

1154-92-1006

Jim Michael Cushing* (cushing@math.arizona.edu), Department of Mathematics, University of Arizona, 617 N Santa Rita, Tucson, AZ 85721. *Survival or extinction: difference equation models of evolutionary adaptation*. Preliminary report.

Darwinian dynamic versions of difference equation population models are used to investigate the following questions: under what conditions will a population threatened with extinction be able to evolutionarily adapt to survive and what life history strategies (traits) will evolution select? Key components in the model equations are fertility versus survival trade-offs and trait dependent nonlinear density effects (including possible Allee effects). (Received September 12, 2019)