Methods in Experimental Ecology II (PCB 6468)
Exercise 9 – Binary Mixed Models
Model Selection
Due April 4, 2018

A UCF researcher (Pierre, et al. 2017) studied, among other topics,
the survival of apple snails in wetlands with different pH and
previously occupied and unoccupied by this species.

1. Use the `Exercise9_data.R` script provided in the class website to generate a sample [`snails`] following the description above (you only need to run it once and then keep the data as a fixed input for your analyses).

2. State *your* scientific hypothesis.

3. Inspect and plot *your* data (publication quality).

4. Select and justify the most likely statistical model to test *your* hypothesis using the data.

5. Verify the assumptions of the model *you* selected using plots.

6. Plot *your* predicted model with 95% CI (publication quality).

7. Interpret *your* results. And compare with the results of 3 other students.

Hint: *start evaluating random effects and then the model fixed effects. As you add more complex parameterizations justify why you think the changes are appropriate in this case, think back to what we did in this week's demonstration.*

NOTE 1: Please submit your paper as a single word document. Remember to include your raw data and all the appropriate R code as appendices at the end.

Pierre S.M, P.F. Quintana-Ascencio, E.H. Boughton, and D. G. Jenkins. 2017. Dispersal and local environment affect the spread of an invasive apple snail (*Pomacea maculata*) in Florida, USA. Biological Invasions 19: 2647-2661.