Coding Project Notes

Historical weather data from the government of Canada was used as much as possible by finding monthly means for each community in Ontario by searching latitude/longitude. Those were available until up to about 2006.

After that – used modelling website by community.

USING GRIDDED VALUES

Results:

Model of result on year (not counting anything else) – just change in EAB abundance over time

Slight increase, but no statistically significant results (p = 0.6 (intercept – when year is 2002) and 0.5 (with every year – coefficient)).

Hypothesis 1 – according to our test models, no significant results. Therefore can’t say conclusively that there’s a change in EAB abundance over time

Over time, is there an interaction between the year and community, like was there one community that saw a significant difference as time went on? No, no significant p-values

JUST individual communities, not by type

Makes sense seeing as how some communities were only mentioned once or twice

Model is going over the years, then the communities and then their interactions – looking at each one individually. If one community is only mentioned once, obviously it won’t see much change over the years. No singular community saw significant.

Model 2: effect of latitude and longitude and their interaction on the result

Year, latitude and longitude

Good way to look at whether latitude and longitude has an effect, do latitude and longitude have an effect on community type? Like are they more likely to be categorized as rural in a given latitude/longitude? Yes, which correlates with what we know, such as that northern Ontario is more rural while southern Ontario is more urban.

Over the years, did lat/Long effect on EAB detection?

Statistically significant!

Community type has an effect hypothesis, and we’ve shown that there is an effect by lat/long on community

**Everything was done over the years**

Model 4:

Community type – chi square, does it effect presence of EAB?

Statistical significance!

GLM model – over the years, did community type have an effect on the detection of EAB?

Yes

Intercept is when the year is 2002 and community type is rural. With every year, there was a decrease in detections in rural communities. When year is 0 (2002) and community type is urban, theres a much lower initial value, but as the years increase there are increased detections