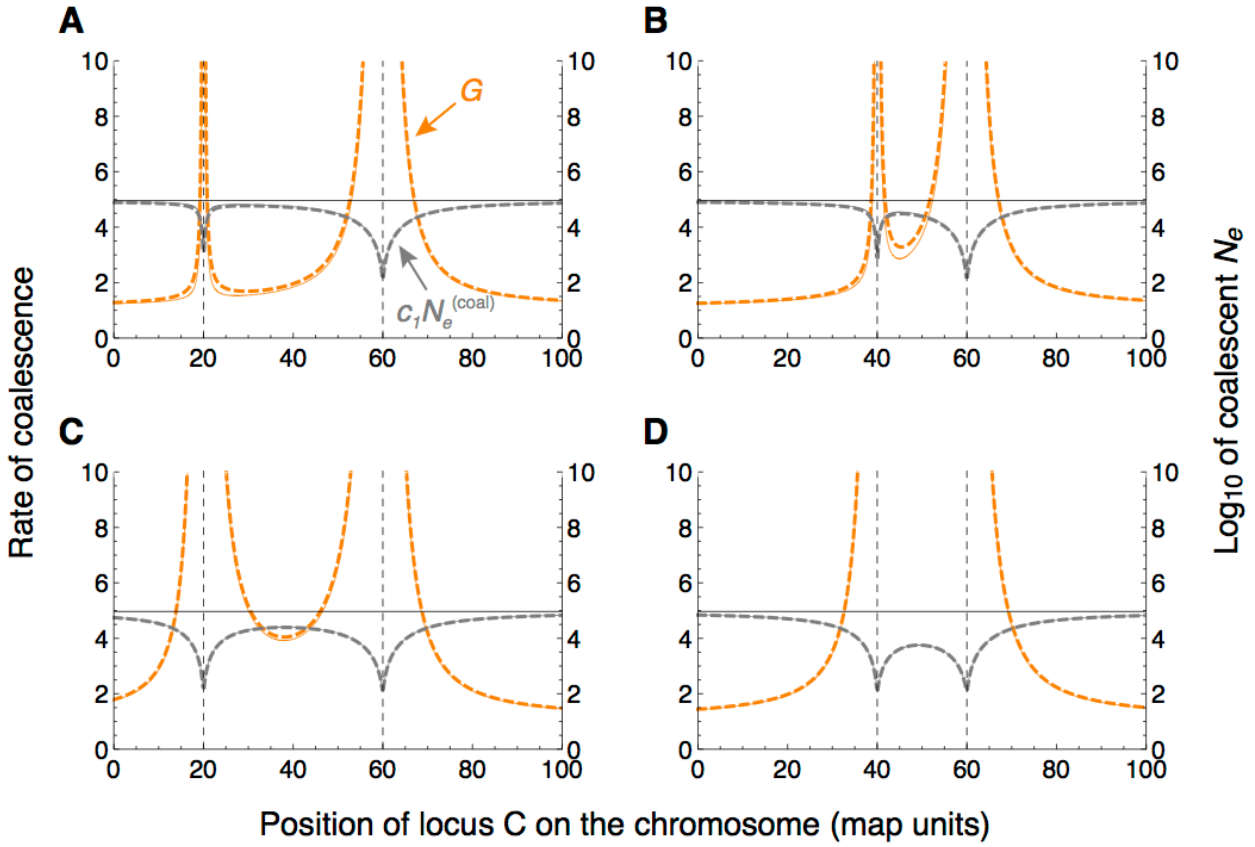

Figure S20 Effect on neutral coalescence of linkage to two sites at migration–selection balance. The rate of coalescence G (orange, see Eq. 25) and the coalescent effective size of the island population, $c_1\bar{N}/G$, are given as a function of the position (in map units) of the neutral locus C. Solid and thick dashed curves are for values computed using the exact and approximate (Eq. 23) effective migration rate, respectively (they overlap almost completely). One map unit (centimorgan) corresponds to a recombination rate of $r = 0.01$ and the position of the sites under selection is indicated by vertical dashed lines. The total population size is $\bar{N} = 10^8$, the fraction of the island is $N_1/\bar{N} = c_1 = 0.01$ and the selection coefficient at locus B (position 60) is $b = 0.4$. (A) and (B) The migration rate to the island is of the same order of magnitude as selection at locus A: $a = 0.02$, $m_1 = 0.024$. (C) and (D) Immigration is weak compared to selection at locus A: $a = 0.2$, $m_1 = 0.024$. Throughout, $m_1/m_2 = c_2/c_1 = (1 - c_1)/c_1$, so actual migration is conservative (Wakeley 2009, p. 194). The horizontal black line gives the baseline-effective population size at the neutral locus in the absence of linked selection. For alternative parameter combinations, see File S9.