

Figure S4 Comparing the performance of FastEPRR under the population bottleneck model with fixed S=52 (A) and  $\xi_2'=5, \xi_x'=37$  (B). We assumed n=100, the duration of bottleneck  $t_1=0.01$ , the time of bottleneck ended  $t_0=0.001$ , and  $N_0/N_1=100$ , where  $N_0$  is the effective population size before and after the bottleneck,  $N_1$  the effective population size during the bottleneck, and the time is scaled so that one unit represents  $4N_0$  generations.