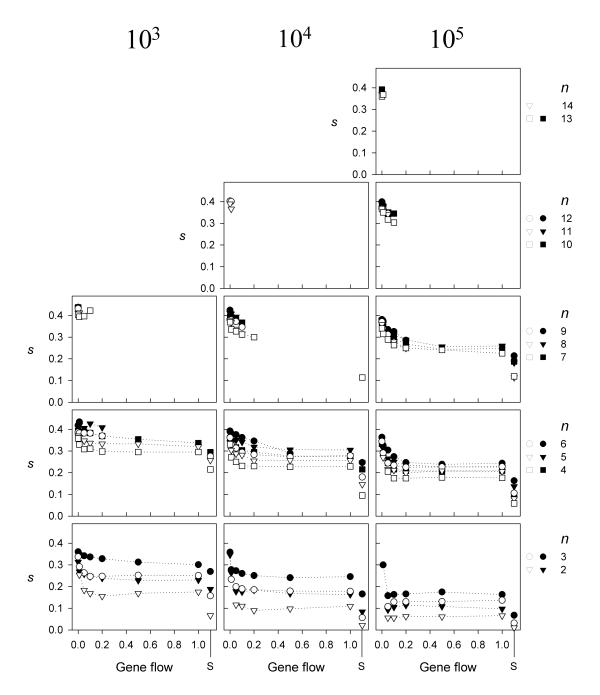


**Figure S1** The number of alleles (n, left y-axis) and average fitness ( $\overline{w}$ , right y-axis) as a function of time for two levels of gene flow (m) and three different population sizes (N) for individual simulations. The black, interrupted line indicates n and the grey continue line indicates  $\overline{w}$ .



**Figure S2** The level of selection strength (s) for genotypes with common alleles (i.e., with frequencies of over 5%) after 10,000 generations as a function of gene flow for three different total population sizes (N) and n > 1. Standard errors are small (s 0.03) and omitted for clarity. The black symbols indicate the results for populations with random drift whereas the white symbols indicate those without. The letter s on the s-axis indicates the results for single-deme populations. Only combinations of s, s and s are shown for with least 10 replicates were found.

## File S1

## **Spatial Selection Model**

 $A vailable\ for\ download\ at\ www.genetics.org/lookup/suppl/doi:10.1534/genetics.113.149781/-/DC1.$