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FISH 558 HW #4

Part A

For my MCMC simulation, I ran 500,000 simulations with a burn-in period of 100,000 iterations. My thinning rate was every 1000th sample. The effective sample size was 400. The burn-in period was chosen because it complied with common practice, which is to eliminate between 5 to 50% of the chain length. The parameter trace plots did not have evidence of a “pigtail”. There was also no evidence of a trend in the trace plots, which would indicate an issue with the sampling method. The thinning rate could have been higher, but I was constrained by the computational limitations of my laptop. Histograms for each of the parameters are given below.







Parameter 1 =

Parameter 2 =

Parameter 3 =

Parameter 4 = 

Parameter 5 =

Parameters 6-25 = 

Parameters 26-45 = 

Part B



Part C



Overall, I think the model looks ok. The observed mosquito counts at each distance are within the 95% confidence interval. It appears the model is overestimating the number of mosquitos at the mouth of the river.