Assignment 10

1. Download Exercise 10.xls, open Presence. Set up a new input file and copy and paste the data from the spreadsheet. This is a single-season two-species data set with two occasions and 500 sites. It should be obvious from the labeling in the left two columns that the species encounter histories are pasted one below the other.
2. Start Presence and create a new project. Open the input data form and paste the data from the spreadsheet. Be sure to adjust the number of occasions at the top of the form. There are no site or sampling covariates for this data. Save the data file and then click OK when you're done to save the project files. These data were simulated with the following parameter values:

|  |  |
| --- | --- |
| Parameter | truth |
| ψA | 0.60000 |
| ψB | 0.60000 |
| ψAB | 0.40000 |
| pA1 | 0.70000 |
| pA2 | 0.50000 |
| pB1 | 0.70000 |
| pB2 | 0.50000 |
| pAb1 | 0.10000 |
| pAb2 | 0.10000 |
| paB1 | 0.20000 |
| paB2 | 0.20000 |
| pAB1 | 0.50000 |
| pAB2 | 0.50000 |
| pab1 | 0.20000 |
| pab2 | 0.20000 |

1. To analyze the data select Run/Analysis:two-species. Notice that the three model parameterizations that we discussed in class appear as options in the Numerical Estimation Run dialogue.
2. Run each parameterization with the default model. Examine the design matrix for the default models and in your own words explain the hypothesis described by the model.
3. Follow the instructions that appear when each option is selected to estimate A and B independently. In your own words explain the hypothesis described by each model.
4. Use the Design Matrix to cast a model under the hypothesis that both species are equally likely to occur at each site, and that B is less likely to be detected when A is present.
5. Paste the Results table at the top of the Results sheet in the spreadsheet and email it to me.