

Rate parameter		Set 1			Set 2		
		Fast trans.	Fast samp.	Both	Fast trans.	Fast samp.	Both
Transmission	$\beta_0$	0.005	0.005	0.005	$7.5 \times 10^{-4}$	$7.5 \times 10^{-4}$	$7.5 \times 10^{-4}$
	$\beta_1$	0.135	0.045	0.135	0.0135	$6.75 \times 10^{-3}$	0.0135
Migration	$m$	0.05	0.05	0.05	0.05	0.05	0.05
Mortality	$\mu$	0.01	0.01	0.01	1.0	1.0	1.0
Sampling	$\psi_0$	0.5	0.5	0.5	1.0	1.0	1.0
	$\psi_1$	0.5	2.5	2.5	1.0	2.0	2.0

Table S1: Parameter values used for birth-death SIR model simulations.