Biology 4605/7220

28 Oct 2010, 3 Nov 2017, 31 Oct 2018 Worksheet for Exam 2 Part 2

For the following analyses list the number of regression (ratio scale) explanatory variables, the number of nominal scale explanatory variables (factors), and the number of interaction terms. Write a GLM with df below each term.

Regression Factors Interaction

1. Heart rate of 30 marathon runners \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

compared to 20 sprint runners,

controlled for body size (weight)

GLM: =

df:

2. Regression analysis of number of babies \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

delivered per year in 17 European countries,

as a function of number of storks and land area (Matthews A.J. 2000. Storks deliver babies p = 0.008. *Teaching Statistics* 2:36-38 ).

GLM: =

df:

3. Hierarchical ANOVA of wheat yield \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

in two fields on each of 3 farms.

Number of observations per field: Farm1 (n=3, 3) Farm2 (n = 3, 4) Farm3 (n = 3,3)

GLM: =

df:

4. Power laws are used to describe the relation of

lobster egg number to size (carapace length).

Compare power laws for lobsters \_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_

from Virginia (n=10) , Maine (n = 11),

Nova Scotia (n = 10), and Newfoundland (n =10).

GLM: =

df:

5. With the bicycle ECG stress test, does maximum power

output by male and female patients depend on

whether the investigator is male or female? \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

ntotal = 27

GLM: =

df:

6. Do the results for the analysis above differ

among cardiac units (different hospitals)? \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

ntotal = 81 [challenging!]

GLM: =

df: