



Table S1. UTM coordinates and sizes of the sampled olive groves

	x	y	Size (ha)
1	476633	4439638	3.27
2	478651	4447718	8.51
3	462423	4450804	1.33
4	453964	4447059	1.10
5	471263	4454459	1.85
6	461552	4458271	1.76
7	466807	4459442	4.84
8	475657	4442495	1.31
9	463499	4445211	0.97
10	458782	4458396	1.16
11	458323	4454227	4.10
12	466321	4438532	2.10
13	458313	4449148	11.01
14	479518	4444073	1.48
15	467181	4442941	1.09



Table S2. Estimated regression coefficients (EST), adjusted standard errors (SE), Z and P values from glmmTMB for landscape effect on *Bactrocera oleae* abundance in 2015. Abundance data were pooled in two periods. Generalized lineal mixed models were fitted with negative binomial distribution and link function log. Explanatory variables were: Olive grove area (CAO), Scrubland area (CAS), Patch richness (PR) and Simpson landscape diversity index (SIEI), and were calculated at four radii around the sampled olive groves (500, 750, 1000 and 1500 m). P values < 0.05 indicated in bold.

Radius	Coefficient	Period								
		Spring				Autumn				
		EST	SE	Z	P	Coefficient	EST	SE	Z	P
500	Intercept	4.568	0.194	23.521	<2e-16	Intercept	6.028	0.442	13.627	<2e-16
	CAS	-0.022	0.007	-3.026	2.48e-03	SIEI	-3.066	0.607	-5.055	4.31e-07
Dropped variables		PR, SIEI				CAS, PR				
750	Intercept	4.571	0.214	21.291	<2e-16	Intercept	5.656	0.539	10.489	<2e-16
	CAS	-0.009	0.003	-2.688	7.18e-03	SIEI	-2.642	0.769	-3.436	5.91e-04
Dropped variables		PR, SIEI				CAS, PR				
1000	Intercept	6.363	0.533	11.936	<2e-16	Intercept	5.063	0.627	8.070	-7.04e-16
	PR	-0.302	0.072	-4.189	2.81e-05	SIEI	-1.811	0.898	-2.016	4.37e-02
Dropped variables		PR, SIEI				CAS, PR				
1500	Intercept	5.5246	1.024	5.393	6.93e-08	Intercept	3.458	0.186	18.634	<2e-16
	CAO	0.003	0.001	3.302	9.59e-04	CAO	0.002	0.001	2.595	9.46e-03
	PR	-0.201	0.100	-2.009	4.46e-02					
Dropped variables		CAS, SIEI				CAS, PR, SIEI				



Table S3. Estimated regression coefficients (EST), adjusted standard errors (SE), Z and P values from glmmTMB for landscape effect on *Bactrocera oleae* abundance in 2016. Abundance data were pooled in two periods. Generalized lineal mixed models were fitted with negative binomial distribution and link function log. Explanatory variables were: Olive grove area (CAO), Scrubland area (CAS), Patch richness (PR) and Simpson landscape diversity index (SIEI), and were calculated at four radii around the sampled olive groves (500, 750, 1000 and 1500 m). P values < 0.05 indicated in bold.

Radius	Coefficient	Period								
		Spring				Autumn				
		EST	SE	Z	P	Coefficient	EST	SE	Z	P
500	Intercept	4.943	0.186	26.524	<2e-16	Intercept	7.011	0.587	711.940	<2e-16
	CAS	-0.020	0.007	-2.979	2.89e-03	CAS	-0.016	0.007	-2.355	1.85e-02
						SIEI	-3.572	0.881	-4.055	5.02e-05
Dropped variables		PR, SIEI				PR				
750	Intercept	4.940	0.223	22.126	<2e-16	Intercept	7.027	0.524	13.403	<2e-16
	CAS	-0.009	0.003	-2.531	1.14e-02	CAS	-0.008	0.003	-2.796	5.18e-03
						SIEI	-3.610	0.789	-4.574	4.77e-06
Dropped variables		PR, SIEI				PR				
1000	Intercept	6.288	0.576	10.923	< 2e-16	Intercept	6.513	0.658	9.895	< 2e-16
	PR	-0.237	0.076	-3.136	1.71e-03	CAS	-0.006	0.002	-2.970	2.97e-03
						SIEI	-2.661	0.952	-2.796	5.18e-03
Dropped variables		CAS, SIEI				PR				
1500	Intercept	1.667	1.024	1.627	0.1037	Intercept	3.350	0.181	18.473	< 2e-16
	CAO	0.004	0.001	4.518	6.23e-06	CAO	0.004	0.001	5.464	4.66e-08
	SIEI	2.927	1.280	2.286	2.22e-02					
Dropped variables		CAS, PR				CAS, PR, SIEI				



Table S4. Estimated regression coefficients (EST), adjusted standard errors (SE), Z and P values from glmmTMB for landscape effect on *Bactrocera oleae* infestation in 2015 and 2016. Generalized lineal models were fitted with binomial distribution and link function logit. Explanatory variables were: Abundance of *B. oleae* (BO), Olive grove area (CAO), Scrubland area (CAS), Simpson landscape diversity index (SIEI), and Total edges (TE). Landscape indices (CAO, CAS, SIEI and TE) were calculated at four radii around the sampled olive groves (500, 750, 1000 and 1500 m). P values < 0.05 indicated in bold.

Radius	Year									
	2015					2016				
	Coefficient	EST	SE	Z	P	Coefficient	EST	SE	Z	P
500	Intercept	-1.309	0.188	-6.975	3.06e-12	Intercept	2.540	0.765	3.321	8.98e-04
						SIEI	-10.472	1.548	-6.766	1.33e-11
Dropped variables		BO, CAS, TE				CAS, TE				
750	Intercept	0.785	0.772	1.016	0.310	Intercept	4.441	2.956	1.502	0.133
	SIEI	-2.995	1.094	-2.739	6.16e-03	SIEI	-14.781	5.113	-2.891	3.85e-03
Dropped variables		BO, CAS, TE				CAS, TE				
1000	Intercept	0.720	0.508	1.419	0.156	Intercept	-7.713	1.523	-5.064	4.11e-07
	CAS	-0.003	0.001	-3.820	1.34e-04	CAO	0.021	0.008	2.673	7.52e-03
	SIEI	-2.067	0.769	-2.688	7.2e-03					
Dropped variables		BO, TE				CAS, TE				
1500	Intercept	-1.835	0.231	-7.958	1.75e-15	Intercept	-7.712	1.595	-4.836	1.32e-06
	CAO	0.003	0.001	3.086	2.03e-03	CAO	0.010	0.004	2.480	1.32e-02
Dropped variables		BO, CAS, TE				CAS, TE				