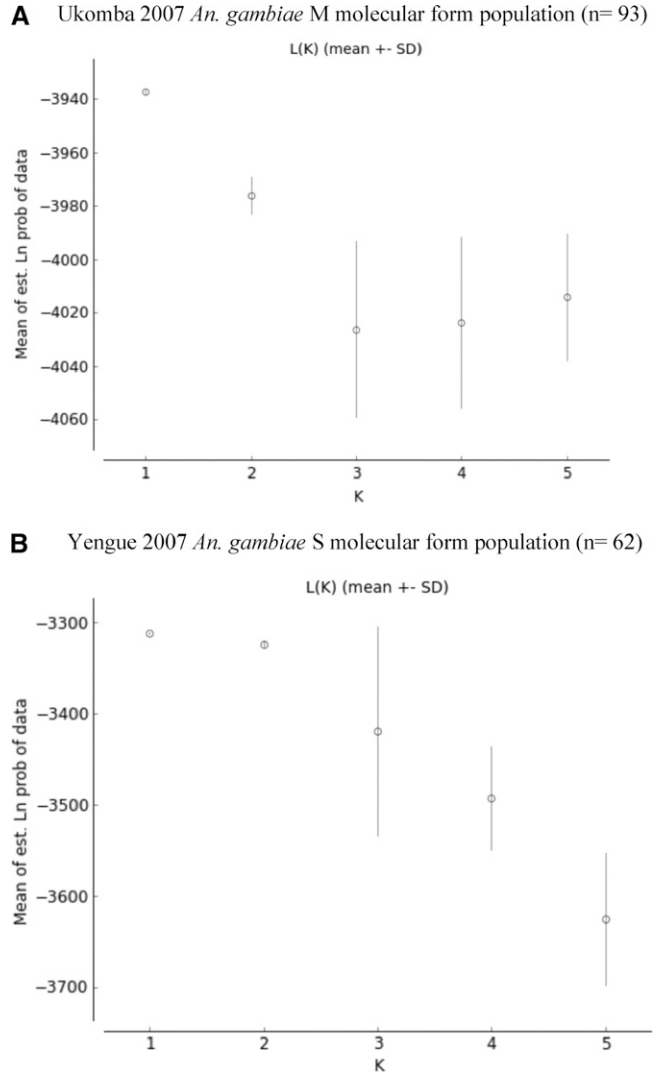
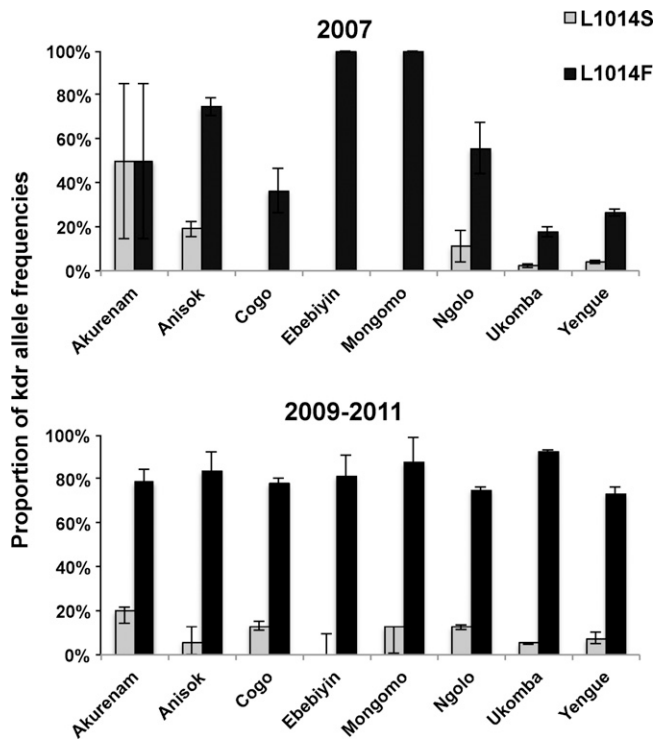


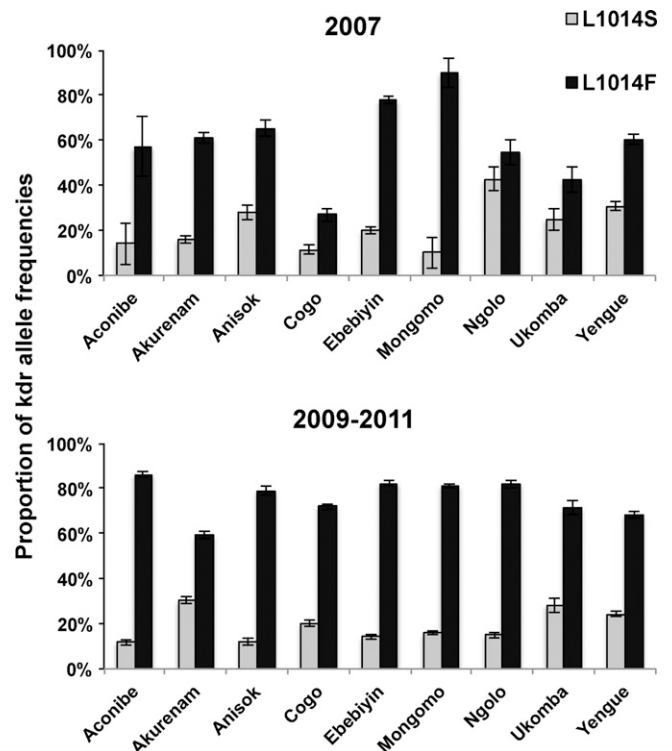
SUPPLEMENTAL FIGURE 1. Bayesian cluster analysis using STRUCTURE version 2.3.2 showing genetic membership of 93 and 62 mosquitoes representing **A**, Ukomba *Aopheles gambiae* M molecular forms, and **B**, Yengue *An. gambiae* S molecular forms, respectively, in continental Equatorial Guinea. The X-axis indicates assignment for each individual (**bars**) in the sample to genetic clusters (K), and the Y-axis indicates probability of assignment of an individual to a given genetic cluster. To determine the most likely number of clusters (K), we conducted five independent runs for each K = 1–5. For all runs, an admixture model and independent allele frequencies were assumed. Burn-in was 100,000 iterations, followed by 500,000 replications. The most likely number of clusters was determined according to the guidelines of Pritchard and others<sup>47</sup> for the calculation of  $\Delta K$ .



SUPPLEMENTAL FIGURE 2. Ln probabilities of the data for K = 1–5, indicating the highest probability of K = 1 in Ukomba (**A**) and Yengue (**B**) in continental Equatorial Guinea. Error bars indicate SE.



SUPPLEMENTAL FIGURE 3. Proportion of L1014S and L1014F allele frequencies for 2007 (pre-intervention) and post-intervention (2009–2011) for *Anopheles gambiae* M molecular form populations in continental Equatorial Guinea. Error bars indicate SE of the proportion.



SUPPLEMENTAL FIGURE 4. Proportion of L1014S and L1014F allele frequencies for 2007 (pre-intervention) and 2009–2011 (post-intervention) *Anopheles gambiae* S molecular form populations in continental Equatorial Guinea. Error bars indicate SE of the proportion.

SUPPLEMENTAL TABLE 1

Z and P values of significance tests for differences between *kdr* allele frequencies between years in continental Equatorial Guinea\*

Site	L1014L		L1014S		L1014F	
	Z	P	Z	P	Z	P
Anisok	-0.7516	0.4523	1.4051	0.1600	-0.8049	0.4209
Cogo	7.3648	< <b>0.0001</b>	-1.8181	0.0690	-4.3071	< <b>0.0001</b>
Ngolo	2.6298	<b>0.0085</b>	-0.1901	0.8492	-1.8619	0.0626
Ukomba	28.2030	< <b>0.0001</b>	-2.2569	<b>0.0240</b>	-25.2319	< <b>0.0001</b>
Yengue	11.6483	< <b>0.0001</b>	-1.6424	0.1005	-11.2002	< <b>0.0001</b>
Aconibe	6.4567	< <b>0.0001</b>	0.2992	0.7648	-3.0954	<b>0.0020</b>
Akurenam	6.5228	< <b>0.0001</b>	-5.9109	< <b>0.0001</b>	0.6982	0.4851
Anisok	-0.8530	0.3937	4.7279	< <b>0.0001</b>	-3.5486	<b>0.0004</b>
Cogo	19.1330	< <b>0.0001</b>	-2.9418	<b>0.0033</b>	-12.6166	< <b>0.0001</b>
Ebebiyin	-1.2522	0.2105	3.4558	<b>0.0005</b>	-2.6118	<b>0.0090</b>
Mongomo	-0.7562	0.4495	-0.7189	0.4722	0.9945	0.3200
Ngolo	-0.3547	0.7228	6.2902	< <b>0.0001</b>	-5.7593	< <b>0.0001</b>
Ukomba	8.4200	< <b>0.0001</b>	-0.5588	0.5763	-4.5729	< <b>0.0001</b>
Yengue	1.0097	0.3126	2.4116	<b>0.0159</b>	-2.8098	<b>0.0050</b>

\**kdr* = knockdown resistance. Significant P values are indicated in bold.

SUPPLEMENTAL TABLE 2

Frequency of alleles at 16 microsatellite loci in three sites in continental Equatorial Guinea (Yengue, Ukomba, and Mongomo), 2007 and 2010

Locus	Allele	Ukomba 2007	Ukomba 2010	Frequency change	Mongomo 2007	Mongomo 2010	Frequency change	Yengue 2007	Yengue 2010	Frequency change
59	No.	81	71		53	83		54	32	
	106	0.019	0.000	0.019				0.019	0.000	0.019
	108							0.009	0.000	0.009
	110	0.012	0.085	-0.072	0.104	0.024	0.080	0.028	0.031	-0.003
	112	0.019	0.000	0.019	0.009	0.012	-0.003	0.046	0.031	0.015
	114	0.006	0.000	0.006				0.093	0.016	0.077
	116	0.037	0.000	0.037	0.000	0.030	-0.030	0.065	0.000	0.065
	118	0.062	0.183	-0.121	0.160	0.283	-0.123	0.259	0.313	-0.053
	120	0.130	0.063	0.066	0.151	0.157	-0.006	0.083	0.063	0.021
	122	0.105	0.472	-0.367	0.208	0.205	0.003	0.120	0.172	-0.052
	124	0.056	0.148	-0.092	0.170	0.193	-0.023	0.111	0.250	-0.139
	126	0.173	0.028	0.145	0.142	0.036	0.105	0.037	0.031	0.006
	128	0.265	0.014	0.251	0.038	0.054	-0.016	0.037	0.063	-0.025
	130	0.056	0.007	0.049	0.009	0.000	0.009	0.019	0.000	0.019
	132	0.043	0.000	0.043				0.019	0.000	0.019
	134	0.006	0.000	0.006	0.009	0.006	0.003			
	136							0.000	0.016	-0.016
	138	0.012	0.000	0.012						
	162							0.009	0.000	0.009
	170							0.009	0.000	0.009
	174							0.009	0.000	0.009
	182							0.009	0.016	-0.006
	266							0.009	0.000	0.009
288							0.009	0.000	0.009	
93	No.	79	71		36	83		51	24	
	139	0.006	0.000	0.006				0.020	0.063	-0.043
	141	0.006	0.042	-0.036						
	142				0.028	0.012	0.016	0.029	0.000	0.029
	143				0.042	0.000	0.042	0.000	0.042	-0.042
	145	0.025	0.000	0.025	0.042	0.102	-0.061	0.039	0.000	0.039
	147	0.051	0.021	0.030	0.111	0.078	0.033	0.039	0.083	-0.044
	149	0.386	0.430	-0.044	0.264	0.392	-0.128	0.216	0.333	-0.118
	151	0.266	0.317	-0.051	0.222	0.211	0.011	0.235	0.146	0.089
	153	0.082	0.063	0.019	0.153	0.042	0.111	0.059	0.042	0.017
	155	0.038	0.063	-0.025	0.014	0.030	-0.016	0.049	0.083	-0.034
	157	0.038	0.000	0.038	0.014	0.018	-0.004	0.049	0.021	0.028
	159	0.019	0.000	0.019	0.056	0.066	-0.011	0.088	0.063	0.026
	161	0.006	0.000	0.006	0.000	0.006	-0.006	0.010	0.000	0.010
	165				0.000	0.012	-0.012			
	169							0.010	0.000	0.010
	171				0.014	0.000	0.014			
	173				0.014	0.000	0.014	0.000	0.021	-0.021
	174							0.010	0.000	0.010
	176				0.000	0.006	-0.006	0.029	0.042	-0.012
	177	0.013	0.007	0.006						
	178	0.000	0.007	-0.007	0.000	0.006	-0.006	0.010	0.000	0.010
	179	0.006	0.049	-0.043						
180							0.010	0.000	0.010	
181							0.000	0.021	-0.021	
183	0.044	0.000	0.044	0.014	0.012	0.002	0.029	0.000	0.029	
185	0.013	0.000	0.013	0.014	0.006	0.008	0.020	0.042	-0.022	
191							0.010	0.000	0.010	
229							0.029	0.000	0.029	
234							0.010	0.000	0.010	
119	No.	93	71		0	0		58	32	
	177	0.005	0.007	-0.002						
	179	0.016	0.028	-0.012				0.009	0.000	0.009
	181	0.038	0.042	-0.005				0.138	0.094	0.044
	183	0.065	0.077	-0.013				0.043	0.125	-0.082
	185	0.226	0.331	-0.105				0.216	0.203	0.012
	187	0.210	0.296	-0.086				0.138	0.141	-0.003
	189	0.038	0.021	0.017				0.060	0.063	-0.002
	191	0.086	0.070	0.016				0.103	0.094	0.010
	193	0.070	0.049	0.021				0.009	0.031	-0.023
	195	0.038	0.014	0.024				0.121	0.125	-0.004
	197	0.081	0.063	0.017				0.017	0.047	-0.030
	199	0.011	0.000	0.011				0.017	0.000	0.017
	201	0.016	0.000	0.016				0.009	0.031	-0.023
	203	0.016	0.000	0.016				0.043	0.031	0.012
205	0.022	0.000	0.022				0.009	0.000	0.009	

(continued)

SUPPLEMENTAL TABLE 2  
Continued

Locus	Allele	Ukomba 2007	Ukomba 2010	Frequency change	Mongomo 2007	Mongomo 2010	Frequency change	Yengue 2007	Yengue 2010	Frequency change
	209	0.000	0.000	0.000				0.017	0.000	0.017
	215	0.016	0.000	0.016				0.009	0.000	0.009
	217	0.011	0.000	0.011				0.009	0.000	0.009
	221	0.011	0.000	0.011						
	235	0.005	0.000	0.005						
	237	0.005	0.000	0.005						
	239							0.026	0.000	0.026
	241	0.005	0.000	0.005						
	251	0.005	0.000	0.005						
	252							0.000	0.016	-0.016
	253							0.009	0.000	0.009
	255	0.005	0.000	0.005						
164	66		71		53	81		57	31	
	81	0.030	0.085	-0.054	0.028	0.062	-0.033	0.053	0.081	-0.028
	83	0.061	0.063	-0.003	0.000	0.012	-0.012			
	85	0.197	0.204	-0.007	0.009	0.031	-0.021	0.044	0.032	0.012
	87	0.083	0.042	0.041	0.264	0.265	-0.001	0.386	0.242	0.144
	89	0.129	0.162	-0.033	0.481	0.395	0.086	0.316	0.339	-0.023
	91	0.098	0.070	0.028	0.047	0.062	-0.015	0.018	0.000	0.018
	92							0.009	0.000	0.009
	93	0.114	0.176	-0.062	0.075	0.068	0.008	0.035	0.032	0.003
	95	0.121	0.127	-0.006	0.019	0.068	-0.049	0.044	0.081	-0.037
	96				0.028	0.000	0.028	0.026	0.065	-0.038
	97	0.015	0.000	0.015				0.018	0.000	0.018
	99	0.106	0.056	0.050						
	103	0.008	0.000	0.008	0.000	0.019	-0.019			
	105	0.030	0.014	0.016				0.009	0.000	0.009
	110				0.000	0.019	-0.019	0.000	0.000	0.000
	111	0.008	0.000	0.008	0.019	0.000	0.019	0.009	0.000	0.009
	113							0.009	0.000	0.009
	114							0.000	0.016	-0.016
	116				0.028	0.000	0.028	0.026	0.113	-0.087
175		0	0		53	80		61	31	
	80							0.041	0.081	-0.040
	85				0.009	0.038	-0.028	0.025	0.032	-0.008
	86				0.000	0.250	-0.250			
	87				0.283	0.025	0.258	0.377	0.242	0.135
	89				0.009	0.419	-0.409	0.016	0.000	0.016
	90				0.462	0.000	0.462	0.328	0.339	-0.011
	91				0.038	0.069	-0.031	0.025	0.032	-0.008
	93				0.047	0.069	-0.022	0.016	0.000	0.016
	94				0.066	0.000	0.066	0.041	0.048	-0.007
	95				0.000	0.069	-0.069	0.008	0.032	-0.024
	97				0.028	0.000	0.028	0.049	0.065	-0.015
	99							0.016	0.000	0.016
	103				0.000	0.013	-0.013			
	105							0.008	0.000	0.008
	107							0.008	0.000	0.008
	109				0.000	0.044	-0.044			
	111				0.019	0.000	0.019	0.016	0.000	0.016
	114							0.000	0.016	-0.016
	115				0.009	0.000	0.009	0.016	0.000	0.016
	116				0.009	0.000	0.009	0.008	0.113	-0.105
	135				0.000	0.006	-0.006			
	137				0.009	0.000	0.009			
	139				0.009	0.000	0.009			
242	N	78	71		0	0		55	31	
	55	0.295	0.000	0.295						
	57	0.141	0.310	-0.169				0.445	0.597	-0.151
	59	0.019	0.028	-0.009				0.018	0.032	-0.014
	61	0.301	0.035	0.266				0.000	0.016	-0.016
	62	0.000	0.000	0.000				0.009	0.016	-0.007
	63	0.032	0.394	-0.362				0.109	0.065	0.045
	65	0.167	0.162	0.005				0.109	0.177	-0.068
	67	0.019	0.056	-0.037				0.055	0.032	0.022
	69	0.026	0.014	0.012				0.045	0.000	0.045
	71							0.000	0.016	-0.016
	75							0.027	0.000	0.027
	79							0.000	0.048	-0.048

(continued)

SUPPLEMENTAL TABLE 2  
Continued

Locus	Allele	Ukomba 2007	Ukomba 2010	Frequency change	Mongomo 2007	Mongomo 2010	Frequency change	Yengue 2007	Yengue 2010	Frequency change
	83							0.100	0.000	0.100
	89							0.027	0.000	0.027
	93							0.018	0.000	0.018
	105							0.036	0.000	0.036
249		64	76		53	82		60	32	
	91	0.000	0.013	-0.013						
	99	0.000	0.039	-0.039						
	101				0.009	0.000	0.009	0.025	0.047	-0.022
	103	0.000	0.007	-0.007						
	105	0.008	0.000	0.008	0.000	0.030	-0.030	0.000	0.063	-0.063
	107	0.055	0.026	0.028	0.066	0.061	0.005	0.075	0.016	0.059
	109	0.281	0.224	0.058	0.292	0.311	-0.019	0.225	0.188	0.038
	111	0.109	0.072	0.037	0.236	0.159	0.077	0.292	0.172	0.120
	113	0.141	0.138	0.002	0.113	0.207	-0.094	0.142	0.234	-0.093
	115	0.219	0.257	-0.038	0.170	0.073	0.097	0.083	0.109	-0.026
	117	0.008	0.007	0.001	0.047	0.085	-0.038	0.092	0.094	-0.002
	119	0.125	0.145	-0.020	0.000	0.024	-0.024	0.017	0.000	0.017
	121	0.023	0.046	-0.023						
	122							0.008	0.016	-0.007
	123				0.000	0.012	-0.012	0.000	0.000	0.000
	124				0.009	0.000	0.009	0.000	0.016	-0.016
	126				0.009	0.000	0.009	0.008	0.000	0.008
	128				0.028	0.012	0.016			
	131				0.009	0.006	0.003	0.008	0.016	-0.007
	133	0.008	0.000	0.008	0.009	0.012	-0.003	0.008	0.031	-0.023
	137				0.000	0.006	-0.006	0.008	0.000	0.008
	139							0.008	0.000	0.008
325		0.016	0.026	-0.011				56	30	
	80	0	0		0	0		0.089	0.067	0.023
	82							0.348	0.367	-0.018
	84							0.063	0.083	-0.021
	86							0.241	0.167	0.074
	89							0.098	0.150	-0.052
	91							0.054	0.083	-0.030
	93							0.009	0.033	-0.024
	108							0.098	0.033	0.065
	110							0.000	0.017	-0.017
417		90	77		52	82		62	30	
	67				0.010	0.018	-0.009	0.008	0.017	-0.009
	68	0.044	0.039	0.005						
	74				0.000	0.018	-0.018			
	76				0.000	0.006	-0.006			
	78	0.567	0.552	0.015	0.510	0.549	-0.039	0.645	0.667	-0.022
	80				0.000	0.018	-0.018	0.000	0.000	0.000
	82	0.217	0.227	-0.011	0.250	0.128	0.122	0.153	0.100	0.053
	84	0.072	0.110	-0.038	0.231	0.238	-0.007	0.185	0.217	-0.031
	88	0.100	0.071	0.029	0.000	0.006	-0.006	0.008	0.000	0.008
	90				0.000	0.018	-0.018			
555		88	70		0	0		61	32	
	78							0.000	0.141	-0.141
	80	0.028	0.043	-0.014				0.000	0.016	-0.016
	82	0.443	0.536	-0.093				0.205	0.000	0.205
	84	0.153	0.221	-0.068				0.008	0.000	0.008
	86	0.034	0.021	0.013				0.230	0.094	0.136
	88	0.040	0.021	0.018				0.156	0.000	0.156
	90	0.085	0.064	0.021				0.115	0.000	0.115
	92	0.063	0.064	-0.002				0.148	0.063	0.085
	94	0.006	0.029	-0.023				0.025	0.563	-0.538
	96							0.008	0.078	-0.070
	100	0.034	0.000	0.034				0.000	0.016	-0.016
	102	0.006	0.000	0.006				0.008	0.016	-0.007
	103							0.000	0.016	-0.016
	104	0.034	0.000	0.034				0.016	0.000	0.016
	106	0.040	0.000	0.040						
	108	0.017	0.000	0.017				0.025	0.000	0.025
	110	0.017	0.000	0.017				0.025	0.000	0.025
	112							0.016	0.000	0.016
	120							0.016	0.000	0.016

(continued)

SUPPLEMENTAL TABLE 2  
Continued

Locus	Allele	Ukomba 2007	Ukomba 2010	Frequency change	Mongomo 2007	Mongomo 2010	Frequency change	Yengue 2007	Yengue 2010	Frequency change	
577		86	71		49	83		61	18		
	76	0.017	0.021	-0.004							
	78	0.140	0.169	-0.029	0.122	0.036	0.086	0.197	0.000	0.197	
	80	0.012	0.000	0.012	0.061	0.018	0.043	0.008	0.000	0.008	
	82	0.006	0.000	0.006	0.000	0.289	-0.289	0.000	0.306	-0.306	
	84	0.000	0.007	-0.007	0.000	0.078	-0.078				
	86	0.017	0.042	-0.025	0.102	0.205	-0.103	0.074	0.167	-0.093	
	88				0.000	0.175	-0.175	0.000	0.111	-0.111	
	90	0.029	0.007	0.022	0.000	0.157	-0.157	0.000	0.222	-0.222	
	92				0.041	0.006	0.035	0.066	0.139	-0.073	
	94	0.616	0.697	-0.081	0.541	0.000	0.541	0.500	0.028	0.472	
	96	0.041	0.049	-0.009	0.112	0.000	0.112	0.008	0.000	0.008	
	100				0.010	0.000	0.010				
	102	0.029	0.007	0.022	0.000	0.006	-0.006	0.025	0.000	0.025	
	103							0.008	0.000	0.008	
	104				0.010	0.006	0.004				
	105							0.016	0.000	0.016	
	106				0.000	0.006	-0.006				
	110	0.029	0.000	0.029							
	111							0.025	0.000	0.025	
112	0.064	0.000	0.064								
113							0.074	0.000	0.074		
118				0.000	0.012	-0.012					
120							0.000	0.028	-0.028		
128				0.000	0.006	-0.006					
603		92	76		52	82		50	32		
	98				0.000	0.012	-0.012				
	100				0.010	0.037	-0.027	0.020	0.016	0.004	
	102				0.048	0.171	-0.123	0.000	0.031	-0.031	
	104	0.766	0.849	-0.082	0.817	0.701	0.116	0.820	0.750	0.070	
	106	0.152	0.099	0.053	0.115	0.067	0.048	0.140	0.125	0.015	
	108	0.005	0.000	0.005	0.000	0.006	-0.006	0.000	0.016	-0.016	
	110				0.010	0.006	0.004	0.020	0.047	-0.027	
	114							0.000	0.016	-0.016	
	128	0.005	0.026	-0.021							
	130	0.005	0.007	-0.001							
	140	0.016	0.000	0.016							
	144	0.043	0.013	0.030							
	146	0.005	0.007	-0.001							
	720		92	74		53	83		52	32	
		61	0.114	0.108	0.006	0.198	0.151	0.048	0.279	0.203	0.076
63		0.342	0.331	0.011	0.142	0.145	-0.003	0.048	0.141	-0.093	
65		0.250	0.270	-0.020	0.330	0.380	-0.049	0.298	0.266	0.032	
67		0.179	0.155	0.024	0.245	0.223	0.022	0.250	0.266	-0.016	
69		0.038	0.014	0.025	0.066	0.066	0.000	0.058	0.063	-0.005	
71		0.071	0.088	-0.017	0.009	0.024	-0.015	0.038	0.047	-0.008	
73		0.005	0.034	-0.028	0.009	0.012	-0.003	0.010	0.016	-0.006	
77								0.019	0.000	0.019	
770			89	77		50	81		62	30	
153	0.022	0.026	-0.004	0.070	0.074	-0.004					
155	0.455	0.422	0.033	0.070	0.012	0.058	0.137	0.083	0.054		
157	0.135	0.195	-0.060	0.010	0.049	-0.039	0.008	0.083	-0.075		
159	0.017	0.006	0.010	0.030	0.043	-0.013	0.097	0.083	0.013		
160				0.000	0.031	-0.031					
161	0.247	0.208	0.039	0.080	0.080	0.000	0.113	0.167	-0.054		
163	0.011	0.000	0.011	0.070	0.105	-0.035	0.202	0.117	0.085		
165	0.011	0.006	0.005	0.040	0.025	0.015	0.024	0.033	-0.009		
167	0.079	0.117	-0.038	0.080	0.383	-0.303	0.073	0.017	0.056		
169				0.380	0.198	0.182	0.169	0.200	-0.031		
171	0.022	0.019	0.003	0.170	0.000	0.170	0.177	0.217	-0.039		
787		85	77		52	83		62	31		
	104							0.000	0.016	-0.016	
	106				0.000	0.012	-0.012				
	108	0.159	0.175	-0.017	0.000	0.030	-0.030				
	110	0.071	0.104	-0.033	0.038	0.042	-0.004	0.000	0.032	-0.032	
	112	0.612	0.591	0.021	0.538	0.602	-0.064	0.621	0.613	0.008	
	114	0.147	0.130	0.017	0.385	0.271	0.114	0.315	0.306	0.008	
	116	0.012	0.000	0.012	0.010	0.012	-0.002	0.008	0.000	0.008	
	118				0.019	0.024	-0.005	0.024	0.016	0.008	
	120				0.000	0.006	-0.006				

(continued)

SUPPLEMENTAL TABLE 2  
Continued

Locus	Allele	Ukomba 2007	Ukomba 2010	Frequency change	Mongomo 2007	Mongomo 2010	Frequency change	Yengue 2007	Yengue 2010	Frequency change
	122				0.010	0.000	0.010			
	123							0.008	0.000	0.008
	125							0.016	0.000	0.016
817	127	76	77		50	83		0.008	0.016	-0.008
	111							60	30	
	113							0.008	0.033	-0.025
	115				0.000	0.006	-0.006	0.000	0.067	-0.067
	117				0.000	0.006	-0.006	0.000	0.083	-0.083
	118				0.020	0.006	0.014	0.008	0.033	-0.033
	120				0.000	0.018	-0.018		0.050	-0.042
	121	0.079	0.045	0.034	0.050	0.012	0.038	0.042	0.033	0.008
	122				0.010	0.072	-0.062	0.000	0.017	-0.017
	123	0.125	0.117	0.008	0.110	0.060	0.050	0.142	0.017	0.125
	124				0.000	0.169	-0.169	0.000	0.017	-0.017
	125	0.171	0.208	-0.037	0.260	0.054	0.206	0.208	0.233	-0.025
	126				0.000	0.325	-0.325	0.000	0.017	-0.017
	127	0.237	0.545	-0.309	0.450	0.072	0.378	0.517	0.350	0.167
	128				0.000	0.042	-0.042			
	129	0.079	0.084	-0.005	0.070	0.042	0.028	0.067	0.050	0.017
	130				0.000	0.048	-0.048			
	131	0.105	0.000	0.105	0.010	0.006	0.004	0.008	0.000	0.008
	132	0.007	0.000	0.007	0.010	0.054	-0.044			
	133	0.118	0.000	0.118	0.000	0.006	-0.006			
	134				0.010	0.000	0.010			
	135	0.072	0.000	0.072						
	137	0.007	0.000	0.007						
			Average	0.000		Average	0.000		Average	0.000
			Maximum	0.295		Maximum	0.541		Maximum	0.472
			95% Percentile	0.064		95% Percentile	0.11843		95% Percentile	0.0979
			SD	0.0719		SD	0.1051		SD	0.074