

Hayden and Ying R and ggplot

Hayden Wainwright

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Initial tutorial in R and ggplot

Hayden and Ying

Overview:

Research Question:

Does frog mortality rate change in current COVID-19 situation in Ontario?

H0: nothing will change H1: Frog mortality rate decreases with decreases in traffic and road mortality H2: Frog mortality rate increase with increasing human predation for food under pandemic

Topics to be discussed

R Basics (5-10min tops) (Hayden):

1. how to make a project
2. markdown vs script
3. github links
4. handling error messages (dependencies missing, unexpected “,”, googling answers)
5. how to google 101
6. other helpful links (Ying)
7. packages

Simulating work (30min) (Hayden):

1. how to generate a “fake” data set (date, frogs dead on road, estimated pop size, location, Avg or total cars on road per unit time)
2. how to export the data set
3. power analysis???? (can go if need be)

dplyr (20 min) (Ying):

1. Import Data
2. How to change data into what you want
3. how to get rid of NA in your data
4. how to make a new column in your data
5. how to change the orientation and layout of your data (Hayden)
6. double checking data sets for spelling mistakes

7. piping and filtering/sort data
8. creating new data frames
9. how to make a small program (for loop, if statements, make your own functions) (Hayden to help)

ggplot (20min) (Ying and Hayden):

1. qplot
2. plotting basic functions in ggplot using geoms
3. adding trend lines
4. adding multiple data sets to same graph
5. annotate text and axes
6. changing colour schemes and shapes
7. change theme of a plot
8. plotting models
9. confidence intervals and standard error bars
10. how to add multiple plots to one graph space