MEMO TO: 3310 Class

FROM: Editors, Journal of Conservation Biology

REGARDING: Help with reproducing data results

We have received an article about the survival and fecundity rates of a population of black bears in North Carolina. The paper includes the following table of fecundity and survival for female bears divided into six age classes.

Table 1. Black Bear Survival and Fecundity Probabilities

age (years)	survival	± SE	Fecundity
1	0.73	0.13	0
2	0.83	0.11	0.04
3	0.67	0.12	0.64
4	0.57	0.19	0.78
5	0.67	0.27	0.71
6	0.76	0.11	0.77

The bears were carefully tracked between 1977 and 1990 and so the fecundity rates are considered to be quite accurate. Survival rates, however, are less certain because some deaths were documented but a number of bears in the study area disappeared and may have been well-hidden in the study area at the time of the census or may have migrated out of the study area.

We would like independent verification of results to complete our peer review process, and so we would like you use the given fecundity rates and explore the survival rate ranges to answer the following questions so that we can compare your results to those presented by the authors of the paper.

1. What is the overall percent change in the population? Are the bears increasing or decreasing?
2. How does the population of evolve over the first five years after a year when no juveniles (ages 1-3) survive and there are 240 bears distributed evenly among the other age classes?

Please include a complete description of your process in the report. Thanks!