**Coding exercise, week 3, V2: Known-fates models**

**This week’s challenge:**

Using the Rmark user guides: <http://www.phidot.org/software/mark/rmark/ABeginnersGuidetoRMark.pdf>, and <http://www.phidot.org/software/mark/docs/book/pdf/app_3.pdf>

Along with the Black Duck data set that is built into MARK/RMark: (<http://www.phidot.org/software/mark/docs/book/pdf/chap3.pdf>), and

 Conroy, Michael J., Gary R. Costanzo, and Daniel B. Stotts. "Winter survival of female American black ducks on the Atlantic coast." *The Journal of Wildlife Management* (1989): 99-109. (http://www.jstor.org/stable/3801314)

1. Scroll down through the code on this website (<https://sites.google.com/site/cmrsoftware/lecture-lab-schedule/9--known-fates-analysis/implementation-in-rmark-and-mark>), which is a good refresher on the black duck analysis we did today for those who weren’t able to attend class. Towards the end of the page, you can learn and practice how to implement predicting Si across a range of covariates. First predict Si across a range of weights using the Weight model, then predict Si across a range of
2. If you finish up with this, you can work on practicing bootstrapping other functions besides the mean, which I demonstrate for you at the end of tis week’s code. Try a product, or summation, or … This will help us figure out how to bootstrap the mean survival and confidence intervals next week. See if you can do a “manual” bootstrap of a statistic/estimate of your choice using a loop, as well as a bootstrap using a function you write, plus the boot() function.
3. More details on bootstrapping can be found in the code. There are also numerous online tutorials.