

SUPPLEMENTAL TABLES

Table S1 Medians (5th, 95th percentiles) of the estimates of migration rate and effective population size using genotype data simulated under the infinite island model at different values of migration rate, m , and effective population size, N , based on 400 replicate simulations for each pair of model migration rate and effective population size parameters for dioecious and monoecious model populations.

Parameter Estimates									
Median (5th Percentile, 95th Percentile)									
Parameter		Dioecious Populations				Monoecious Populations			
Values									
N	m	\hat{m}		\hat{N}		\hat{m}		\hat{N}	
10	0.02	0.019	(0.013, 0.027)	9.91	(7.80, 13.22)	0.019	(0.014, 0.027)	9.73	(8.16, 12.46)
	0.05	0.050	(0.036, 0.064)	9.87	(8.38, 12.24)	0.049	(0.038, 0.062)	9.86	(8.66, 12.02)
	0.10	0.098	(0.076, 0.125)	9.98	(8.57, 12.10)	0.101	(0.079, 0.123)	9.92	(8.67, 11.53)
	0.20	0.200	(0.158, 0.248)	9.96	(8.76, 11.88)	0.199	(0.162, 0.244)	10.05	(8.90, 11.29)
20	0.02	0.019	(0.012, 0.028)	19.62	(15.04, 30.07)	0.019	(0.012, 0.027)	19.78	(15.33, 29.79)

	0.05	0.050 (0.035, 0.067)	19.70 (15.41, 26.41)	0.051 (0.035, 0.066)	19.58 (15.48, 26.91)
	0.10	0.100 (0.068, 0.132)	19.88 (15.95, 27.61)	0.099 (0.073, 0.128)	20.11 (16.38, 25.50)
	0.20	0.202 (0.152, 0.262)	19.77 (16.47, 25.14)	0.199 (0.147, 0.258)	20.04 (16.36, 25.14)
50	0.02	0.019 (0.005, 0.032)	51.39 (30.95, 172.5)	0.019 (0.005, 0.033)	50.90 (30.23, 165.7)
	0.05	0.049 (0.023, 0.079)	50.11 (32.71, 103.3)	0.050 (0.023, 0.076)	49.67 (33.23, 107.9)
	0.10	0.098 (0.053, 0.156)	50.59 (33.93, 91.65)	0.101 (0.052, 0.156)	49.53 (32.80, 91.62)
	0.20	0.194 (0.090, 0.322)	50.18 (33.46, 101.9)	0.200 (0.095, 0.322)	49.66 (34.20, 95.17)

Table S2 Medians (5th, 95th percentiles) of the estimates of mutation rate, migration rate and effective population size using genotype data simulated under the finite island model with the k -allele mutation model at different values of mutation rate, u , migration rate, m , and effective population size, N , based on 400 replicate simulations for each pair of model migration rate and effective population size parameters for dioecious ($u=0.001$, $u=0.0005$, and $u=0.0001$) and monoecious ($u=0.0005$) model populations.

			Parameter Estimates		
			Median (5th Percentile, 95th Percentile)		
Parameter Values			Dioecious Populations: k -allele Mutation Model; $u=0.001$		
N	m	$\hat{u} \times 10^3$	\hat{m}		\hat{N}
10	0.02	0.993 (0.693, 1.343)	0.019 (0.013, 0.027)		9.97 (8.36, 12.53)
	0.05	1.007 (0.707, 1.339)	0.049 (0.037, 0.064)		9.95 (8.56, 11.89)
	0.10	1.001 (0.715, 1.355)	0.099 (0.075, 0.127)		10.02 (8.84, 12.01)
20	0.02	1.003 (0.716, 1.425)	0.201 (0.155, 0.260)		10.02 (8.60, 11.80)
	0.05	1.005 (0.675, 1.348)	0.020 (0.014, 0.026)		20.09 (15.83, 26.87)
	0.10	0.999 (0.682, 1.358)	0.049 (0.037, 0.064)		20.08 (16.47, 26.93)
	0.10	0.988 (0.697, 1.411)	0.098 (0.073, 0.131)		20.10 (16.20, 26.13)

	0.20	1.005 (0.732, 1.371)	0.202 (0.152, 0.257)	19.92 (16.72, 24.95)
50	0.02	0.989 (0.523, 1.507)	0.019 (0.011, 0.029)	50.83 (35.17, 88.58)
	0.05	1.024 (0.560, 1.490)	0.051 (0.028, 0.071)	48.97 (35.46, 85.56)
	0.10	1.002 (0.571, 1.496)	0.101 (0.057, 0.149)	49.94 (35.39, 82.39)
	0.20	0.971 (0.569, 1.524)	0.196 (0.112, 0.305)	50.82 (35.10, 83.54)

Parameter Values

Dioecious Populations: k -allele Mutation Model; $u=0.0005$

N	m	$\hat{u} \times 10^4$	\hat{m}	\hat{N}
10	0.02	4.937 (3.299, 7.462)	0.019 (0.014, 0.028)	10.09 (8.12, 12.76)
	0.05	4.910 (3.217, 7.129)	0.050 (0.036, 0.066)	10.07 (8.33, 12.77)
	0.10	5.004 (3.301, 6.880)	0.099 (0.073, 0.134)	9.98 (8.34, 12.63)
	0.20	5.100 (3.287, 7.125)	0.200 (0.144, 0.270)	9.89 (8.50, 12.52)
20	0.02	5.038 (3.355, 7.123)	0.020 (0.014, 0.026)	19.97 (15.30, 27.83)
	0.05	4.925 (3.302, 7.261)	0.049 (0.035, 0.067)	20.36 (15.86, 27.48)
	0.10	5.063 (3.413, 7.004)	0.102 (0.074, 0.134)	19.68 (15.84, 26.26)
	0.20	4.914 (3.413, 7.067)	0.198 (0.145, 0.265)	19.86 (16.50, 25.72)

50	0.02	5.018 (2.529, 8.093)	0.020 (0.010, 0.030)	49.36 (33.45, 98.02)
	0.05	4.825 (2.659, 7.790)	0.049 (0.027, 0.073)	50.80 (35.54, 87.53)
	0.10	5.169 (2.664, 7.988)	0.103 (0.053, 0.156)	49.07 (34.05, 89.98)
	0.20	5.034 (2.521, 7.748)	0.199 (0.098, 0.314)	49.98 (34.53, 92.92)

Parameter Values

Dioecious Populations: k -allele Mutation Model; $u=0.0001$

N	m	$\hat{u} \times 10^4$	\hat{m}	\hat{N}
10	0.02	0.970 (0.423, 1.677)	0.019 (0.010, 0.028)	9.94 (7.59, 16.63)
	0.05	0.964 (0.462, 1.784)	0.049 (0.027, 0.080)	10.08 (7.22, 15.90)
	0.10	0.969 (0.422, 1.781)	0.099 (0.058, 0.155)	10.10 (7.42, 15.31)
	0.20	0.962 (0.354, 1.734)	0.200 (0.105, 0.327)	9.97 (7.47, 15.78)
20	0.02	0.977 (0.444, 1.610)	0.019 (0.010, 0.030)	19.68 (13.78, 35.61)
	0.05	0.981 (0.448, 1.705)	0.051 (0.024, 0.079)	19.46 (13.41, 39.72)
	0.10	0.959 (0.416, 1.628)	0.099 (0.051, 0.161)	20.34 (13.76, 36.63)
	0.20	1.025 (0.446, 1.824)	0.198 (0.106, 0.339)	19.92 (13.19, 35.27)
50	0.02	0.919 (0.096, 1.809)	0.018 (0.002, 0.034)	53.17 (29.94, 447.1)

0.05	0.960	(0.178, 1.790)	0.049	(0.009, 0.093)	51.28	(29.42, 260.3)
0.10	1.015	(0.227, 1.893)	0.099	(0.023, 0.184)	49.42	(29.29, 193.5)
0.20	0.933	(0.250, 1.736)	0.191	(0.056, 0.374)	51.81	(31.04, 172.7)

Parameter Values

Monoecious Populations: k -allele Mutation Model; $u=0.0005$

N	m	$\hat{u} \times 10^4$	\hat{m}	\hat{N}
10	0.02	4.965 (3.299, 6.878)	0.019 (0.014, 0.026)	10.07 (8.69, 12.34)
	0.05	4.998 (3.319, 7.078)	0.050 (0.037, 0.063)	10.03 (8.69, 11.84)
	0.10	5.043 (3.462, 7.191)	0.101 (0.077, 0.127)	9.95 (8.71, 11.99)
	0.20	5.046 (3.356, 7.129)	0.198 (0.151, 0.260)	10.08 (8.77, 11.84)
20	0.02	4.985 (3.266, 7.065)	0.020 (0.013, 0.027)	19.83 (15.65, 27.23)
	0.05	4.911 (3.406, 6.875)	0.049 (0.037, 0.063)	20.14 (16.32, 26.56)
	0.10	4.989 (3.367, 7.115)	0.101 (0.072, 0.133)	19.73 (16.26, 25.84)
	0.20	4.836 (3.499, 7.004)	0.196 (0.143, 0.266)	20.17 (16.13, 26.19)
50	0.02	5.108 (2.216, 7.818)	0.020 (0.009, 0.030)	49.68 (33.53, 110.1)
	0.05	4.760 (2.513, 7.469)	0.047 (0.026, 0.075)	52.17 (34.65, 93.40)

0.10	4.960 (2.557, 7.631)	0.099 (0.050, 0.151)	50.36 (34.50, 94.46)
0.20	4.863 (2.877, 7.566)	0.201 (0.113, 0.309)	50.55 (35.33, 84.27)

Table S3 Medians (5th, 95th percentiles) of the estimates of mutation rate, migration rate and effective population size using genotype data combined over loci having 4, 8, and 12 alleles simulated under the finite island model with the k -allele mutation model ($u=0.0005$) at different values of migration rate, m , and effective population size, N , based on 400 replicate simulations for each pair of model migration rate and effective population size parameters for dioecious model populations.

Parameter Values			Parameter Estimates		
			Median (5th Percentile, 95th Percentile)		
Parameter Values			Dioecious Populations: k -Allele Mutation Model; $u=0.0005$		
N	m	$\hat{u} \times 10^4$	\hat{m}		\hat{N}
10	0.02	5.016 (3.588, 7.062)	0.020 (0.015, 0.024)		9.90 (8.37, 12.39)
	0.05	4.981 (3.257, 7.204)	0.049 (0.038, 0.061)		10.25 (8.31, 12.52)
	0.10	5.013 (3.401, 7.237)	0.100 (0.078, 0.123)		10.09 (8.67, 12.14)
20	0.02	4.910 (3.194, 7.061)	0.206 (0.155, 0.262)		10.01 (8.35, 12.02)
	0.05	5.026 (3.390, 7.109)	0.020 (0.015, 0.026)		19.44 (15.51, 25.84)
	0.10	5.285 (3.559, 7.418)	0.050 (0.037, 0.063)		19.66 (16.17, 26.39)
	0.10	5.089 (3.214, 7.104)	0.098 (0.070, 0.127)		20.18 (16.08, 27.33)

	0.20	5.121 (3.279, 7.096)	0.195 (0.146, 0.264)	20.15 (16.20, 26.23)
50	0.02	4.957 (2.379, 7.999)	0.018 (0.009, 0.029)	53.50 (34.16, 106.6)
	0.05	5.668 (3.098, 8.570)	0.054 (0.029, 0.080)	45.89 (32.17, 82.82)
	0.10	5.089 (2.725, 7.950)	0.096 (0.055, 0.142)	51.16 (36.29, 85.76)
	0.20	4.579 (2.402, 7.472)	0.193 (0.096, 0.299)	51.26 (35.46, 93.41)

Table S4 Medians (5th, 95th percentiles) of the estimates of mutation rate, migration rate and effective population size using genotype data simulated under the finite island model with stepwise mutation models (employing either unbounded or bounded ranges in allele lengths; $u=0.0005$) at different values of migration rate, m , and effective population size, N , based on 400 replicate simulations for each pair of model migration rate and effective population size parameters for dioecious model populations.

Parameter Values		Parameter Estimates		
		Median (5th Percentile, 95th Percentile)		
		Dioecious Populations: Unbounded Stepwise Mutation Model; $u=0.0005$		
N	m	$\hat{u} \times 10^4$	\hat{m}	\hat{N}
10	0.02	3.712 (2.619, 5.420)	0.020 (0.014, 0.028)	10.00 (8.02, 13.15)
	0.05	3.967 (2.778, 5.719)	0.049 (0.036, 0.067)	9.90 (8.21, 12.62)
	0.10	4.062 (2.839, 5.709)	0.100 (0.073, 0.130)	10.06 (8.38, 12.94)
20	0.02	4.189 (2.862, 6.108)	0.197 (0.152, 0.268)	10.06 (8.36, 12.26)
	0.05	3.600 (2.385, 4.965)	0.020 (0.013, 0.028)	19.79 (15.21, 28.11)
	0.10	3.619 (2.477, 5.082)	0.050 (0.034, 0.066)	20.25 (15.75, 27.49)
	0.10	3.782 (2.431, 5.253)	0.100 (0.068, 0.139)	19.79 (15.37, 27.77)

	0.20	3.798 (2.431, 5.489)	0.202 (0.136, 0.278)	19.91 (15.87, 28.06)
50	0.02	2.898 (1.316, 4.757)	0.020 (0.009, 0.031)	51.23 (32.43, 107.5)
	0.05	2.987 (1.256, 4.635)	0.050 (0.021, 0.081)	50.22 (32.39, 107.9)
	0.10	2.989 (1.551, 4.710)	0.099 (0.050, 0.157)	49.99 (33.79, 97.39)
	0.20	3.066 (1.492, 4.841)	0.198 (0.092, 0.333)	50.63 (33.15, 108.2)

Parameter Values

Dioecious Populations: Bounded Stepwise Mutation Model; $u=0.0005$

N	m	$\hat{u} \times 10^4$	\hat{m}	\hat{N}
10	0.02	3.409 (2.254, 5.292)	0.020 (0.013, 0.027)	9.95 (7.88, 13.48)
	0.05	3.629 (2.416, 5.248)	0.050 (0.036, 0.068)	9.94 (8.25, 12.93)
	0.10	3.567 (2.287, 5.382)	0.098 (0.070, 0.132)	10.12 (8.38, 12.67)
	0.20	3.731 (2.335, 5.678)	0.202 (0.145, 0.264)	9.97 (8.31, 12.78)
20	0.02	3.286 (1.967, 4.810)	0.020 (0.013, 0.029)	19.73 (14.78, 30.14)
	0.05	3.286 (2.003, 4.862)	0.049 (0.032, 0.069)	20.22 (15.63, 30.07)
	0.10	3.275 (2.040, 4.765)	0.098 (0.067, 0.131)	20.50 (16.32, 28.28)
	0.20	3.306 (1.968, 5.042)	0.197 (0.129, 0.286)	20.22 (15.31, 29.01)

50	0.02	2.652 (1.183, 4.584)	0.019 (0.008, 0.032)	53.26 (32.71, 119.4)
	0.05	2.913 (1.302, 4.879)	0.049 (0.022, 0.079)	50.76 (32.76, 107.3)
	0.10	2.870 (1.335, 4.794)	0.099 (0.046, 0.170)	49.30 (30.98, 106.0)
	0.20	2.861 (1.224, 4.730)	0.203 (0.092, 0.327)	50.36 (33.12, 103.7)
