Correction


The evolution of migration in a seasonal environment

Cortland K. Griswold, Caz M. Taylor and D. Ryan Norris

There was an error generating figure 3c,d. Below is the correct figure for the parameter values that were stated in the original paper. The corrected figures show that, in the shared-non-breeding case, the resident allele does not invade a population that is fixed for the migratory allele when \( c \approx 0.85 \) and when \( d \approx 0.7 \). It was also incorrectly stated in the caption of figure 3 and at the end of §3e in the main text (p. 2716) that when \( x = 1 \), the population is completely migratory and when \( x = 0.5 \), the population is always partially migratory. When partial migration is defined as the condition under which the resident allele counter invades a population that is fixed for the migratory allele, the correct statement is that for \( x = 1 \) the resident allele can invade and for \( x = 0.5 \), the resident allele cannot invade.

The reason that the resident allele does not counter invade when \( x = 0.85 \) and when \( x = 0.7 \) is that \( Aa \) individuals typically mate with \( AA \) individuals such that most offspring are heterozygous and there is not the degree of inbreeding that was seen for the invasion of the migratory allele in the shared-non-breeding case. Additionally, in the population fixed for the migratory allele there are resident \( AA \) individuals at equilibrium. These resident \( AA \) individuals cause density-dependent effects on birth for the mutant resident allele.

Further analysis suggests that our counter-invasion approach is too strict and does not include all of the parameter space that is partially migratory in the shared-non-breeding case. In particular, it does not include parameter values where the resident allele will persist upon invasion of the migratory allele, but will not invade a population fixed for the migratory allele. Numerical simulations of the full model suggest that the population can be partially migratory at equilibrium when \( x \leq 1 \) and the main conclusions discussed on p. 2718 still hold for the shared-non-breeding case.