



Figure S5 Invasion probability of A_1 as a function of the migration rate. Panels are for varying selective advantage a and continental frequency q_c of the beneficial background allele B_1 . Invasion probabilities are shown conditional on initial occurrence of A_1 on background B_1 (blue), on background B_2 (red), and as a weighted average across the two backgrounds (black). Solid curves show exact numerical solutions to the branching process, whereas thick dashed curves show the analytical approximations valid for weak evolutionary forces and a slightly supercritical branching process (see section 4 of File S1, and Eqs. 7–9 in File S5). In all panels, $b = 0.04$ and $r = 0.01$. The selective advantage a of A_1 increases from left to right, taking values of $a = 0.01$ in panels (A), (D), (G), (J), $a = 0.02$ in panels (B), (E), (H), (K), and $a = 0.03$ in panels (C), (F), (I) and (L). The continental frequency q_c of B_1 increases from top to bottom, taking values of $q_c = 0$ in panels (A)–(C), $q_c = 0.2$ in panels (D)–(F), $q_c = 0.5$ in panels (G)–(I), and $q_c = 0.8$ in panels (J)–(L).