# Additional File 1

Supplementary Table 1: Poisson and negative binomial model fits for host distributions at households. For the negative binomial fits, r corresponds to the number of successes and p corresponds to the probability of success. We show that, where fit, the negative binomial distribution was preferred to the Poisson distribution. The parameter maximum likelihood estimates (MLE) for each distribution are reported along with the Akaike information criterion (AIC) for model comparison. Specifically, the difference in AIC values between the Poisson and negative binomial models (ΔAIC) indicates the level of support for the Poisson model fit relative to the negative binomial model fit. As a general rule, a larger difference indicates that the Poisson model is less plausible compared to the negative binomial model. A ΔAIC≤ 2 corresponds to the Poisson model having substantial support relative to the negative binomial model, while a ΔAIC> 10 indicates no support for the Poisson model [1]. MLE estimates are reported to 3 d.p. AIC and ΔAIC values are given to 1 d.p.

Host type	Poisson fit		Negative binomial fit			
	λ MLE	AIC	r MLE	p MLE	AIC	ΔAIC
Adults and adolescents	3.821	546.7	-	-	-	-
Children	0.800	351.7	2.081	0.722	347.2	4.4
Dogs	0.814	376.6	1.206	0.597	353.1	23.4
Chickens	5.850	1816.6	0.262	0.043	712.5	1104.1
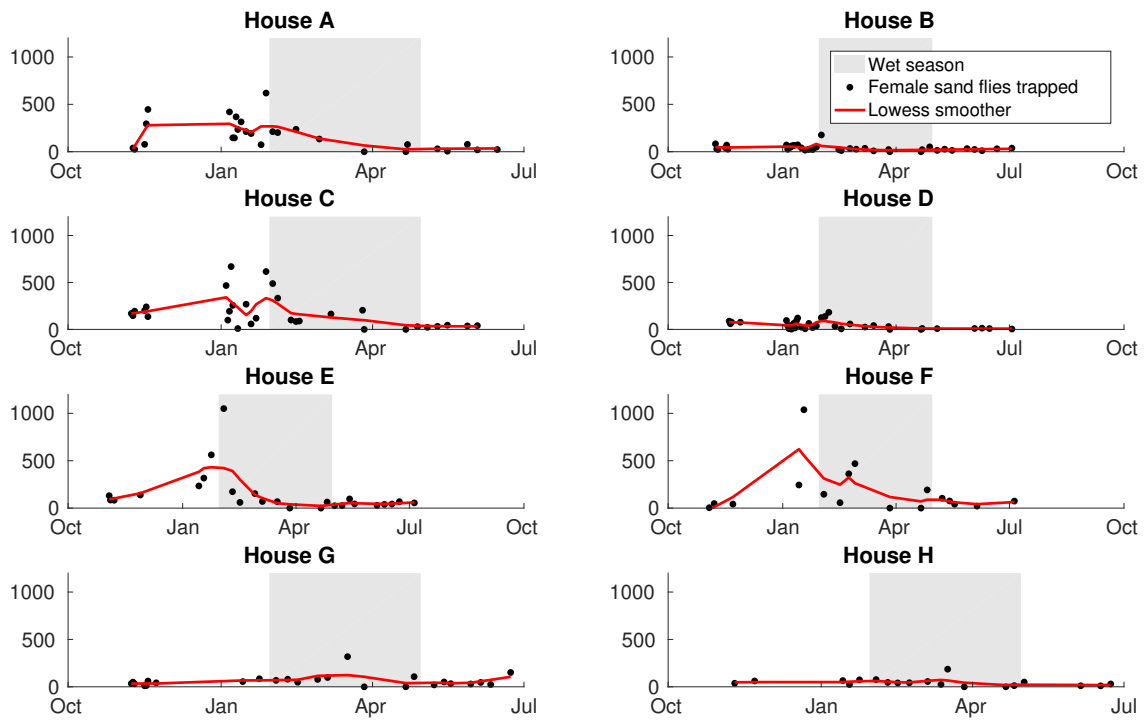
Supplementary Figure 1: The seasonality of sand fly abundance using data from the Marajó region. Data on the number of female sand flies trapped in a night in each of the eight household sites (black dots) with a smooth trend line fitted using a Lowess smoother (red line). These households each show similar seasonal patterns.
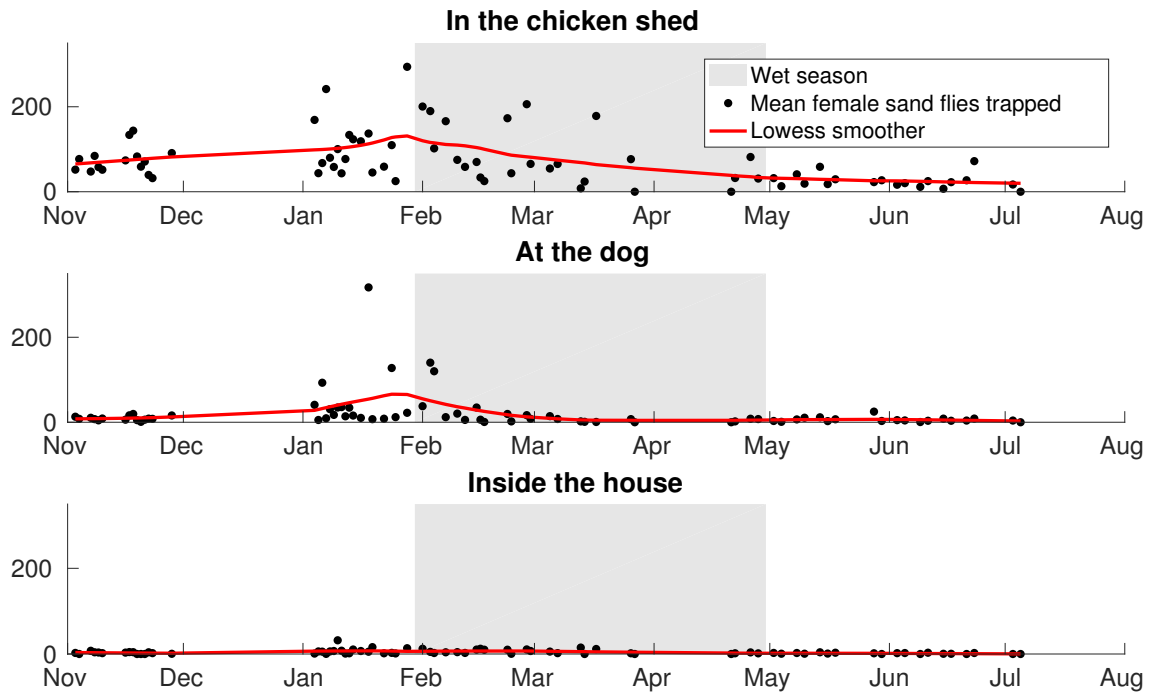
Supplementary Figure 2: The seasonality of sand fly abundance using data from the Marajó region. Data on the number of female sand flies trapped in a night at three locations within the trapping sites, presented as the mean over all sites (black dots) with a smooth trend line fitted using a Lowess smoother (red line). The three locations each show similar seasonal patterns.

References

[1] Burnham, K.P., Anderson, D.R.: Model Selection and Multimodel Inference: A Practical Information-Theoretic Approach. Springer New York, NY, 2004.