

Notes on Drift_Age_Struct: An R Script to perform drift simulations in age-structured populations.

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1 Instructions

Drift_Age_Struct is an R script that performs drift simulations for age-structured populations following the method outlined in Overall & Faragher (2019). Example input files are provided (e.g., `US_females.txt`). Once the script has been copied into the working directory of R the `leslie.drift` function can be called:

```
leslie.drift = function(infile,B,N,T,iteration,initial,s)
```

Arguments:

`infile` is the input file consisting of three columns of data: Age, l_x and m_x .

`B` is the starting frequency of the mutation.

`N` is the population size.

`T` is the number of generations the simulation runs for.

`iteration` is the number of simulation repeats.

`initial` is the number of iterations of the leslie matrix run to stabilise.

`s` is the selection coefficient.

Example of use:

```
> leslie.drift(infile="datafile.txt",B=0.5,N=1000,T=1000,iteration=1000,initial=100,s=0.005)
```

A line plot is generated and the allele B frequencies at each time point are printed (`mean.HET`). The allele B frequencies at the final time point are also printed

(`het.DIST`), which can be used to create boxplots as in the manuscript (Overall & Faragher, 2019).

2 References

Overall ADJ and Faragher RGA. Population type influences the rate of ageing. *Heredity* (in press), 2019.