

Supplemental figures and tables for “Local tree cover predicts mosquito species richness and disease vector presence in a tropical countryside landscape”

August 31, 2024

Figure S1. Species accumulation curves for each land use type were not asymptotic. Gray shading shows 95% confidence intervals.

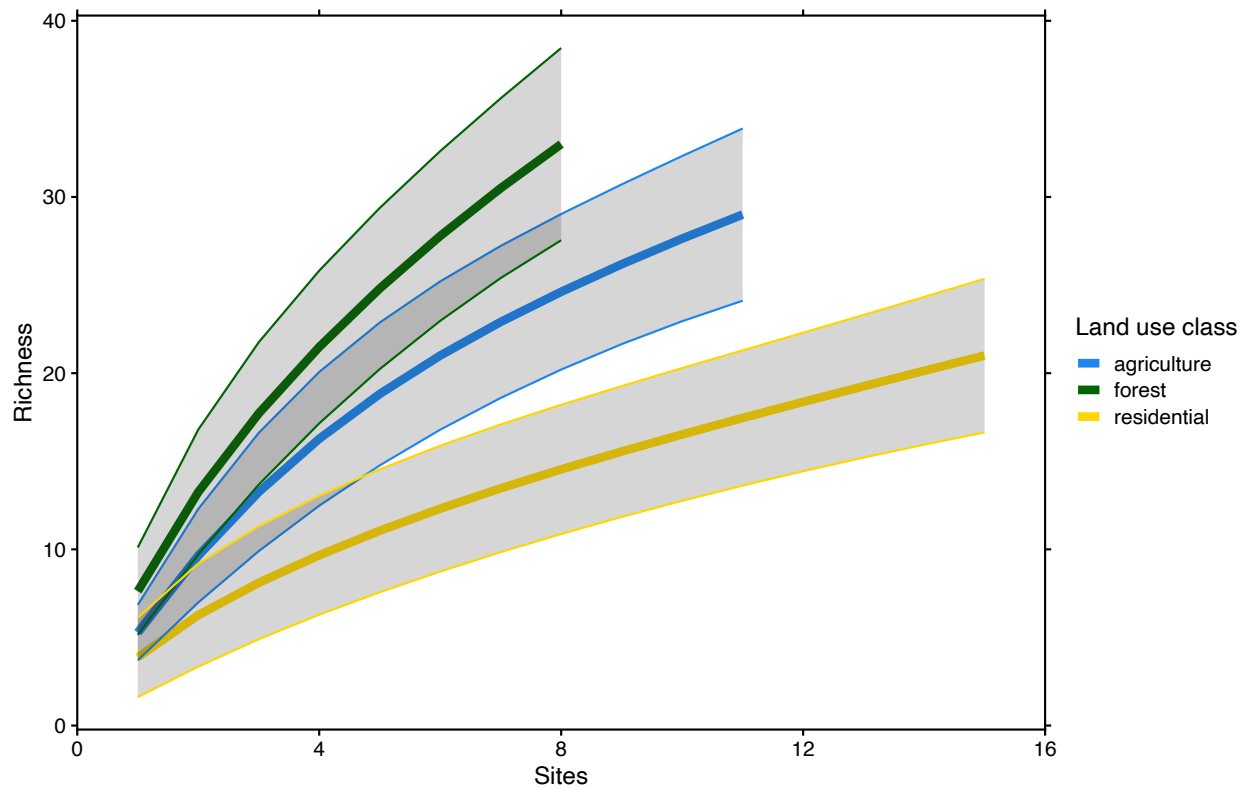


Figure S2. At the 1000 m spatial scale, species richness increased with percent tree cover only where mean annual temperatures were low to intermediate. In the warmest climates surveyed, species richness was low even at high tree cover. Points representing each survey site are colored by mean annual temperature. The blue regression line shows the results of a negative binomial GLM modeling the effect of tree cover on species richness in cooler climates (mean annual temperature ≤ 24 °C; estimate = 2.25×10^{-2} , SE = 6.92×10^{-3} , Z = 3.26, p = 1.13×10^{-3}), and the red line shows the results for warmer climates (mean annual temperature > 24 °C; - estimate = -3.7×10^{-2} , SE = 1.46×10^{-2} , Z = -2.53, p = 1.13×10^{-2}).

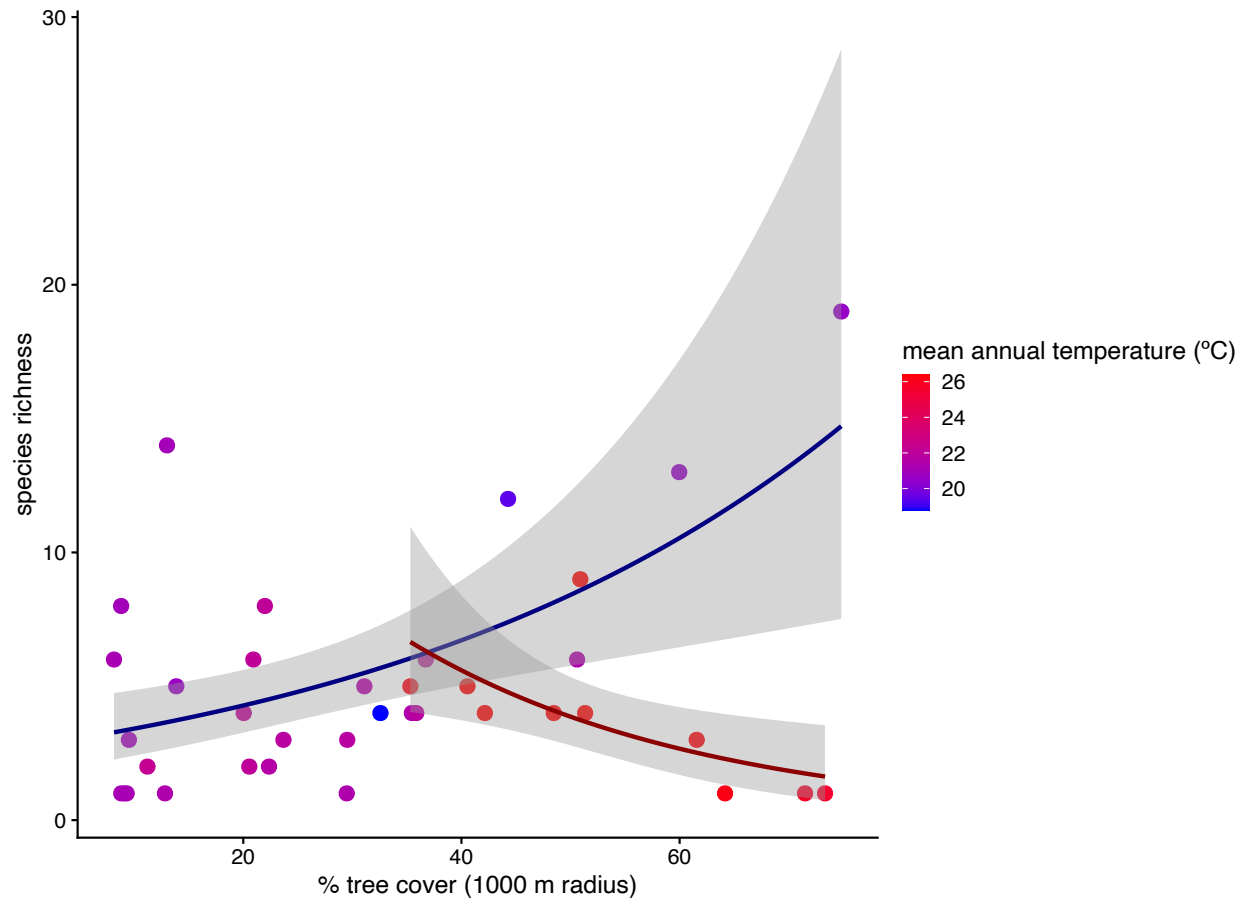


Figure S3. At the 1000 m spatial scale, *Ae. albopictus* occurrence is negatively correlated with tree cover, and positively correlated with mean annual temperature.

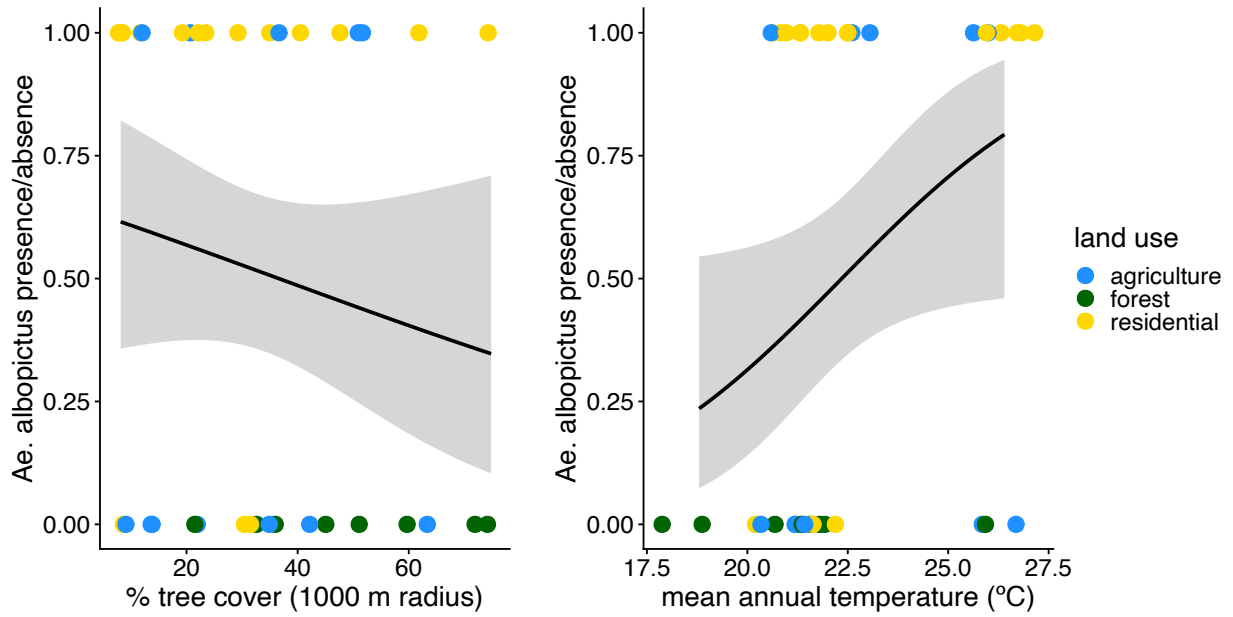


Figure S4. NMDS ordination plot of community similarity with points labeled by land use subtype. Red boxes indicate the four sites that were sampled only once, all of which were located in the geographically distinct Pavones district.

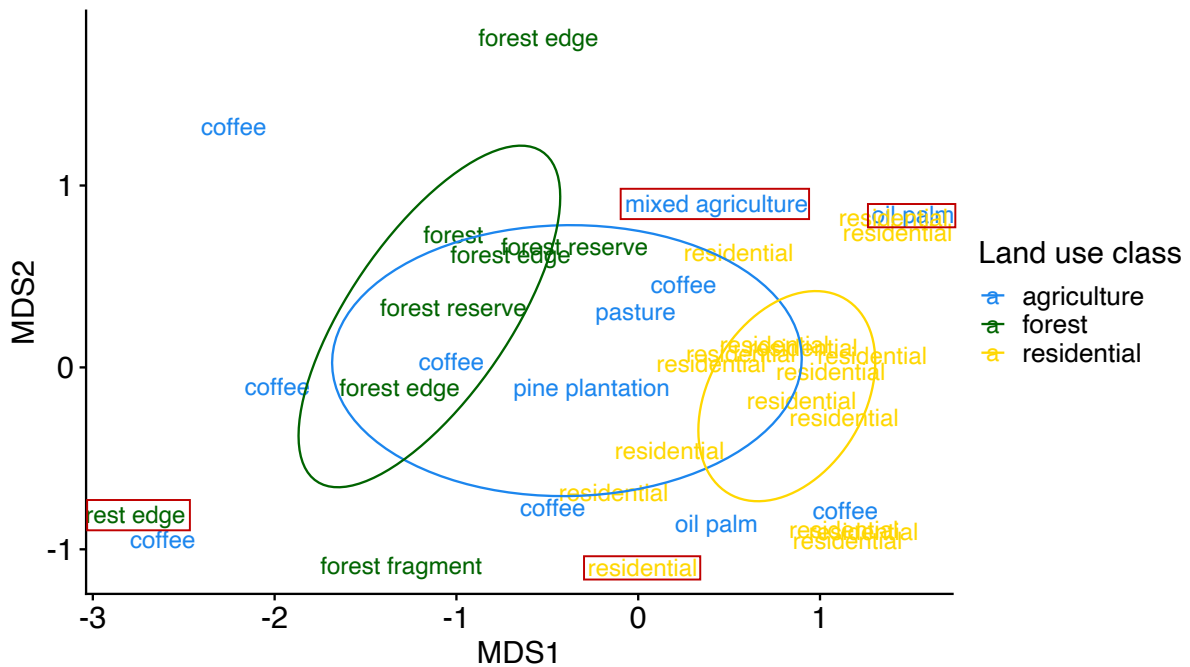


Table S1. Field survey site collection details, grouped by canton, district, and land use type.

Canton	District	Land use	Site	Collection dates (2017)	Total mosquitoes sampled	Morphologically identified <i>Aedes albopictus</i>		
Corredores	Ciudad Neily	agriculture	OP03B	6/30, 7/20	32	16		
			OP03	6/30, 7/20	29	12		
		residential	CN04	6/30, 7/20	210	1		
			CN06	6/30, 7/20	12	5		
			OP01	6/30, 7/20	11	1		
			CN03	6/30, 7/20	5	3		
			Total = 299		Total = 38			
		Coto Brus	Copabuena	agriculture	SAFR	7/3, 7/11	7	0
					ELPU	6/26, 7/11	5	0
residential	CB03			6/28, 7/10	37	16		
	CB04			7/28, 8/3	20	2		
	CB05			7/10, 8/3	5	2		
	CB01			6/28, 7/10	4	2		
	CB02			6/28, 7/10	4	0		
	Total = 82			Total = 22				
Sabalito	agriculture			LOAN	6/26, 8/1	204	0	
				VALE	6/27, 7/24	7	0	
			FELO	6/27, 7/24	4	2		
			SATE	6/22, 7/13	4	2		
	forest		QUST	6/22, 7/13	3	0		
	residential		SL02	7/22, 7/7	26	14		
			SL01	7/22, 7/7	20	4		
	Total = 268		Total = 22					
	San Vito		agriculture	PINO	6/21, 7/13	14	6	
				ISLA	6/21, 7/13	2	0	
forest			MELI	6/25, 7/31	244	0		

			RIJA	6/25, 7/31	172	0
			GAPA	6/23, 7/18	97	0
			FRAG5	6/20, 7/18	20	0
			FILA	6/20, 7/17	16	0
			GABO	6/23, 7/18	12	0
		residential	SV04	7/3, 7/25	12	6
			SV06	6/20, 7/25	12	0
			SV02	6/21, 7/3	8	1
			SV05	6/21, 7/3	7	1
			SV01	6/23, 7/3	3	0
				<i>Total =</i>	<i>619</i>	<i>Total = 14</i>
Golfito	<i>Pavones</i>	agriculture	PV02	7/5	2	0
			PV04	7/5	2	0
		forest	PV05	7/5	1	0
		residential	PV01	7/5	11	3
				<i>Total =</i>	<i>16</i>	<i>Total = 3</i>

Table S2. Details of mosquito taxa present at each survey site, grouped by canton and land use type.

Canton	Land use	Site	Trap nights	OTU	Species
Coto Brus	residential	CB01	2	AA	<i>Aedes albopictus</i>
			2	OTU23	<i>Culex quinquefasciatus</i>
			2	OTU04	<i>Aedes albopictus</i>
		CB04		AA	<i>Aedes albopictus</i>
			2	OTU03	<i>Culex</i> sp. 1
				OTU04	<i>Aedes albopictus</i>
				OTU07	<i>Limatus durhamii</i>
				OTU09	<i>Culex nigripalpus</i>
				OTU11	<i>Aedes albopictus</i>
				OTU22	<i>Culex lactator</i>
				OTU23	<i>Culex quinquefasciatus</i>
				AA	<i>Aedes albopictus</i>
			2	OTU04	<i>Aedes albopictus</i>
			2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			2	OTU07	<i>Limatus durhamii</i>
			2	OTU08	<i>Orthopodomyia</i> sp.
			2	OTU18	<i>Orthopodomyia</i> sp.
			2	OTU19	<i>Orthopodomyia</i> sp.
			2	OTU20	<i>Culex coronator</i>
			2	OTU22	<i>Culex lactator</i>
			2	OTU30	<i>Limatus asulleptus</i>
			2	OTU51	<i>Orthopodomyia</i> sp.
			2	OTU55	<i>Orthopodomyia</i> MBI-02
			2	AA	<i>Aedes albopictus</i>
		SL01	2	OTU04	<i>Aedes albopictus</i>
				OTU11	<i>Aedes albopictus</i>
				OTU23	<i>Culex quinquefasciatus</i>
				OTU26	<i>Culex interrogator</i>
				OTU34	<i>Culex mollis</i>
				AA	<i>Aedes albopictus</i>
		SL02	2	OTU23	<i>Culex quinquefasciatus</i>
				AA	<i>Aedes albopictus</i>
		SV01	2	OTU23	<i>Culex quinquefasciatus</i>
		SV02	2	OTU04	<i>Aedes albopictus</i>
				OTU22	<i>Culex lactator</i>
				OTU23	<i>Culex quinquefasciatus</i>

			OTU57	<i>Culex quinquefasciatus</i>
			AA	<i>Aedes albopictus</i>
	SV04	2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU07	<i>Limatus durhamii</i>
			OTU23	<i>Culex quinquefasciatus</i>
			OTU30	<i>Limatus asulleptus</i>
			OTU33	<i>Wyeomyia aporonoma</i>
			OTU40	<i>Wyeomyia undulata</i>
			OTU72	<i>Coquillettidia nigricans</i>
			AA	<i>Aedes albopictus</i>
	SV05	2	OTU12	<i>Wyeomyia complosa</i>
			OTU23	<i>Culex quinquefasciatus</i>
			AA	<i>Aedes albopictus</i>
	SV06	2	OTU07	<i>Limatus durhamii</i>
			OTU09	<i>Culex nigripalpus</i>
			OTU22	<i>Culex lactator</i>
			OTU23	<i>Culex quinquefasciatus</i>
			OTU72	<i>Coquillettidia nigricans</i>
agriculture	ELPU	2	OTU03	<i>Culex</i> sp. 1
			OTU15	<i>Trichoprosopon digitatum</i>
			OTU20	<i>Culex coronator</i>
			OTU35	<i>Trichoprosopon pallidiventer</i>
	ISLA	2	OTU65	unidentified Culicidae 4
			OTU15	<i>Trichoprosopon digitatum</i>
			OTU17	<i>Haemagogus</i> sp.
	LOAN	2	OTU27	<i>Haemagogus</i> sp.
			OTU03	<i>Culex</i> sp. 1
			OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU07	<i>Limatus durhamii</i>
			OTU09	<i>Culex nigripalpus</i>
			OTU12	<i>Wyeomyia complosa</i>
			OTU13	<i>Aedes allotecnion</i>
			OTU14	<i>Wyeomyia</i> sp. RCH-1
			OTU15	<i>Trichoprosopon digitatum</i>
			OTU21	<i>Psorophora ferox</i>
			OTU30	<i>Limatus asulleptus</i>
			OTU41	<i>Aedes</i> sp. 1

			OTU45	<i>Psorophora funiculus</i>
			OTU52	<i>Wyeomyia</i> sp. 2
			OTU54	<i>Aedes allotecnnon</i>
			OTU64	unidentified Culicidae 3
	FELO	2	AA	<i>Aedes albopictus</i>
	PINO	2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU12	<i>Wyeomyia complosa</i>
			OTU30	<i>Limatus asulleptus</i>
			AA	<i>Aedes albopictus</i>
			AG	<i>Aedes aegypti</i>
	SAFR	2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU23	<i>Culex quinquefasciatus</i>
	SATE	2	OTU01	<i>Aedes angustivittatus</i>
			OTU04	<i>Aedes albopictus</i>
			OTU07	<i>Limatus durhamii</i>
			OTU14	<i>Wyeomyia</i> sp. RCH-1
			OTU15	<i>Trichoprosopon digitatum</i>
			OTU17	<i>Haemagogus</i> sp.
			OTU27	<i>Haemagogus</i> sp.
			AA	<i>Aedes albopictus</i>
	VALE	2	OTU14	<i>Wyeomyia</i> sp. RCH-1
			OTU21	<i>Psorophora ferox</i>
			OTU46	<i>Haemagogus janthinomys</i>
			OTU48	<i>Psorophora ferox</i>
			OTU62	<i>Aedes infirmatus</i>
forest	FILA	2	OTU03	<i>Culex</i> sp. 1
			OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU10	<i>Culex restrictor</i>
			OTU12	<i>Wyeomyia complosa</i>
			OTU13	<i>Aedes allotecnnon</i>
			OTU31	<i>Aedes trivittatus</i>
			OTU41	<i>Aedes</i> sp. 1
			OTU42	<i>Culex</i> sp. 2
			OTU59	<i>Aedes</i> sp. 1
			OTU61	unidentified Culicidae 2

FRAG5	2	OTU65	unidentified Culicidae 4
		AG	<i>Aedes aegypti</i>
		OTU05	<i>Wyeomyia adelpha/guatemala</i>
		OTU06	<i>Culex nigripalpus</i>
		OTU12	<i>Wyeomyia complosa</i>
GABO	2	OTU46	<i>Haemagogus janthinomys</i>
		OTU05	<i>Wyeomyia adelpha/guatemala</i>
		OTU06	<i>Culex nigripalpus</i>
		OTU15	<i>Trichoprosopon digitatum</i>
		OTU35	<i>Trichoprosopon pallidiventer</i>
GAPA	2	OTU47	<i>Trichoprosopon sp. 3 DJS-2020</i>
		OTU58	<i>Trichoprosopon sp.</i>
		OTU12	<i>Wyeomyia complosa</i>
		OTU13	<i>Aedes allotecnnon</i>
		OTU47	<i>Trichoprosopon sp. 3 DJS-2020</i>
MELI	2	OTU50	<i>Aedes sexlineatus</i>
		OTU01	<i>Aedes angustivittatus</i>
		OTU03	<i>Culex sp. 1</i>
		OTU05	<i>Wyeomyia adelpha/guatemala</i>
		OTU06	<i>Culex nigripalpus</i>
		OTU10	<i>Culex restrictor</i>
		OTU12	<i>Wyeomyia complosa</i>
		OTU13	<i>Aedes allotecnnon</i>
		OTU20	<i>Culex coronator</i>
		OTU27	<i>Haemagogus sp.</i>
		OTU28	<i>Culex erythrothorax</i>
		OTU29	unidentified Culicidae 1
		OTU30	<i>Limatus asulleptus</i>
		OTU34	<i>Culex mollis</i>
		OTU35	<i>Trichoprosopon pallidiventer</i>
		OTU41	<i>Aedes sp. 1</i>
		OTU43	<i>Aedes angustivittatus</i>
		OTU48	<i>Psorophora ferox</i>
		OTU51	<i>Orthopodomyia sp.</i>
		OTU66	<i>Wyeomyia luteoventralis</i>

			OTU67	<i>Trichoprosopon sp. 5 DJS-2020</i>
	QUST	2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU69	<i>Sabethes undosus</i>
	RIJA	2	OTU05	<i>Wyeomyia adelpha/guatemala</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU09	<i>Culex nigripalpus</i>
			OTU12	<i>Wyeomyia complosa</i>
			OTU13	<i>Aedes allotecnnon</i>
			OTU21	<i>Psorophora ferox</i>
			OTU23	<i>Culex quinquefasciatus</i>
			OTU24	<i>Wyeomyia adelpha/guatemala</i>
			OTU30	<i>Limatus asulleptus</i>
			OTU35	<i>Trichoprosopon pallidiventer</i>
			OTU36	<i>Aedes ferox</i>
			OTU41	<i>Aedes sp. 1</i>
			OTU43	<i>Aedes angustivittatus</i>
			OTU47	<i>Trichoprosopon sp. 3 DJS-2020</i>
			OTU48	<i>Psorophora ferox</i>
			OTU63	<i>Psorophora albipes</i>
Corredores	residential	CN03	2	OTU23 <i>Culex quinquefasciatus</i>
			AA	<i>Aedes albopictus</i>
		CN03	2	AG <i>Aedes aegypti</i>
		CN04	2	OTU04 <i>Aedes albopictus</i>
			OTU06	<i>Culex nigripalpus</i>
			OTU07	<i>Limatus durhamii</i>
			OTU11	<i>Aedes albopictus</i>
			OTU23	<i>Culex quinquefasciatus</i>
			OTU30	<i>Limatus asulleptus</i>
			OTU53	<i>Aedes albopictus</i>
			AA	<i>Aedes albopictus</i>
		CN06	2	AA <i>Aedes albopictus</i>
		OP01	2	OTU06 <i>Culex nigripalpus</i>
			OTU22	<i>Culex lactator</i>
			OTU23	<i>Culex quinquefasciatus</i>
			AA	<i>Aedes albopictus</i>
agriculture		OP03	2	OTU01 <i>Aedes angustivittatus</i>

				OTU06	<i>Culex nigripalpus</i>
				OTU21	<i>Psorophora ferox</i>
				OTU23	<i>Culex quinquefasciatus</i>
				OTU25	<i>Mansonia titillans</i>
				OTU28	<i>Culex erythrothorax</i>
				OTU39	<i>Anopheles albimanus</i>
				OTU66	<i>Wyeomyia luteoventralis</i>
				AA	<i>Aedes albopictus</i>
		OP03B	2	OTU01	<i>Aedes angustivittatus</i>
				OTU07	<i>Limatus durhamii</i>
				OTU40	<i>Wyeomyia undulata</i>
				AA	<i>Aedes albopictus</i>
Golfito	residential	PV01	1	OTU05	<i>Wyeomyia adelpha/guatemala</i>
				OTU25	<i>Mansonia titillans</i>
				OTU28	<i>Culex erythrothorax</i>
				OTU58	<i>Trichoprosopon sp.</i>
				AA	<i>Aedes albopictus</i>
	agriculture	PV02	1	OTU01	<i>Aedes angustivittatus</i>
				OTU07	<i>Limatus durhamii</i>
				OTU23	<i>Culex quinquefasciatus</i>
				OTU35	<i>Trichoprosopon pallidiventer</i>
		PV04	1	OTU23	<i>Culex quinquefasciatus</i>
	forest	PV05	1	OTU15	<i>Trichoprosopon digitatum</i>

Table S3. Number of sites in each land use category where each mosquito species was present.

Species	Agriculture	Forest	Residential	Total
<i>Aedes albopictus</i>	5	0	13	18
<i>Culex quinquefasciatus</i>	4	1	12	17
<i>Culex nigripalpus</i>	4	5	4	13
<i>Wyeomyia adelpha/guatemala</i>	3	6	3	12
<i>Limatus durhamii</i>	3	0	5	9
<i>Wyeomyia complosa</i>	2	5	1	8
<i>Limatus asulleptus</i>	2	2	3	7
<i>Aedes angustivittatus</i>	4	2	0	6
<i>Trichoprosopon digitatum</i>	4	2	0	6
<i>Aedes allotecnion</i>	1	4	0	5
<i>Culex lactator</i>	0	0	5	5
<i>Culex sp. 1</i>	2	2	1	5
<i>Psorophora ferox</i>	3	2	0	5
<i>Trichoprosopon pallidiventer</i>	2	3	0	5
<i>Aedes sp. 1</i>	1	3	0	4
<i>Aedes aegypti</i>	1	1	1	3
<i>Culex coronator</i>	1	1	1	3
<i>Culex erythrothorax</i>	1	1	1	3
<i>Haemagogus sp.</i>	2	1	0	3
<i>Trichoprosopon sp. 3 DJS-2020</i>	0	3	0	3
<i>Wyeomyia sp. RCH-1</i>	3	0	0	3
<i>Coquillettidia nigricans</i>	0	0	2	2
<i>Culex mollis</i>	0	1	1	2
<i>Culex restrictor</i>	0	2	0	2
<i>Haemagogus janthinomys</i>	1	1	0	2
<i>Mansonia titillans</i>	1	0	1	2
<i>Orthopodomyia sp.</i>	0	1	1	2
<i>Trichoprosopon sp. 1</i>	0	1	1	2
<i>unidentified Culicidae 4</i>	1	1	0	2
<i>Wyeomyia luteoventralis</i>	1	1	0	2
<i>Wyeomyia undulata</i>	0	0	1	2
<i>Aedes ferox</i>	0	1	0	1
<i>Aedes infirmatus</i>	1	0	0	1
<i>Aedes sexlineatus</i>	0	1	0	1
<i>Aedes trivittatus</i>	0	1	0	1

<i>Anopheles albimanus</i>	1	0	0	1
<i>Culex interrogator</i>	0	0	1	1
<i>Culex sp. 2</i>	0	1	0	1
<i>Orthopodomyia MBI-02</i>	0	0	1	1
<i>Psorophora albipes</i>	0	1	0	1
<i>Psorophora funiculus</i>	1	0	0	1
<i>Sabethes undosus</i>	0	1	0	1
<i>Trichoprosopon sp. 5 DJS-2020</i>	0	1	0	1
<i>unidentified Culicidae 1</i>	0	1	0	1
<i>unidentified Culicidae 2</i>	0	1	0	1
<i>unidentified Culicidae 3</i>	1	0	0	1
<i>Wyeomyia aporonoma</i>	0	0	1	1
<i>Wyeomyia sp. 2</i>	1	0	0	1

Table S4. Results of generalized linear models estimating the effects of tree cover across spatial scales on species richness. Significant models are highlighted with bold text.

Tree cover radius (m)	Estimated effect	Standard error	Z-value	p-value	AIC
30	3.67 x 10 ⁻³	3.57 x 10 ⁻³	1.03	3.03 x 10 ⁻¹	194.88
40	5.13 x 10 ⁻³	3.72 x 10 ⁻³	1.38	1.77 x 10 ⁻¹	194.10
50	5.50 x 10 ⁻³	3.85 x 10 ⁻³	1.43	1.54 x 10 ⁻¹	193.98
60	6.64 x 10 ⁻³	4.02 x 10 ⁻³	1.65	9.8 x 10 ⁻²	193.24
70	7.21 x 10 ⁻³	4.01 x 10 ⁻³	1.80	7.23 x 10 ⁻²	192.76
80	8.02 x 10 ⁻³	4.13 x 10 ⁻³	1.94	5.24 x 10 ⁻²	192.18
90	8.93 x 10⁻³	4.25 x 10⁻³	2.10	3.58 x 10⁻²	191.45
100	9.13 x 10⁻³	4.30 x 10⁻³	2.12	3.39 x 10⁻²	191.33
110	9.64 x 10⁻³	4.37 x 10⁻³	2.20	2.75 x 10⁻²	190.96
120	1.05 x 10⁻²	4.46 x 10⁻³	2.36	1.84 x 10⁻²	190.24
130	1.06 x 10⁻²	4.47 x 10⁻³	2.37	1.76 x 10⁻²	190.15
140	1.10 x 10⁻²	4.58 x 10⁻³	2.39	1.66 x 10⁻²	190.03
150	1.17 x 10⁻²	4.62 x 10⁻³	2.53	1.16 x 10⁻²	189.40
160	1.20 x 10⁻²	4.67 x 10⁻³	2.58	9.92 x 10⁻³	189.13
170	1.24 x 10⁻²	4.69 x 10⁻³	2.64	8.18 x 10⁻³	188.79
180	1.29 x 10⁻²	4.77 x 10⁻³	2.70	7.01 x 10⁻³	188.53
190	1.30 x 10⁻²	4.83 x 10⁻³	2.69	7.09 x 10⁻³	188.49
200	1.35 x 10⁻²	4.87 x 10⁻³	2.77	5.59 x 10⁻³	188.11
250	1.40 x 10⁻²	5.00 x 10⁻³	2.80	5.08 x 10⁻³	187.91
300	1.37 x 10⁻²	5.01 x 10⁻³	2.73	6.27 x 10⁻³	188.21
350	1.38 x 10⁻²	5.09 x 10⁻³	2.72	6.57 x 10⁻³	188.27
400	1.37 x 10⁻²	5.24 x 10⁻³	2.62	8.79 x 10⁻³	188.76
450	1.33 x 10⁻²	5.36 x 10⁻³	2.47	1.34 x 10⁻²	189.47
500	1.26 x 10⁻²	5.48 x 10⁻³	2.30	2.17 x 10⁻²	190.29
550	1.19 x 10⁻²	5.54 x 10⁻³	2.15	3.13 x 10⁻²	190.94
600	1.15 x 10⁻²	5.58 x 10⁻³	2.06	3.93 x 10⁻²	191.33
650	1.11 x 10⁻²	5.63 x 10⁻³	1.98	4.80 x 10⁻²	191.70
700	1.09 x 10 ⁻²	5.68 x 10 ⁻³	1.92	5.51 x 10 ⁻²	191.97
750	1.06 x 10 ⁻²	5.73 x 10 ⁻³	1.85	6.43 x 10 ⁻²	192.26
800	1.03 x 10 ⁻²	5.77 x 10 ⁻³	1.78	7.44 x 10 ⁻²	192.56
850	1.01 x 10 ⁻²	5.84 x 10 ⁻³	1.73	8.38 x 10 ⁻²	192.81
900	9.82 x 10 ⁻³	5.90 x 10 ⁻³	1.66	9.64 x 10 ⁻²	193.08
950	9.49 x 10 ⁻³	5.98 x 10 ⁻³	1.59	1.13 x 10 ⁻¹	193.35
1000	9.23 x 10 ⁻³	6.07 x 10 ⁻³	1.52	1.28 x 10 ⁻¹	193.57

Table S5. Generalized linear model results estimating effects of percent tree cover calculated at a 1000m radius around survey sites and mean annual temperature on mosquito species richness.

Environmental variable	Estimate	Standard Error	Z-value	p-value
% tree cover at 1000 m radius	5.96×10^{-3}	6.24×10^{-3}	0.96	0.34
Mean annual temperature	3.18	7.10×10^{-2}	-4.0×10^{-3}	0.99
Tree cover * temperature	-9.48×10^{-3}	3.48×10^{-3}	-2.72	$6.48 \times 10^{-3} *$

Table S6. Results of generalized linear models estimating the effects of tree cover across spatial scales on *Aedes albopictus* presence. Significant models are highlighted with bold text.

Tree cover radius (m)	Estimated effect	Standard error	Z-value	p-value	AIC
30	-2.61 x 10⁻²	1.19 x 10⁻²	-2.19	2.88 x 10⁻²	49.28
40	-2.95 x 10⁻²	1.31 x 10⁻²	-2.25	2.46 x 10⁻²	48.70
50	-3.61 x 10⁻²	1.47 x 10⁻²	-2.46	1.39 x 10⁻²	46.80
60	-3.36 x 10⁻²	1.44 x 10⁻²	-2.33	1.98 x 10⁻²	48.21
70	-3.51 x 10⁻²	1.48 x 10⁻²	-2.37	1.76 x 10⁻²	47.79
80	-4.00 x 10⁻²	1.63 x 10⁻²	-2.45	1.44 x 10⁻²	46.84
90	-4.15 x 10⁻²	1.69 x 10⁻²	-2.46	1.40 x 10⁻²	46.85
100	-4.09 x 10⁻²	1.72 x 10⁻²	-2.38	1.72 x 10⁻²	47.32
110	-4.46 x 10⁻²	1.83 x 10⁻²	-2.44	1.47 x 10⁻²	46.60
120	-4.56 x 10⁻²	1.88 x 10⁻²	-2.43	1.52 x 10⁻²	46.74
130	-4.52 x 10⁻²	1.88 x 10⁻²	-2.41	1.61 x 10⁻²	46.91
140	-4.68 x 10⁻²	1.96 x 10⁻²	-2.39	1.69 x 10⁻²	46.90
150	-4.63 x 10⁻²	1.95 x 10⁻²	-2.37	1.79 x 10⁻²	47.25
160	-4.71 x 10⁻²	2.00 x 10⁻²	-2.36	1.83 x 10⁻²	47.28
170	-4.73 x 10⁻²	2.03 x 10⁻²	-2.33	1.96 x 10⁻²	47.43
180	-4.57 x 10⁻²	2.02 x 10⁻²	-2.27	2.34 x 10⁻²	48.09
190	-4.52 x 10⁻²	2.03 x 10⁻²	-2.23	2.60 x 10⁻²	48.40
200	-4.62 x 10⁻²	2.08 x 10⁻²	-2.22	2.63 x 10⁻²	48.40
250	-4.36 x 10⁻²	2.10 x 10⁻²	-2.08	3.75 x 10⁻²	49.41
300	-3.90 x 10 ⁻²	1.99 x 10 ⁻²	-1.96	5.00 x 10 ⁻²	50.30
350	-3.67 x 10 ⁻²	1.95 x 10 ⁻²	-1.89	5.94 x 10 ⁻²	50.82
400	-3.52 x 10 ⁻²	1.92 x 10 ⁻²	-1.83	6.71 x 10 ⁻²	51.18
450	-3.40 x 10 ⁻²	1.89 x 10 ⁻²	-1.80	7.24 x 10 ⁻²	51.41
500	-3.35 x 10 ⁻²	1.87 x 10 ⁻²	-1.79	7.29 x 10 ⁻²	51.48
550	-3.25 x 10 ⁻²	1.84 x 10 ⁻²	-1.77	7.69 x 10 ⁻²	51.64
600	-3.01 x 10 ⁻²	1.79 x 10 ⁻²	-1.68	9.25 x 10 ⁻²	52.06
650	-2.77 x 10 ⁻²	1.75 x 10 ⁻²	-1.58	1.13 x 10 ⁻¹	52.49
700	-2.52 x 10 ⁻²	1.72 x 10 ⁻²	-1.47	1.43 x 10 ⁻¹	52.94
750	-2.26 x 10 ⁻²	1.69 x 10 ⁻²	-1.34	1.81 x 10 ⁻¹	53.36
800	-2.10 x 10 ⁻²	1.68 x 10 ⁻²	-1.25	2.12 x 10 ⁻¹	53.62
850	-1.96 x 10 ⁻²	1.67 x 10 ⁻²	-1.17	2.41 x 10 ⁻¹	53.83
900	-1.85 x 10 ⁻²	1.67 x 10 ⁻²	-1.10	2.70 x 10 ⁻¹	54.00
950	-1.75 x 10 ⁻²	1.68 x 10 ⁻²	-1.04	2.98 x 10 ⁻¹	54.15
1000	-1.65 x 10 ⁻²	1.69 x 10 ⁻²	-0.98	3.28 x 10 ⁻¹	54.28

Table S7. Generalized linear model results estimating effects of percent tree cover calculated at a 1000m radius around survey sites and mean annual temperature on *Ae. albopictus* presence.

Environmental variable	Estimate	Standard Error	Z-value	p-value
% tree cover at 1000 m radius	-8.34×10^{-2}	3.61×10^{-2}	-2.31	0.021 *
Mean annual temperature	9.37×10^{-1}	4.20×10^{-2}	2.23	0.026 *
Tree cover * temperature	-3.46×10^{-3}	1.54×10^{-2}	-0.225	0.822

Table S8. Generalized dissimilarity modeling results for mosquito community turnover along environmental gradients of mean annual temperature, elevation, geographic distance, and tree cover calculated for different radii surrounding survey sites.

Tree cover radius (m)	percent tree cover	sum of coefficients			elevation	intercept	percent deviance explained
		mean annual temperature	geographic distance				
30	0.659	0.916	0.410	0	1.64	5.430	
40	0.602	0.890	0.417	0	1.64	5.727	
50	0.725	0.858	0.394	0	1.60	6.797	
60	0.698	0.904	0.420	0	1.63	6.046	
70	0.694	0.900	0.408	0	1.63	6.036	
80	0.750	0.875	0.388	0	1.61	6.472	
90	0.737	0.880	0.409	0	1.61	6.367	
100	0.710	0.889	0.399	0	1.62	6.110	
110	0.788	0.873	0.372	0	1.59	6.651	
120	0.801	0.878	0.376	0	1.59	6.643	
130	0.823	0.875	0.356	0	1.59	6.803	
140	0.840	0.873	0.349	0	1.59	6.745	
150	0.831	0.872	0.347	0	1.59	6.590	
160	0.850	0.868	0.333	0	1.59	6.566	
170	0.837	0.865	0.322	0	1.60	6.393	
180	0.799	0.860	0.340	0	1.62	5.821	
190	0.773	0.858	0.357	0	1.65	5.472	
200	0.792	0.850	0.356	0	1.65	5.422	
250	0.628	0.856	0.455	0	1.74	4.383	
300	0.520	0.880	0.520	0	1.79	4.106	
350	0.499	0.884	0.527	0	1.79	4.094	
400	0.465	0.889	0.513	0	1.79	4.095	
450	0.434	0.905	0.515	0	1.79	3.947	
500	0.405	0.921	0.517	0	1.79	3.812	
550	0.372	0.937	0.525	0	1.80	3.690	
600	0.314	0.543	0.950	0	1.80	3.544	
650	0.258	0.558	0.962	0	1.81	3.424	
700	0.211	0.571	0.973	0	1.81	3.339	
750	0.163	0.583	0.982	0	1.82	3.272	
800	0.119	0.593	0.990	0	1.82	3.224	
850	0.066	0.608	0.999	0	1.83	3.184	
900	0.023	0.623	1.004	0	1.83	3.166	
950	0.001	0.631	1.006	0	1.84	3.163	
1000	0	0.631	1.007	0	1.84	3.163	