Figure S1 Autocorrelation (ACF) and partial autocorrelation (PACF) functions. Mosquito abundance / house (**A**) ACF (**B**) PACF; Maximum Temperature (**C**) ACF (**D**) PACF.
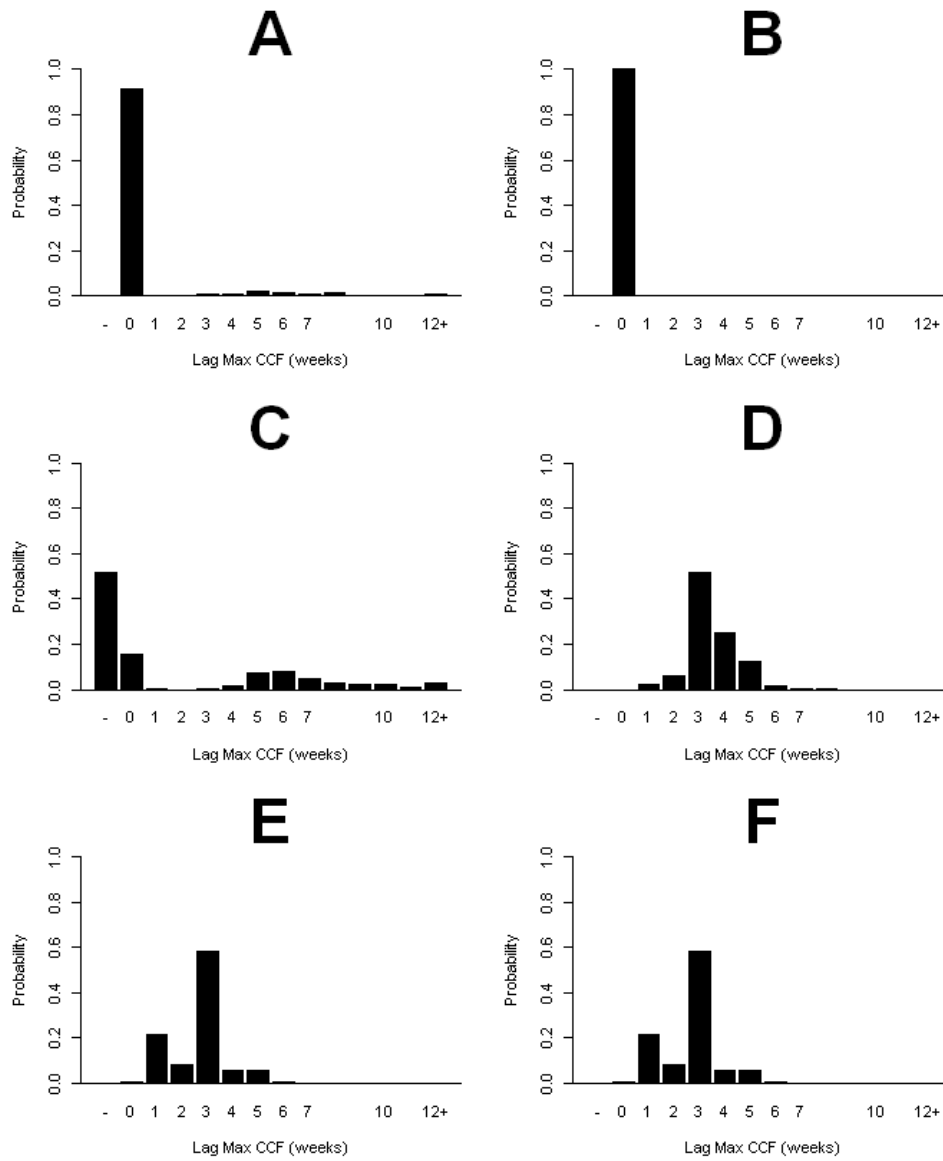
Figure S2 Probability for the maximum cross correlation lags (Lag Max CCF) between the environment and mosquito abundance for simulations assuming stochastic environments (**A**) Case 1 (**B**) Case 3 (**C**) Case 4 (**D**) Case 5 (**E**) Case 7 (**F**) Case 8. Cases are presented in Table 3 and explained in the model section. In the x axis of all panels "-" denotes all negative lags and "12+" lag 12 and higher.
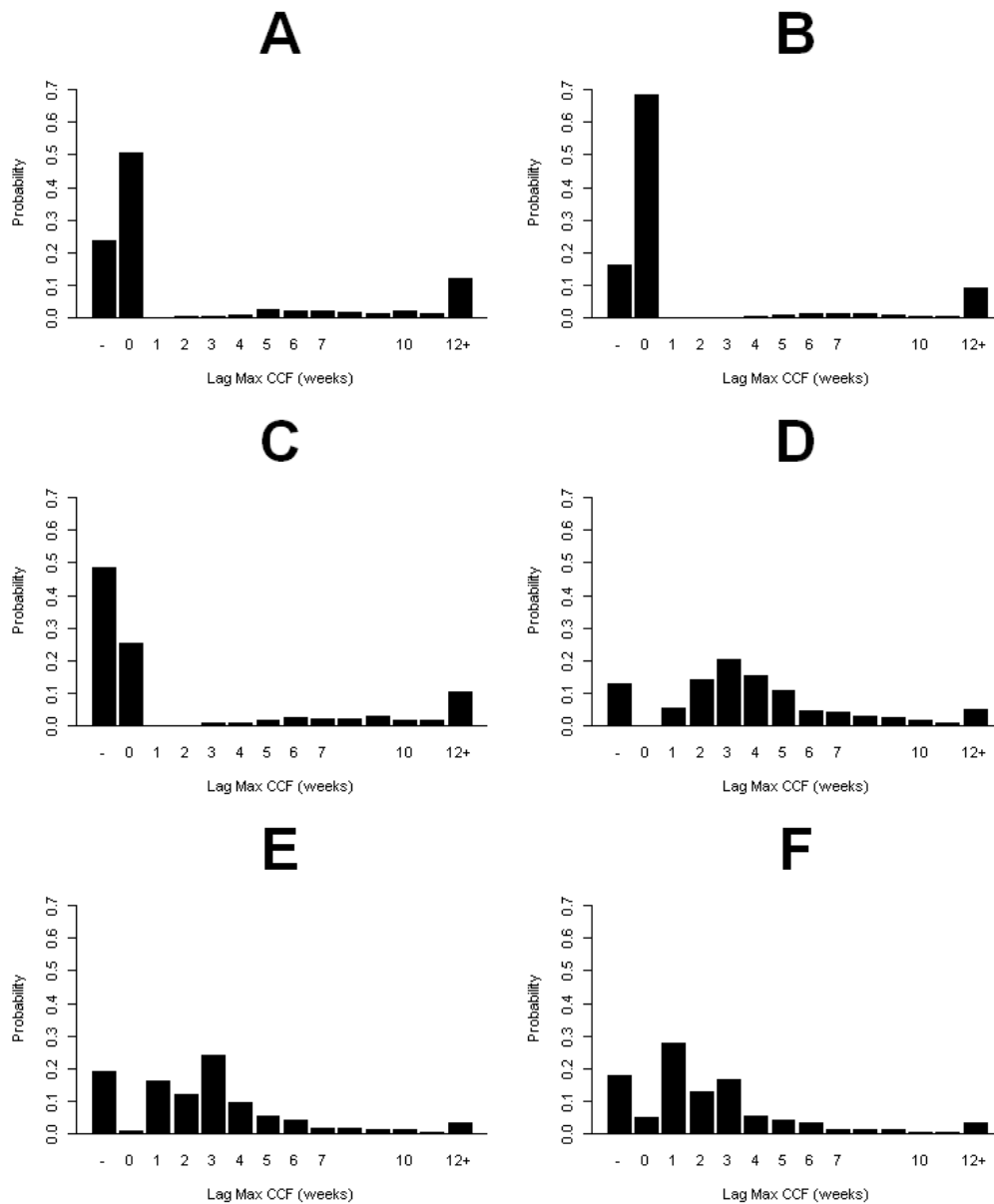
Figure S3 Probability for the maximum cross correlation lags (Lag Max CCF) between the environment and mosquito abundance for simulations assuming stochastic environments and additional environmental stochasticity on mosquito abundance (**A**) Case 1 (**B**) Case 3 (**C**) Case 4 (**D**) Case 5 (**E**) Case 7 (**F**) Case 8. Cases are presented in Table 3 and explained in the model section. In the x axis of all panels "-" denotes all negative lags and "12+" lag 12 and higher.

Table S1 Parameter estimates and confidence limits for the temperature threshold forced model for Thailand (from Chaves et al (2012))

Parameter	Estimate	L 95% CL	U 95% CL	z	P-value
$\hat{s}$	0.317	0.294	0.341	3.9281	8.56e-05*
$\widehat{\lambda p}$	1.71	1.60	1.83	4.2445	2.19e-05*
$\hat{\theta}$	0.505	0.476	0.533	5.1048	3.31e-07*
$\hat{\alpha}$	2.25	2.07	2.41	2.2806	0.02257*
$\hat{T}_c$	34.03	33.88	34.18	65.6596	< 1e-15*
$\widehat{\sigma^2_{envs}}$	0.181				