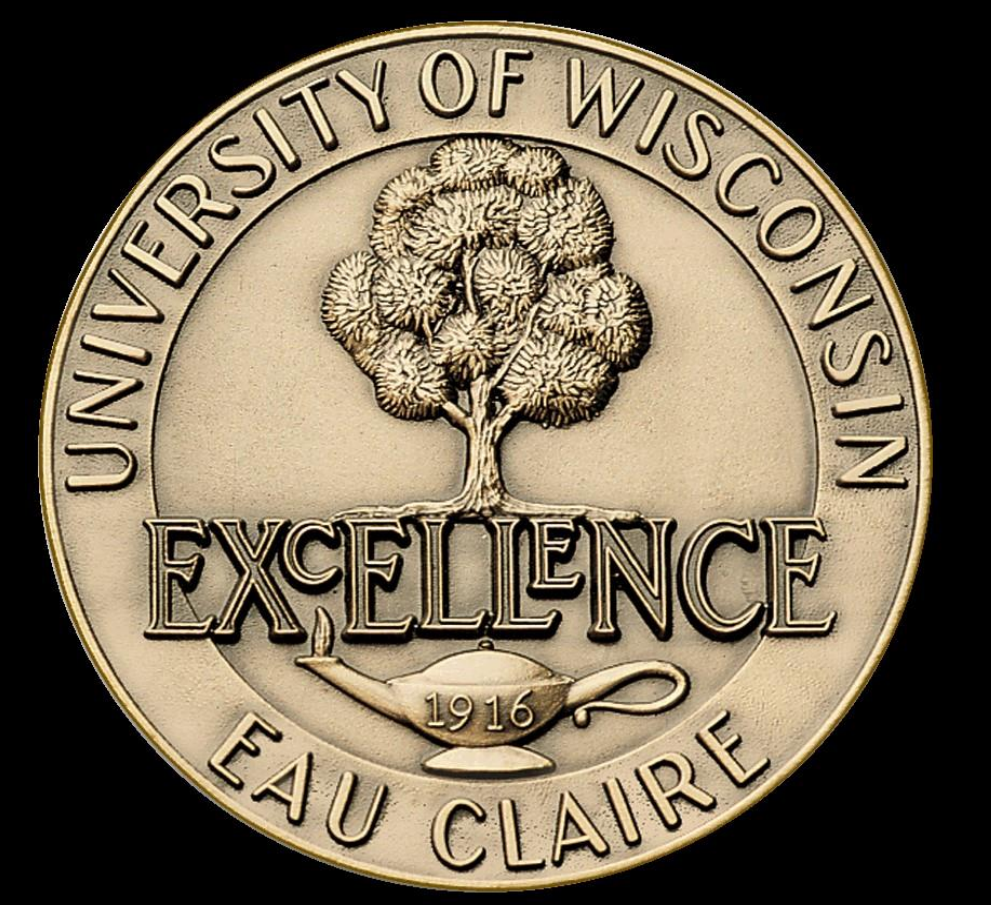




Up from the Tropics: Migratory Patterns of the Rose-breasted Grosbeak

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Introduction

The Rose-Breasted Grosbeak (RBGR) is a neotropical migrant that breeds in North America. We hypothesize that male RBGR will arrive earlier in spring than females to establish territories on their breeding grounds. We used bird banding data collected from banding stations in Ontario, Canada and Beaver Creek Reserve (BCR), Fall Creek, WI. Results from initial data sorting and analyses indicated that more males than females comprised the first date of arrival at both locations. In addition to analyzing historical data, as part of BIOL 490, we learned the methods of bird banding at BCR. Skills included catching birds in mist-nets, measuring wing chord lengths and weight, differentiating sex and age, helping with data collection and banding of the birds.



Figure 3a



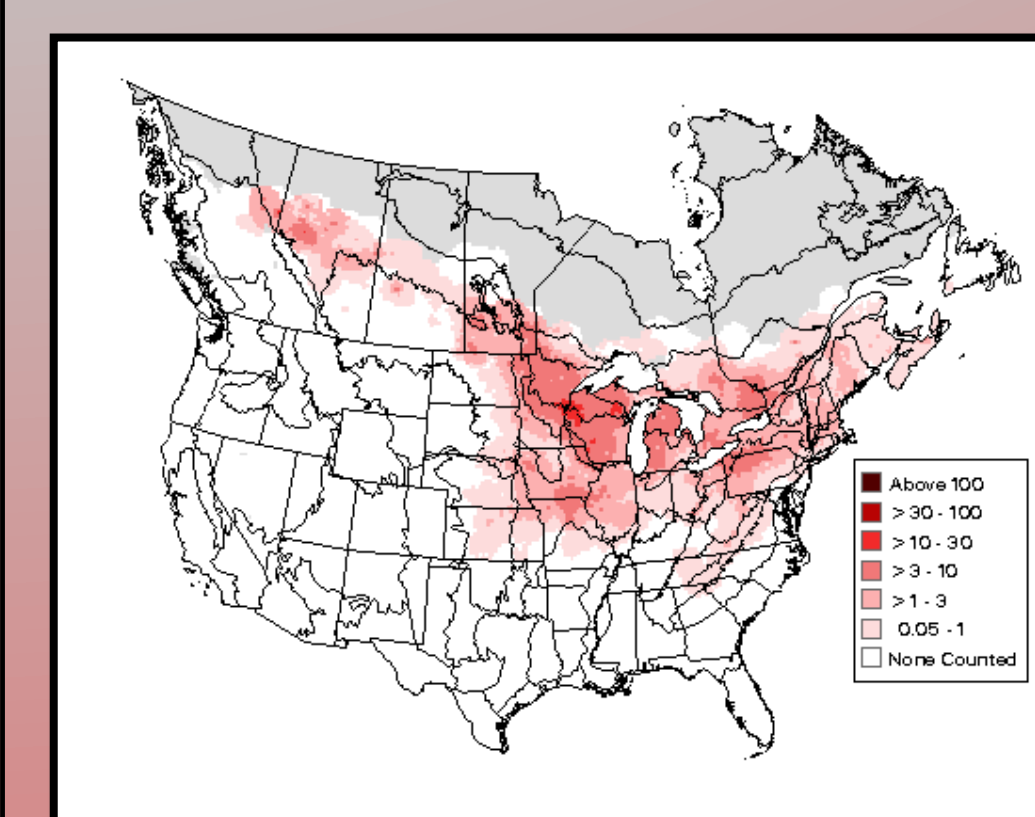
Figure 3b

About RBGR

The Rose-breasted Grosbeak (*Pheucticus ludovicianus*) is a neotropical migrant that breeds in the northern US and Canada. These birds migrate to Mesoamerica as well as northern parts of Venezuela, Colombia, and Ecuador during the nonbreeding season (Fig. 1). During the breeding season they eat insects as well as berries and seeds. They primarily eat a frugivorous diet during migration, and invertebrates and fruit available in their wintering habitat. The RBGR breeding habitat includes deciduous forests and areas with mixed trees and shrubs (Fig. 2). Adults are sexually dimorphic. Males are black and white with a red patch on their chest while females have more of a brown and tan plumage (Fig. 3a and b).



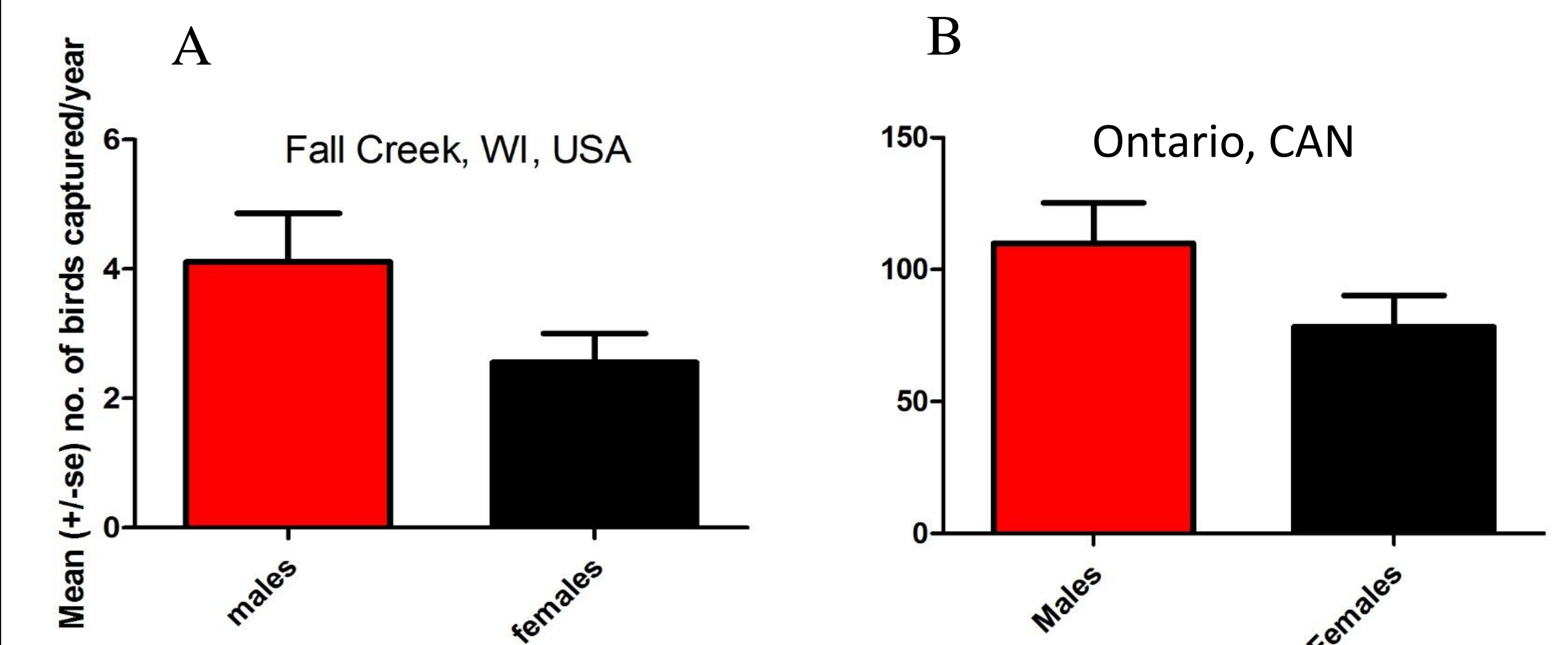
Figure 1 (left) shows migration patterns. Figure 2 below shows the distribution during the breeding season.



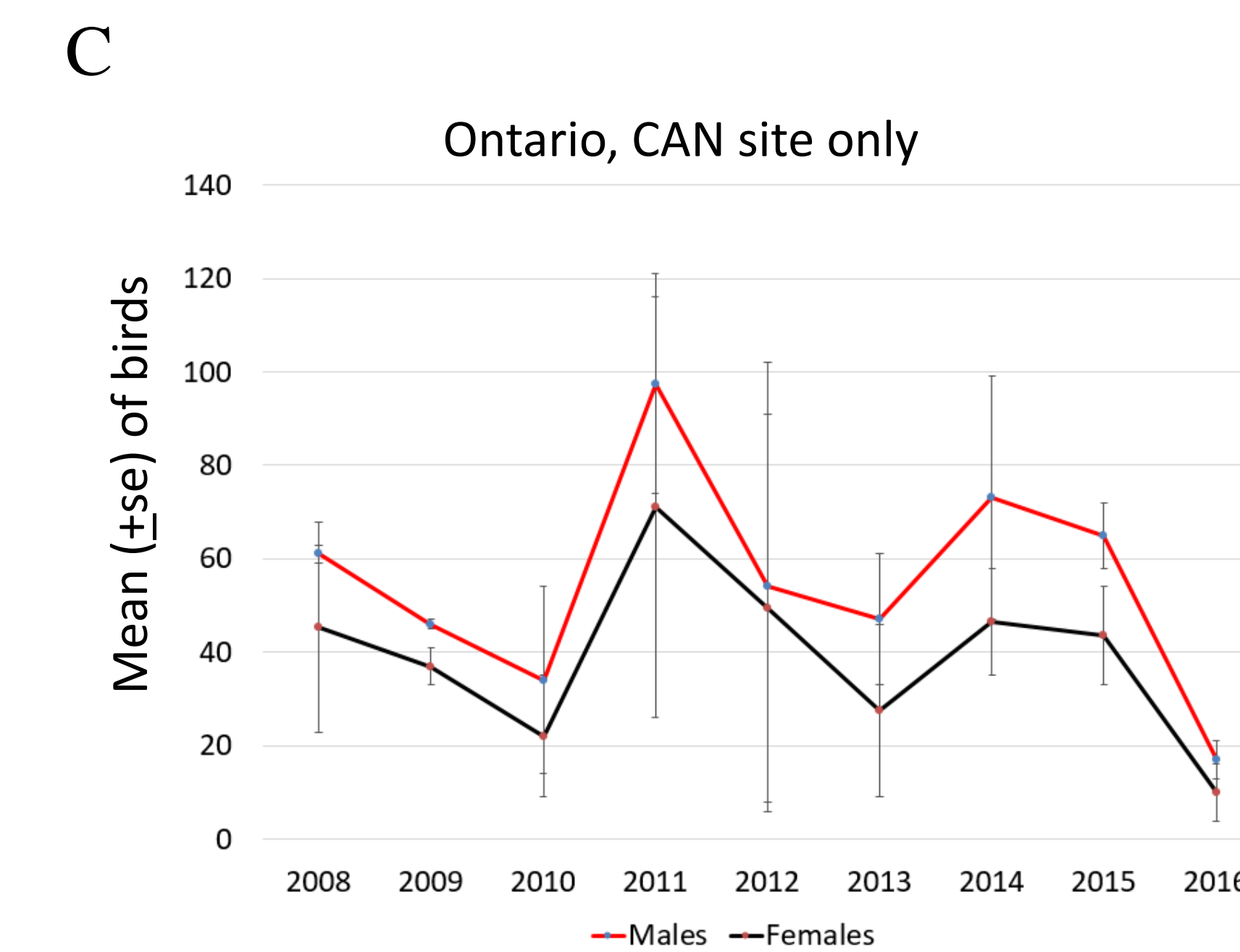
https://www.allaboutbirds.org/guide/Rose-breasted_Grosbeak/lifehistory

<https://ebirdr.com/bird/rose-breasted-grosbeak>

Results/Discussion



Graphs A and B compare the pooled mean number (\pm se) of males and females captured the first two weeks of May/year, 2008-16 (n=9 years); Paired t-tests BCR $t=2.13$, $df=8$, $p=0.065$; Ontario $t=5.76$, $df=8$, $p<0.001$. Note differences of scale (y-axes).



Graph C represents the mean number of birds captured during the first two weeks of May in Ontario, Canada, per year.

Our hypothesis that more males than females would arrive earlier to northern breeding grounds was supported by data collected from both locations. However, only the mean number of males captured in Ontario was significantly greater than females.

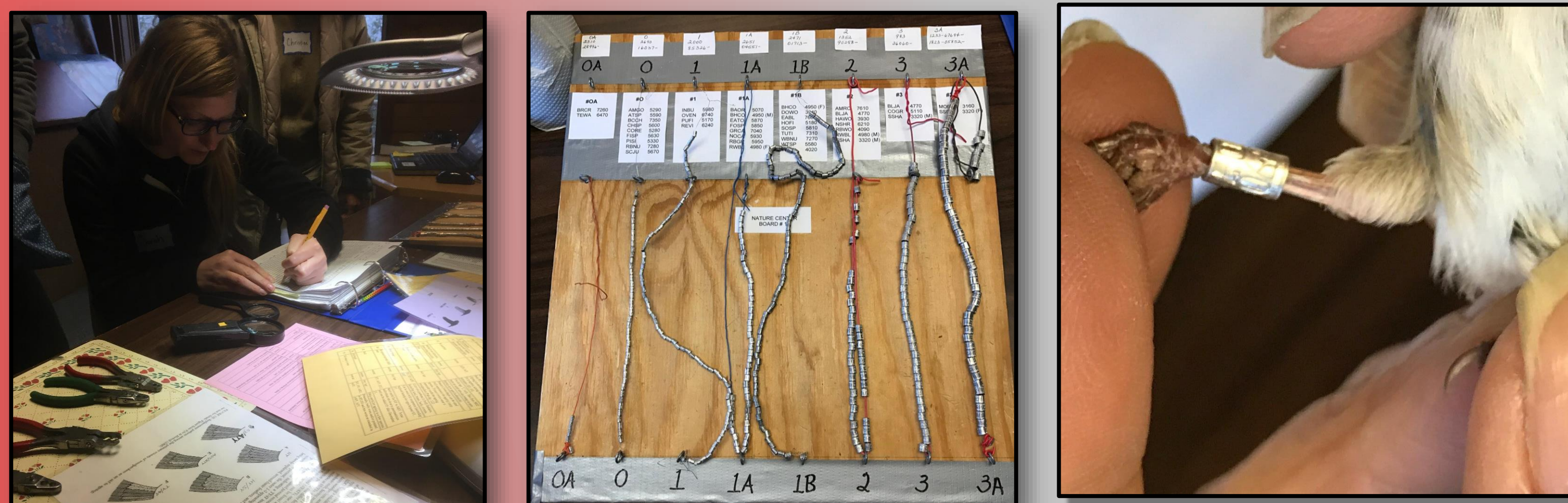
We generated a second graph (Graph C) comparing the mean number of captures for males and females by year for Ontario. On average, more males were captured suggesting if we assume a 50:50 sex ratio in the population, males arrived earlier each year.

Acknowledgements & References

We would like to acknowledge and thank Jeanette Kelly, Bruce Steger and the bird banding staff from Beaver Creek Reserve. We also acknowledge Jennifer S. Malpass at the USGS Bird Banding Laboratory.

REF: Cornell Lab of Ornithology. (2015). Rose-breasted Grosbeak. Retrieved from All About Birds: https://www.allaboutbirds.org/guide/Rose-breasted_Grosbeak/lifehistory#at_nesting USGS and ebirdr.com

Methods



We used Graph Pad Prism to analyze 9 years (2008-2016) of bird-banding data for the RBGR collected by the Beaver Creek Reserve Citizen Science Center, Fall Creek, WI, USA as well as data from the USGS Bird Banding Lab for 2 locations in Ontario Canada (Port Rowan and Nanticoke) for the same years. Based on initial observations of all spring data, we concluded that RBGR began migrating to the observed locations (similar latitudes) within the first two weeks of May each year. To test our hypothesis, we compared the total mean number of males and females captured May 1-15, 2008-2016.



Locator map, red stars indicate two study areas