**Assignment 6**

**John Hopkins University – Computational Modeling for Policy and Security Analysis**

When analyzing the graphs of the results of the Simple Birth Rates model, it struck me how similar the relationship between blue fertility and the time to red extinction was across different carrying capacity values. I conducted simulations where blue fertility took on values between 2.1 and 5, with a .1 increment, and where carrying capacity was 500, 1000, or 1500. In the graph of the results of my experiments I show the relationship between blue fertility and the time to red extinction for each carrying capacity value. The points on the graph are nearly indistinguishable between each carrying capacity after a blue fertility of about 2.5. At that point, it seems, the carrying capacity of the model plays no role in the time to red extinction, as red seems to always go extinct in about 25 ticks or less. The results appear the most significantly different at the lowest values of blue fertility. For example, when blue fertility was 2.1, the 500 carrying capacity experiment showed an average time to red extinction of about 150, while the 1000 and 1500 carrying capacity experiments had values of about 180. However, even these results are all within one standard deviation of one another. While I have not conducted any statistical tests of the results, it does not appear that the carrying capacity plays a significant role in the time to red extinction, and does not impact the relationship between blue fertility and the time to red extinction.