Macro-moth (*Lepidoptera*) Diversity of a Newly Shaped Ecological Corridor and the Surrounding Forest Area in the Western Italian Alps

Irene Piccini [1], Marta Depetris [1,*], Federica Paradiso [2], Francesca Cochis [3], Michela Audisio [4], Patrick Artioli [1], Stefania Smargiassi [5], Marco Bonifacino [5], Davide Giuliano [1], Sara La Cava [6], Giuseppe Rijllo [6], Simona Bonelli [1] and Stefano Scalercio [6,7]

[1] Department of Life Sciences and System Biology, University of Turin, 10123 Turin, TO, Italy
[2] Department of Geography and Environmental Sciences, Northumbria University, Newcastle upon Tyne NE1 8ST, UK
[3] Département de Biologie, Université Laval, Quebec, QC G1V 0A6, Canada
[4] Department of Forest Botany and Tree Physiology, University of Göttingen, 37075 Göttingen, Germany
[5] Department of Biology, University of Florence, 50121 Sesto Fiorentino, FI, Italy
[6] CREA Research Centre for Forestry and Wood, 87036 Rende, CS, Italy
[7] NBFC, National Biodiversity Future Center, 90133 Palermo, PA, Italy
* Correspondence: marta.depetris@unito.it.

Supplementary material S2

Materials and methods



Figure S1: UV-Red light traps in forest.

Results

Table S1: Species richness, abundance and diversity indexes of moths for each clearing and forested patch sampled in the study area in 2020 and 2021. Diversity index values are averaged in the total clearings and forest data.

Patches	Year	Species richness	Abundance	Shannon	Simpson	Evenness	Fisher's alpha
Clearing 2	2020	111	493	3.92	0.96	0.83	44.58
Clearing 3	2020	124	498	4.12	0.97	0.85	52.93
Clearing 4	2020	132	645	4.16	0.97	0.85	50.24
Clearing 5	2020	160	733	4.35	0.98	0.86	63.12

Clearing 7	2020	143	744	4.09	0.96	0.82	52.63
Clearing 8	2020	111	427	4.08	0.97	0.87	48.78
Clearing 9	2020	143	616	4.20	0.96	0.85	58.48
Clearing 10	2020	198	1719	4.31	0.97	0.81	57.80
Clearing 11	2020	126	587	4.01	0.96	0.83	49.24
Clearings	**2020**	**335**	**6462**	**4.14**	**0.97**	**0.88**	**53.09**
Forest 2	2020	111	486	4.05	0.97	0.86	44.96
Forest 3	2020	108	537	3.79	0.95	0.81	40.72
Forest 4	2020	103	638	3.79	0.95	0.82	34.76
Forest 5	2020	122	658	4.09	0.97	0.85	44.07
Forest 7	2020	132	563	4.02	0.96	0.82	54.30
Forest 8	2020	95	421	3.81	0.96	0.84	38.21
Forest 9	2020	143	532	4.26	0.97	0.86	64.14
Forest 10	2020	145	769	4.18	0.97	0.84	52.83
Forest	**2020**	**301**	**4655**	**3.99**	**0.96**	**0.85**	**46.45**

Clearing 2	2021	91	270	3.93	0.97	0.87	48.23
Clearing 3	2021	62	122	3.74	0.96	0.91	50.43
Clearing 4	2021	113	474	3.90	0.96	0.82	46.96
Clearing 5	2021	101	347	4.02	0.97	0.87	47.86
Clearing 7	2021	134	724	4.08	0.97	0.83	48.36
Clearing 8	2021	88	346	4.01	0.97	0.90	38.07
Clearing 9	2021	111	392	4.22	0.98	0.90	51.59
Clearing 10	2021	190	1320	4.27	0.97	0.81	60.86
Clearing 11	2021	146	553	4.05	0.95	0.81	64.72
Clearings	**2021**	**300**	**4548**	**4.02**	**0.97**	**0.86**	**50.79**

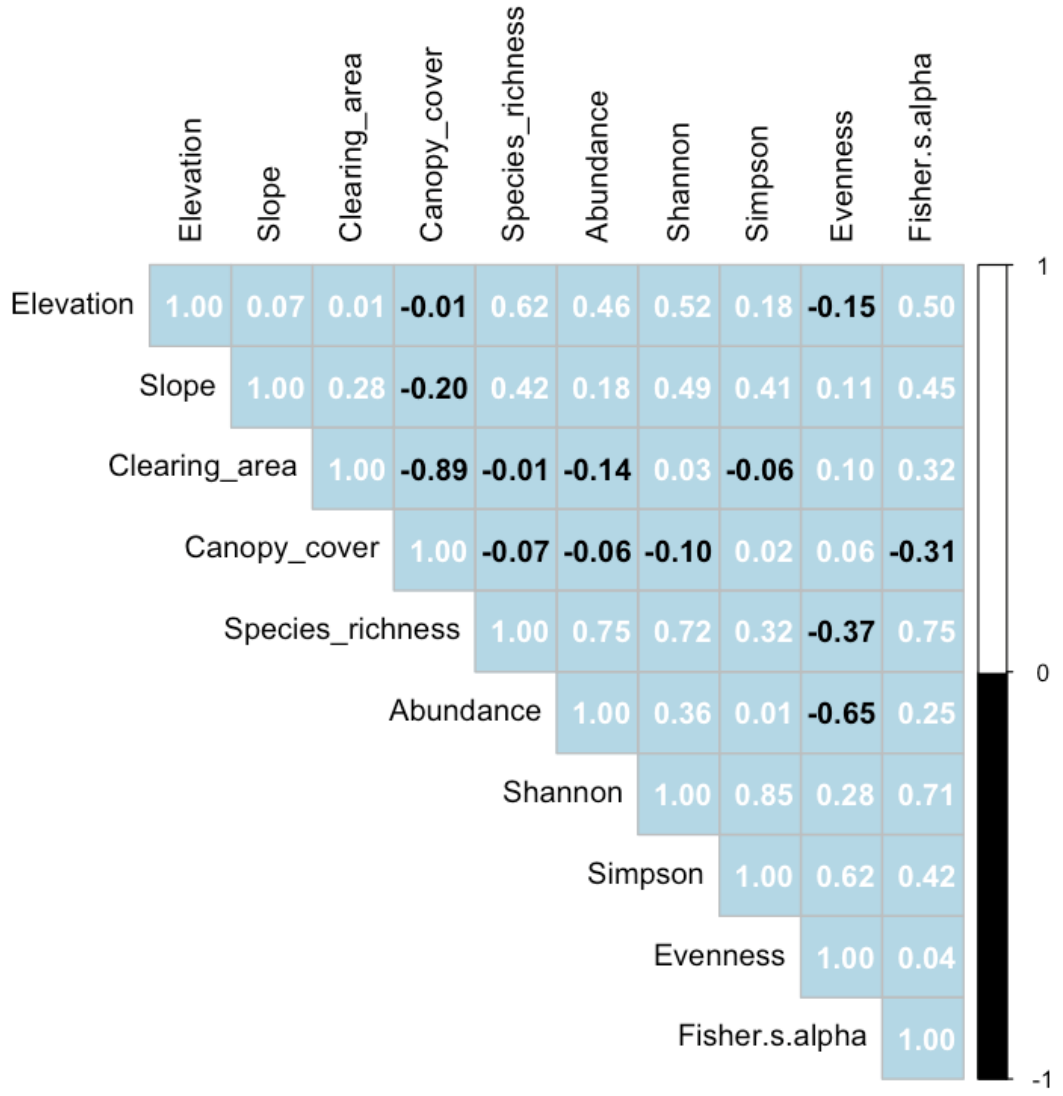


Figure S2: Pearson's correlation coefficients between moth assemblage parameters (species richness, abundance and diversity indexes), topographic and canopy variables. All values are not significant.

Table S2: Species richness, abundance and diversity indexes of moths for each clearing and forested patch sampled in the study area in 2020 and 2021. Diversity index values are averaged in the total clearings and forest data.

Kruscal Wallis results	Habitat	Canopy cover	Elevation	Slope
Abundance	Chi-squared = 0.33333, df = 1, p-value = 0.5637	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453
Species richness	Chi-squared = 0.0092593, df = 1, p-value = 0.9233	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453

Shannon index	Chi-squared = 0.75184, df = 1, p-value = 0.3859	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453
Simpson index	Chi-squared = 0.64646, df = 1, p-value = 0.4214	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453
Fisher's alpha index	Chi-squared = 2.0833, df = 1, p-value = 0.1489	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453
Evenness index	Chi-squared = 0.9351, df = 1, p-value = 0.333	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453	Chi-squared = 16, df = 16, p-value = 0.453