Life Not Lived

1. Author and Contact Info:

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2. Category:

Biology (Population Genetics)

3. Brief Description:

This application is used to investigate the interaction between natural selection and population growth. The model assumes viability selection for one gene with two alleles and logistic population growth. Since viability is a demographic parameter, natural selection affects population growth. This application is used to illustrate a theoretical prediction by Desharnais & Costantino (1982) for the effects of initial allele frequency on population growth under natural selection. This prediction involves a measure of initial genetic disequilibrium called "fitness entropy" and a how this genetic disequilibrium results in "life not lived."

4. How the Application Can be Used:

LifeNotLived.app was designed to be used in an upper division undergraduate course on population genetics. It is a good example of how computer simulation can be used to verify a theoretical result.

5. Developed under NeXTSTEP 2.1

6. Detailed Instructions:

Individual simulations are run and plotted on the left side of the window and results are accumulated and plotted on the right side. For detailed instructions, a description of the model, some suggested exercises, and references, click the Help button in the Info submenu.

7. Comments:

The help panel can be customized by opening LifeNotLived.app as a folder and editing the Help.rtf file. This is a good place to enter assignments, questions, exercises, etc.