Figure S1 Joint density of the frequency M of the most frequent allele and F_{ST} in the island migration model with $K = 6$ subpopulations, for different scaled migration rates $4Nm$ and mutation rates $4N\mu$. The simulation procedure and figure design follow Figure 2.

Figure S2 Joint density of the frequency M of the most frequent allele and F_{ST} in the island migration model with $K = 40$ subpopulations, for different scaled migration rates $4Nm$ and mutation rates $4N\mu$. The simulation procedure and figure design follow Figure 2.
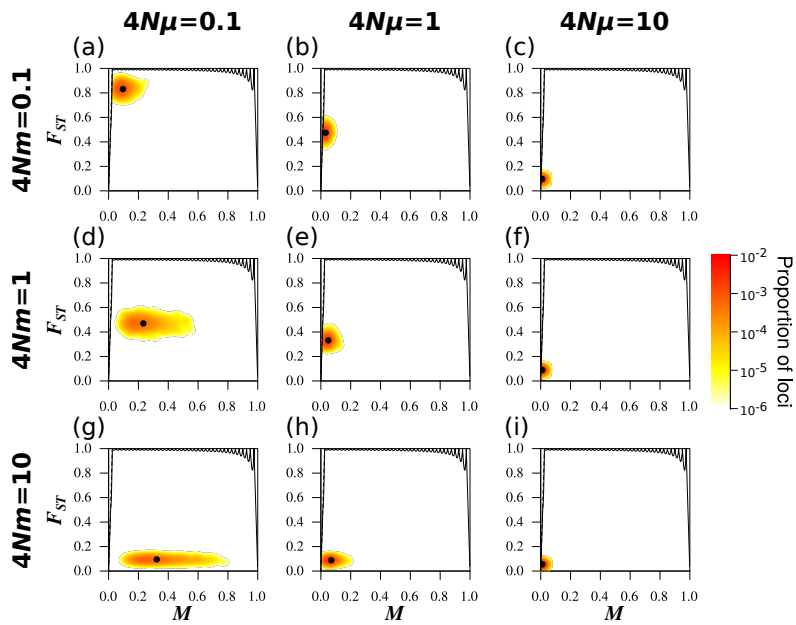
Supplementary File S1: `MS` commands

We applied `MS`, specifying the scaled mutation and migration parameters. We performed the simulations for $K = 2$, $K = 6$, and $K = 40$ subpopulations. For each command, we replace x by the desired $4N\mu$ value and y by the desired $4Nm$ value.

$K = 2$

```
./ms 200 1000 -t x -I 2 100 100 y
```

$K = 6$

```
./ms 600 1000 -t x -I 6 100 100 100 100 100 100 y
```

$K = 40$

```
./ms 4000 1000 -t x -I 40 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100
     100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 y
```