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This is a summary of the results I obtained in my analysis of the strongest ecological predictors of human ethnic diversity worldwide

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The Variables

- **Pathogen Stress** is an index that reflects how likely each of the 8 major classes of pathogens identified as chronic, or acute, by medical anthropologists, are to be found in a specific area

- A high score (max. possible value of 21) means you're likely to encounter most or all of the pathogens and could suffer deadly infection, a low score means you're likely to encounter less of everything

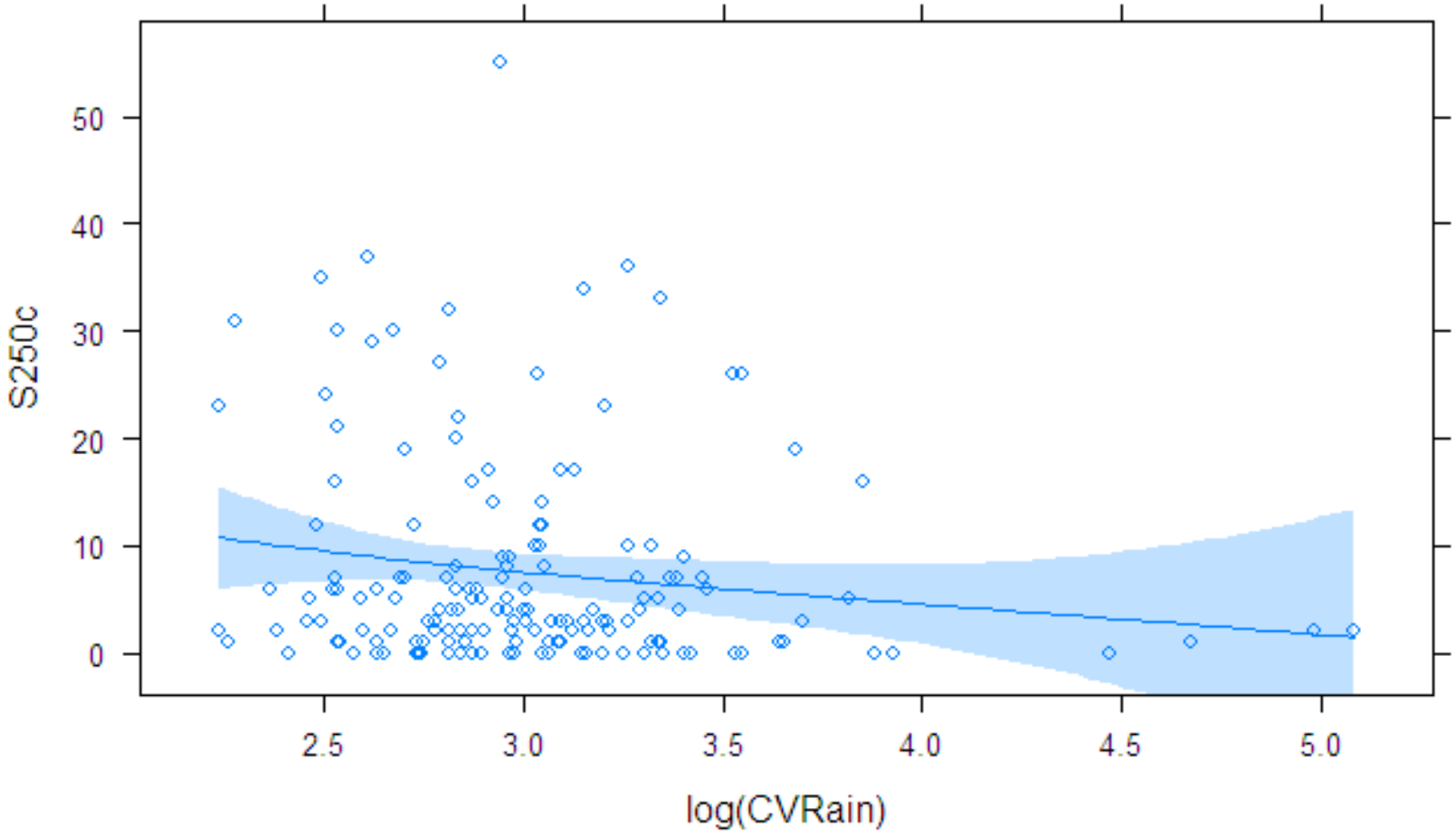
The Variables

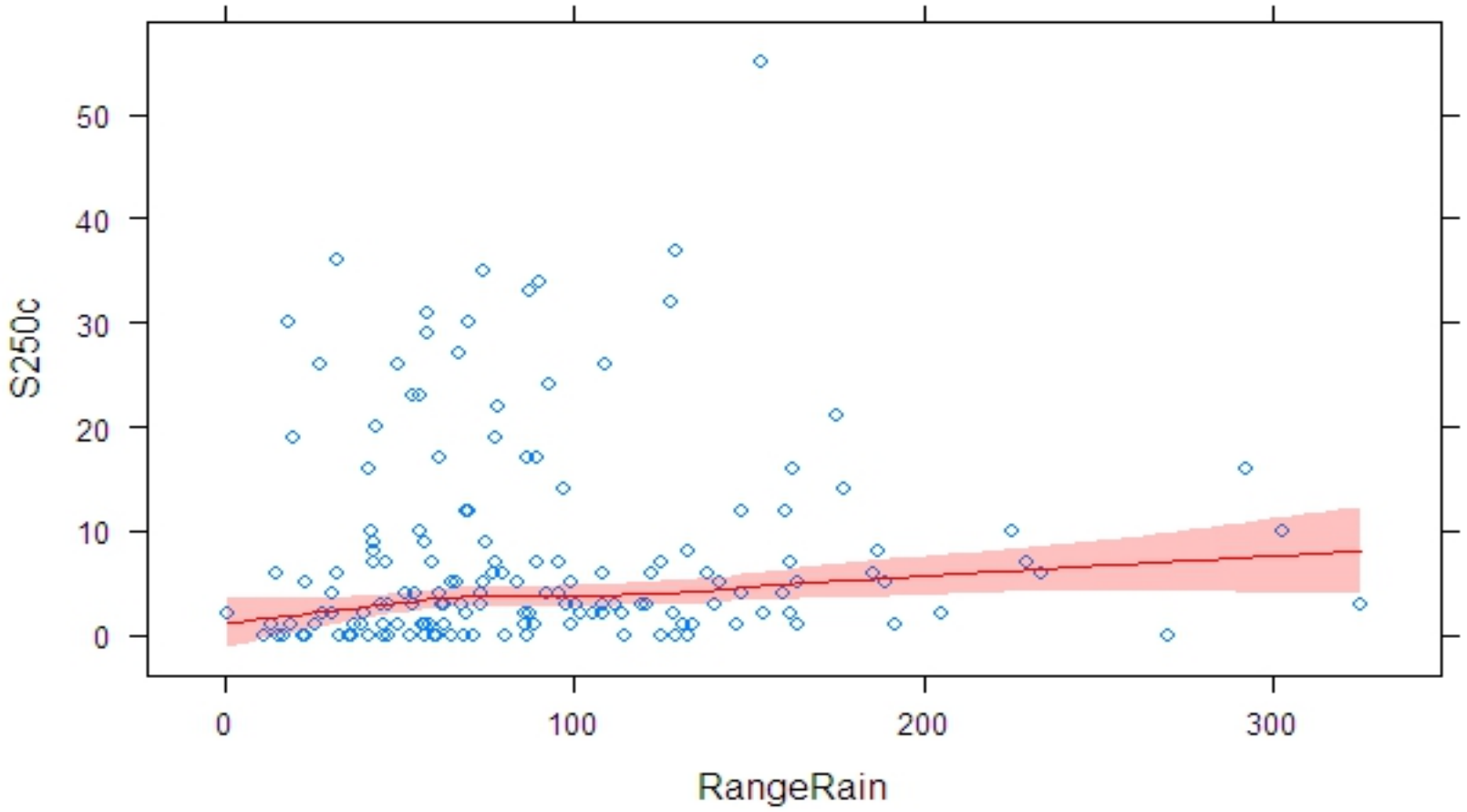
- The original idea behind B. S. Low's **Pathogen Stress** index ("total pathogen stress" in her papers) was to gauge at a glance how likely one was to be afflicted by various endemic, potentially deadly pathogens

- Low assessed the prevalence **leishmanias**, **trypanosomes** (both infective protozoans), **malaria**, **schistosomes** (parasitic worms), **filariae** (parasitic worms, cause elephantitis), **spirochetes** (the bacteria that cause Syphilis), and **leprosy**

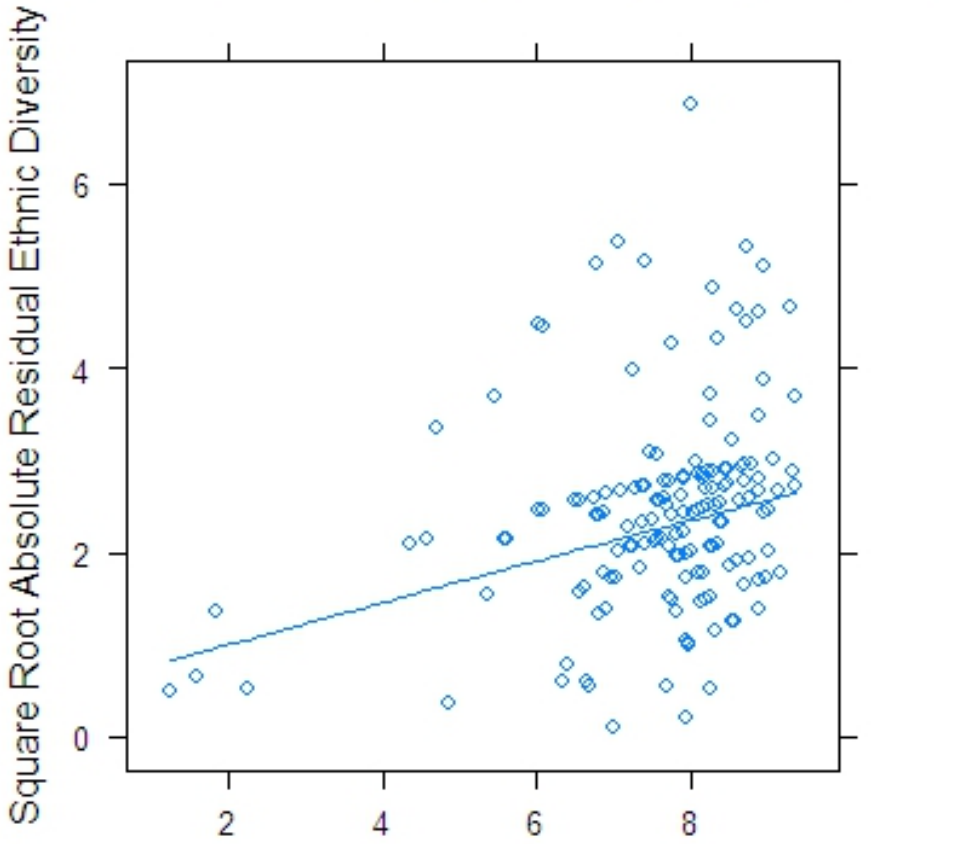
The Variables

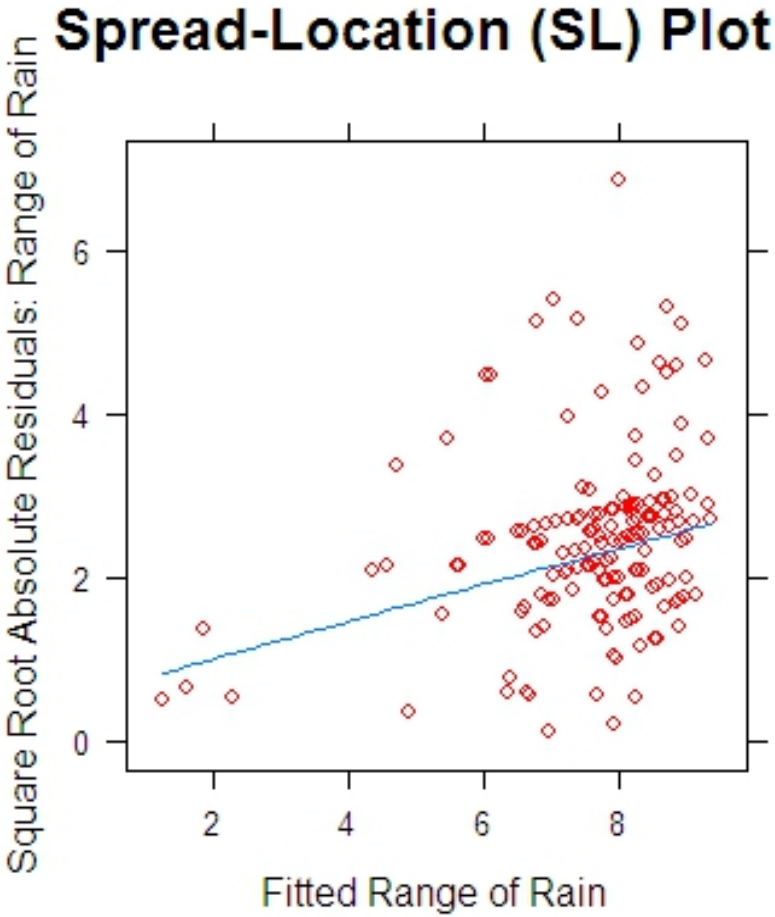
- Environmental variables hypothesized to predictors of human ethnic diversity:
- **Mean Rain fall**
- **Range of (yearly) Rain fall**
- **Coefficient of Variation of Range of (yearly) Rainfall**
- **Altitude**
- **Latitude**
- **Habitat Diversity**


S250c
50
40
30
20
10
0
2.5
3.0
3.5
4.0
4.5
5.0
log(CVRain)

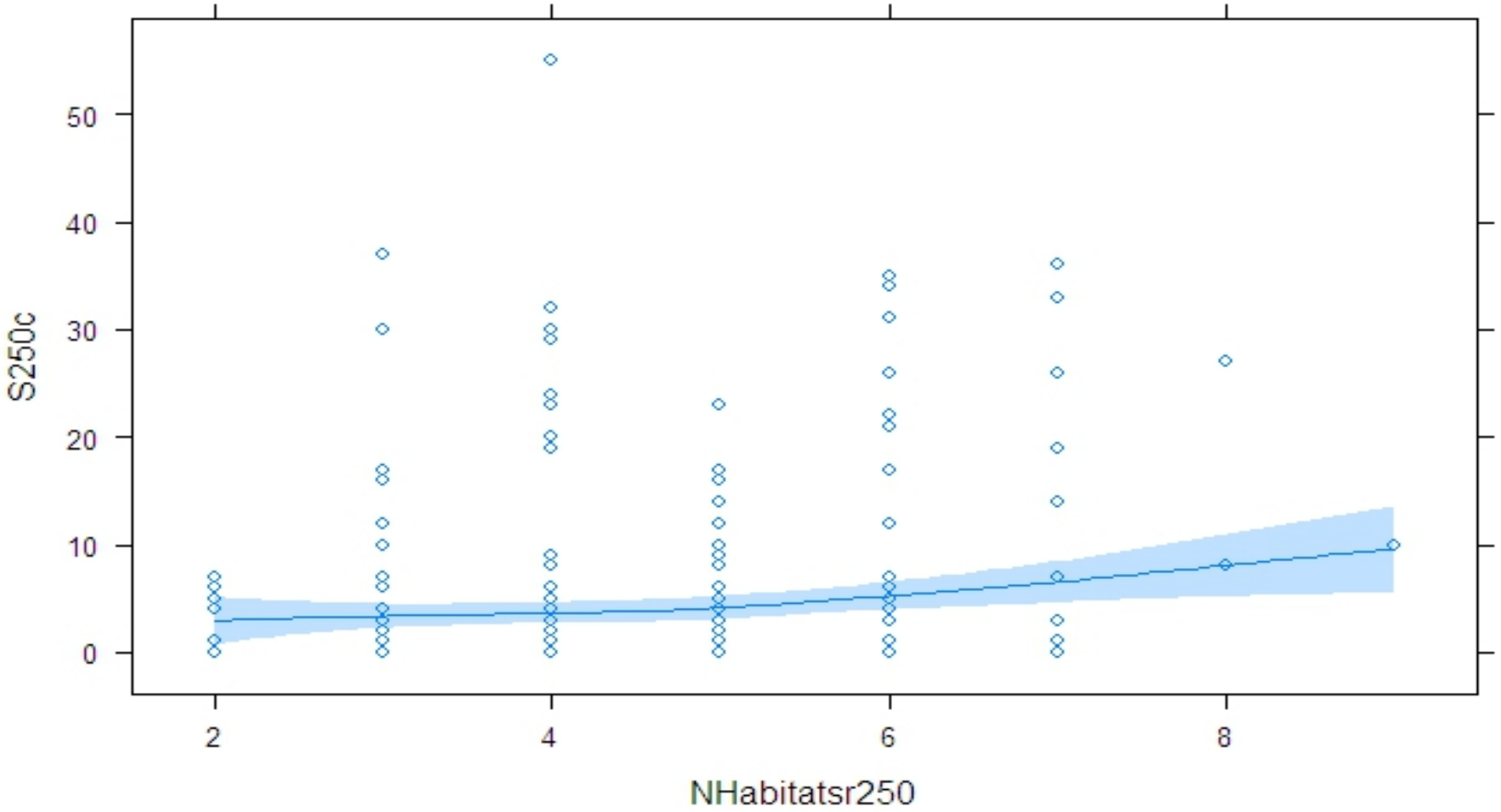

S250c
RangeRain
0
10
20
30
40
50
0
100
200
300

Spread-Location (SL) Plot

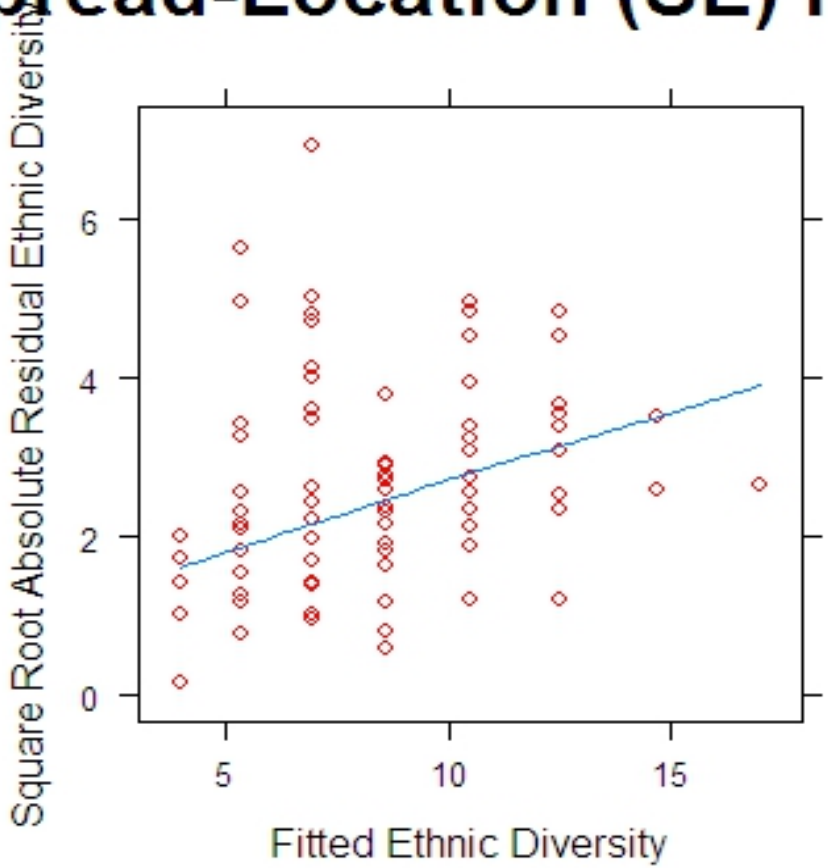




Yearly Range of Rainfall and Ethnic Diversity


S250c
0
10
20
30
40
50
2
4
6
8
NHabitatsr250

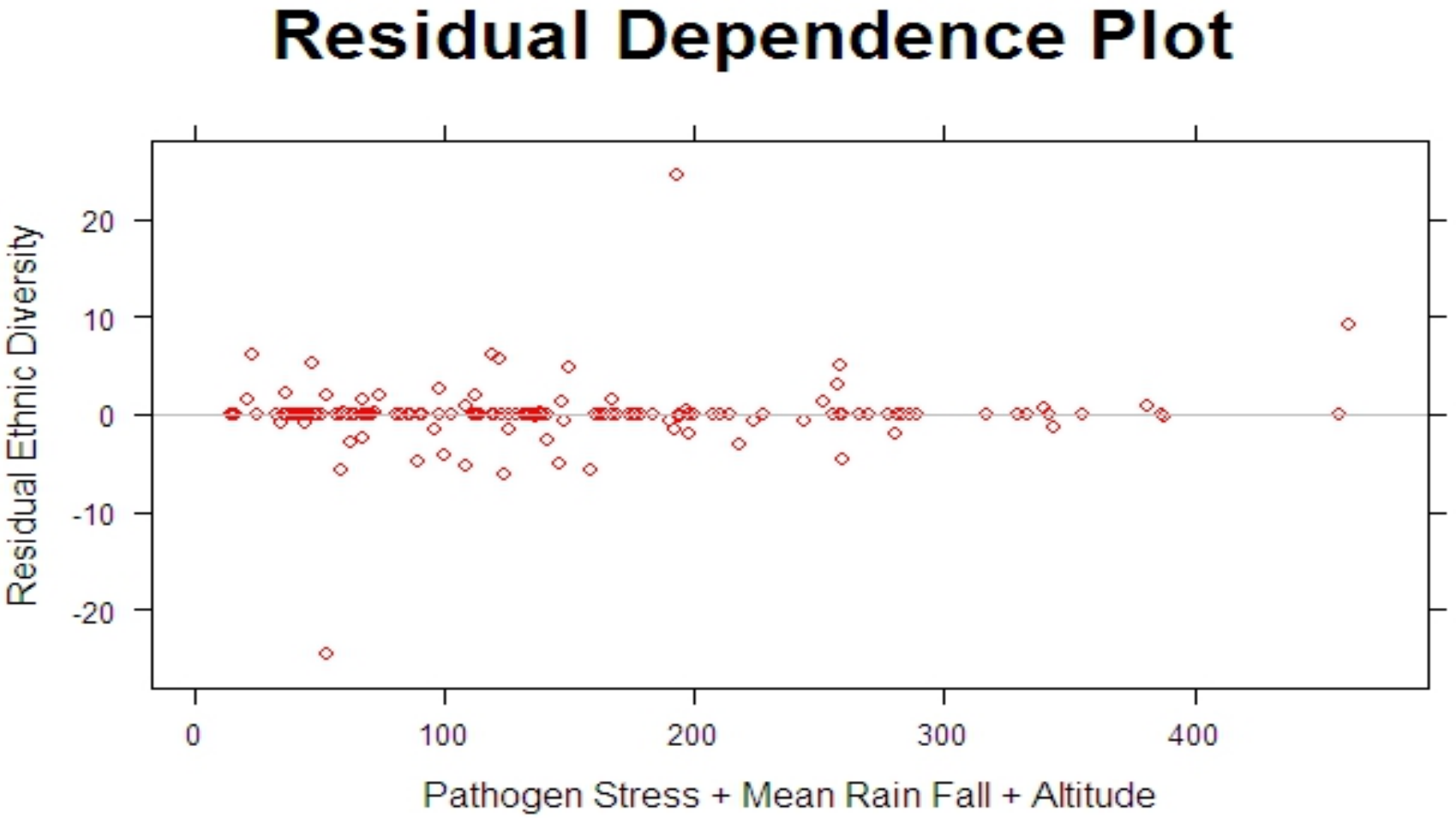
Spread-Location (SL) Plot

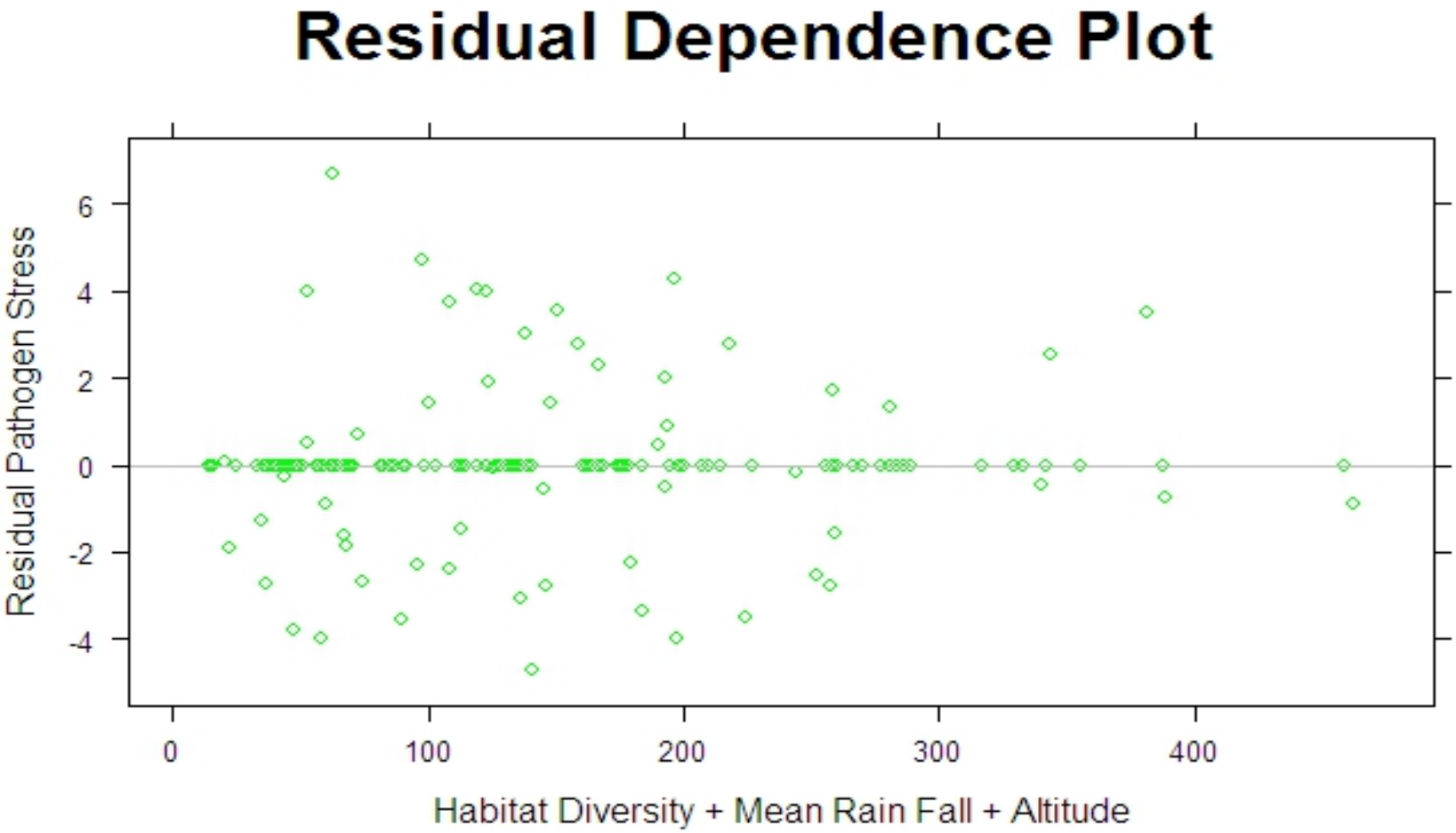


Ethnic & Habitat Diversity

The Statistical Models

- I performed a multiple linear regression with backward model selection and AIC to determine which models best predicted **ethnic diversity** and **pathogen stress**
  - Ethnic Diversity = Altitude + Mean Rain + Pathogen Stress
  - Pathogen Stress = Altitude + Mean rain + Habitat Diversity


Residual Dependence Plot
Residual Ethnic Diversity
20
10
0
-10
-20
0
100
200
300
400
Pathogen Stress + Mean Rain Fall + Altitude


Residual Dependence Plot
Residual Pathogen Stress
6
4
2
0
-2
-4
0
100
200
300
400
Habitat Diversity + Mean Rain Fall + Altitude