sustainability

MDPI

Piasentin, F., Gabriel, R., Arroz, A.M., Silva, A.R. & Amorim, I.R. (2021). What is Most Desirable for Nature? An Analysis of Azorean Pupils´ Biodiversity Perspectives when Deciding on Ecological Scenarios.

SUPPLEMENTARY MATERIAL - 1

Tables S1. Frequency results considering the argument categories and gender

Table S1-1. Number (N_a) and percentage (%) of the main argument categories and subcategories used by pupils in SCENARIO 1 for schemes A and B, according to GENDER (Girl/Boy/NR: Non-response). The categories are presented in descending order of frequency observed for the three scenarios, with the Don't Know category presented last. (Reprod. capacity: Reproduction capacity; Intersp. interact.: Interspecific interaction; General conserv.: General conservation; Sat. human int.: Satisfaction of human interest).

CATEGORY Subcategory	Scheme A								Scheme B								TOTAL	
	All		Girl		Boy		NR		All		Girl		Boy		NR			
	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%
DIVERSITY																		
Abundance	53	5.9	26	5.1	27	7.5	0	0.0	59	33.5	40	37.0	17	29.8	2	18.2	112	10.4
Diversity value	167	18.5	100	19.8	61	17.0	6	15.4	11	6.3	7	6.5	4	7.0	0	0.0	178	16.5
Evenness	408	45.2	239	47.3	158	44.0	11	28.2	6	3.4	3	2.8	3	5.3	0	0.0	414	38.4
Richness	37	4.1	20	4,0	15	4.2	2	5.1	10	5.7	8	7.4	2	3.5	0	0.0	47	4.4
ECOLOGICAL DYNAMICS																		
Reprod. capacity	18	2.0	11	2.2	7	1.9	0	0.0	2	1.1	1	0.9	0	0.0	1	9.1	20	1.9
Trophic structure	15	1.7	11	2.2	3	0.8	1	2.6	20	11.4	10	9.3	7	12.3	3	27.3	35	3.2
Spatial interaction	14	1.6	7	1.4	4	1.1	3	7.7	1	0.6	1	0.9	0	0.0	0	0.0	15	1.4
Naturalness	9	1.0	5	1.0	4	1.1	0	0.0	6	3.4	2	1.9	4	7.0	0	0.0	15	1.4
Intersp. interact.	19	2.0	10	2.0	7	2.0	1	2.6	4	2.3	3	2.8	1	1.8	0	0.0	22	2.1
CONSERVATION																		
General conserv.	9	1.0	4	0.8	4	1.1	1	2.6	2	1.1	1	0.9	0	0.0	1	9.1	11	1.0
Extinction risk	41	4.5	24	4.8	16	4.5	1	2.6	4	2.3	4	3.7	0	0.0	0	0.0	45	4.2
AUTHORITARIANISM																		
Authoritarianism	26	2.9	12	2.4	13	3.6	1	2.6	17	9.7	9	8.3	6	10.5	2	18.2	43	4.0
EVOLUTION																		
Speciation	5	0.6	3	0.6	2	0.6	0	0.0	1	0.6	0	0.0	1	1.8	0	0.0	6	0.6
AESTHETICS																		
Aesthetics	25	2.8	10	2.0	10	2.8	5	12.8	6	3.4	3	2.8	3	5.3	0	0.0	31	2.9
SOCIAL DYNAMICS																		
Sat. human int.	5	0.6	2	0.4	3	0.8	0	0.0	8	4.5	4	3.7	4	7.0	0	0.0	13	1.2
ETHICS																		
Ethics	12	1.3	9	1.8	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	1.1
EGOCENTRISM																		
Egocentrism	6	0.7	3	0.6	1	0.3	2	5.1	3	1.7	3	2.8	0	0.0	0	0.0	9	0.8
DON'T KNOW																		
Don't know	35	3.9	9	1.8	21	5.8	5	12.8	16	9.1	9	8.3	5	8.8	2	18.2	51	4.7
TOTAL	903	100	505	100	359	100	39	100	176	100	108	100	57	100	11	100	1079	100

Table S1-2. Number (N_a) and percentage (%) of the main argument categories and subcategories used by pupils in SCENARIO 2 for schemes C and D, according to GENDER (Girl/Boy/NR: Non-response). The categories are presented in descending order of frequency observed for the three scenarios, with the DK (Don't Know) category presented last. (Reprod. capac.: Reproduction capacity; Intersp. interact.: Interspecific interaction; General conserv.: General conservation; Sp. introd. threats: Species introduction threats; Sat. human int.: Satisfaction of human interest).

CATEGORY	**Scheme C**								**Scheme D**								**TOTAL**	
Subcategory	**All**		**Girl**		**Boy**		**NR**		**All**		**Girl**		**Boy**		**NR**			
	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%
DIVERSITY																		
Abundance	17	2.4	11	2.7	5	2.0	1	3.7	22	11.9	14	16.7	8	8.8	0	0.0	39	4.4
Diversity value	201	28.9	121	29.2	73	28.7	7	25.9	13	7.0	7	8.3	5	5.5	1	10.0	214	24.3
Evenness	43	6.2	17	4.1	26	10.2	0	0.0	38	20.5	20	23.8	18	19.8	0	0.0	81	9.2
Richness	291	41.8	186	44.8	97	38.2	8	29.6	20	10.8	8	9.5	11	12.1	1	10.0	311	35.3
ECOLOGICAL DYNAMICS																		
Reprod. capacity	6	0.9	6	1.4	0	0.0	0	0.0	5	2.7	1	1.2	4	4.4	0	0.0	11	1.2
Trophic structure	7	1.0	5	1.2	2	0.8	0	0.0	3	1.6	3	3.6	0	0.0	0	0.0	10	1.1
Spatial interaction	2	0.3	1	0.2	1	0.4	0	0.0	3	1.6	2	2.4	1	1.1	0	0.0	5	0.6
Naturalness	7	1.0	6	1.4	1	0.4	0	0.0	4	2.2	2	2.4	2	2.2	0	0.0	11	1.2
Intersp. interaction	3	0.4	1	0.2	2	0.8	0	0.0	3	1.6	1	1.2	2	2.2	0	0.0	6	0.7
CONSERVATION																		
General conserv.	3	0.4	2	0.5	0	0.0	1	3.7	0	0.0	0	0.0	0	0.0	0	0.0	3	0.3
Sp. introd. threats	0	0.0	0	0.0	0	0.0	0	0.0	2	1.1	1	1.2	1	1.1	0	0.0	2	0.2
Extinction risk	12	1.7	7	1.7	4	1.6	1	3.7	7	3.8	5	6.0	2	2.2	0	0.0	19	2.2
AUTHORITARIANISM																		
Authoritarianism	28	4.0	14	3.4	10	3.9	4	14.8	23	12.4	9	10.7	13	14.3	1	10.0	51	5.8
EVOLUTION																		
Speciation	9	1.3	6	1.4	3	1.2	0	0.0	4	2.2	1	1.2	3	3.3	0	0.0	13	1.5
AESTHETICS																		
Aesthetics	15	2.2	6	1.4	7	2.8	2	7.4	13	7.0	0	0.0	10	11.0	3	30.0	28	3.2
SOCIAL DYNAMICS																		
Sat. human int.	8	1.1	6	1.4	2	0.8	0	0.0	2	1.1	1	1.2	0	0.0	1	10.0	10	1.1
ETHICS																		
Ethics	2	0.3	1	0.2	1	0.4	0	0.0	1	0.5	1	1.2	0	0.0	0	0.0	3	0.3
EGOCENTRISM																		
Egocentrism	7	1.0	4	1.0	3	1.2	0	0.0	1	0.5	1	1.2	0	0.0	0	0.0	8	0.9
DON'T KNOW																		
Don't know	35	5.0	15	3.6	17	6.7	3	11.1	21	11.4	7	8.3	11	12.1	3	30.0	56	6.4
TOTAL	696	100	415	100	254	100	27	100	185	100	84	100	91	100	10	100	881	100

Table S1-3. Number (N_a) and percentage (%) of the main categories and subcategories of arguments used by pupils in SCENARIO 3 for schemes E and F, according to GENDER (Girl/Boy/NR: Non-response). The categories are presented in descending order of frequency observed for the three scenarios, with the DK (Don't Know) category presented last. (Reprod. capacity: Reproduction capacity; Colonization mode–A: Artificial colonization mode; Colonization mode–N: Natural colonization mode; Intersp. interaction: Interspecific interaction; Sp. introd. threats: Species introduction' threats; Adaptation–Orig.: Adaption in original habitat; Adaptation–New: Adaptation to a new habitat; Sat. human int.: Satisfaction of human interest).

CATEGORY / Subcategory	Scheme E								Scheme F								TOTAL	
	All		Girl		Boy		NR		All		Girl		Boy		NR			
	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%
DIVERSITY																		
Abundance	7	1.8	5	2.2	2	1.4	0	0.0	13	2.3	6	1.9	6	2.6	1	4.3	20	2.1
Diversity value	68	17.4	37	16.2	26	17.7	5	33.3	14	2.4	4	1.3	8	3.4	2	8.7	82	8.5
Evenness	14	3.6	7	3.1	7	4.8	0	0.0	22	3.8	9	2.8	13	5.6	0	0.0	36	3.7
Richness	148	37.9	89	39.0	55	37.4	4	26.7	30	5.2	16	5.0	13	5.6	1	4.3	178	18.4
ECOLOGICAL DYNAMICS																		
Reprod. capacity	1	0.3	1	0.4	0	0.0	0	0.0	6	1.1	3	0.9	3	1.3	0	0.0	7	0.7
Colonization mode–A	25	6.4	19	8.3	6	4.1	0	0.0	29	5.1	20	6.3	9	3.9	0	0.0	54	5.6
Colonization mode-N	7	1.8	6	2.6	1	0.7	0	0.0	116	20.2	77	24.1	37	15.9	2	8.7	123	12.7
Trophic structure	3	0.8	2	0.9	1	0.7	0	0.0	5	0.9	5	1.6	0	0.0	0	0.0	8	0.8
Spatial interaction	1	0.3	1	0.4	0	0.0	0	0.0	5	0.9	3	0.9	1	0.4	1	4.3	6	0.6
Naturalness	0	0.0	0	0.0	0	0.0	0	0.0	58	10.1	37	11.6	20	8.6	1	4.3	58	6.0
Intersp. interaction	0	0.0	0	0.0	0	0.0	0	0.0	9	1.6	6	1.9	3	1.3	0	0.0	9	0.9
CONSERVATION																		
General conservation	2	0.5	2	0.9	0	0.0	0	0.0	12	2.1	4	1.3	7	3.0	1	4.3	14	1.5
Ethnocentrism	2	0.5	2	0.9	0	0.0	0	0.0	32	5.6	15	4.7	17	7.3	0	0.0	34	3.5
Sp. introd. threats	3	0.8	3	1.3	0	0.0	0	0.0	68	11.8	39	12.2	27	11.6	2	8.7	71	7.4
Extinction risk	6	1.5	3	1.3	3	2.0	0	0.0	17	3.0	12	3.8	4	1.7	1	4.3	23	2.4
AUTHORITARIANISM																		
Authoritarianism	24	6.2	9	3.9	13	8.8	2	13.3	26	4.5	9	2.8	15	6.4	2	8.7	50	5.2
EVOLUTION																		
Adaptation–Orig.	0	0.0	0	0.0	0	0.0	0	0.0	29	5.0	15	4.7	12	5.2	2	8.7	29	3.0
Adaptation–New	4	1.0	3	1.3	1	0.7	0	0.0	22	3.8	16	5.0	6	2.6	0	0.0	26	2.7
Speciation	3	0.8	2	0.9	1	0.7	0	0.0	8	9.4	4	1.2	4	1.7	0	0.0	11	1.1
AESTHETICS																		
Aesthetics	13	3.3	6	2.6	4	2.7	3	20.0	9	1.6	0	0.0	6	2.6	3	13.0	22	2.3
SOCIAL DYNAMICS																		
Sat. human int.	13	3.3	8	3.5	5	3.4	0	0.0	7	1.2	4	1.3	2	0.9	1	4.3	20	2.1
ETHICS																		
Ethics	7	1.8	4	1.8	3	2.0	0	0.0	9	1.6	5	1.6	3	1.3	1	4.3	16	1.7
EGOCENTRISM																		
Egocentrism	3	0.8	2	0.9	1	0.7	0	0.0	2	0.3	2	0.6	0	0.0	0	0.0	5	0.5
DON'T KNOW																		
Don't know	36	9.2	17	7.5	18	12.2	1	6.7	27	4.7	8	2.5	17	7.3	2	8.7	63	6.5
TOTAL	390	100	228	100	147	100	15	100	575	100	319	100	233	100	23	100	965	100

SUPPLEMENTARY MATERIAL - 2

Tables S2. Frequency results considering the argument categories and school level

Table S2-1. Number (N_a) and percentage (%) of the main argument categories and subcategories used by pupils in SCENARIO 1 for schemes A and B, according to SCHOOL LEVEL (MS: Middle School; HS: High School). The categories are presented in descending order of frequency observed for the three scenarios, with the Don't Know category presented last. (Satisfact. human interest: Satisfaction of human interest).

CATEGORY / Subcategory	Scheme A						Scheme B						TOTAL	
	All		MS		HS		All		MS		HS			
	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%
DIVERSITY														
Abundance	53	5.9	36	6.9	17	4.4	59	33.5	41	36.6	18	28.1	112	10.4
Diversity value	167	18.5	90	17.3	77	20.1	11	6.3	10	8.9	1	1.6	178	16.5
Evenness	408	45.2	214	41.2	194	50.5	6	3.4	2	1.8	4	6.3	414	38.4
Richness	37	4.1	31	6.0	6	1.6	10	5.7	9	8.0	1	1.6	47	4.4
ECOLOGICAL DYNAMICS														
Reproduction capacity	18	2.0	11	2.1	7	1.8	2	1.1	1	0.9	1	1.6	20	1.9
Trophic structure	15	1.7	2	0.4	13	3.4	20	11.4	4	3.6	16	25.0	35	3.2
Spatial interaction	14	1.6	8	1.5	6	1.6	1	0.6	1	0.9	0	0.0	15	1.4
Naturalness	9	1.0	4	0.8	5	1.3	6	3.4	1	0.9	5	7.8	15	1.4
Interspecific interaction	18	2.0	12	2.3	6	1.5	4	2.3	3	2.7	1	1.6	22	2.1
CONSERVATION														
General conservation	9	1.0	6	1.2	3	0.8	2	1.1	1	0.9	1	1.6	11	1.0
Extinction risk	41	4.5	23	4.4	18	4.7	4	2.3	1	0.9	3	4.7	45	4.2
AUTHORITARIANISM														
Authoritarianism	26	2.9	16	3.1	10	2.6	17	9.7	16	14.3	1	1.6	43	4.0
EVOLUTION														
Speciation	5	0.6	3	0.6	2	0.5	1	0.6	1	0.9	0	0.0	6	0.6
AESTHETICS														
Aesthetics	25	2.8	16	3.1	9	2.3	6	3.4	6	5.4	0	0.0	31	2.9
SOCIAL DYNAMICS														
Satisfact. human interest	5	0.6	3	0.6	2	0.5	8	4.5	4	3.6	4	6.3	13	1.2
ETHICS														
Ethics	12	1.3	11	2.1	1	0.3	0	0.0	0	0.0	0	0.0	12	1.1
EGOCENTRISM														
Egocentrism	6	0.7	6	1.2	0	0.0	3	1.7	3	2.7	0	0.0	9	0.8
DON'T KNOW														
Don't know	35	3.9	27	5.2	8	2.1	16	9.1	8	7.1	8	12.5	51	4.7
TOTAL	903	100	519	100	384	100	176	100	112	100	64	100	1079	100

Table S2-2. Number (N_a) and percentage (%) of the main categories and subcategories of arguments used by pupils in SCENARIO 2 for schemes D and E, according to SCHOOL LEVEL (MS: Middle School; HS: High School). The categories are presented in descending order of frequency observed for the three scenarios, with the DK (Don't Know) category presented last. (Species introd. threats: Species introduction' threats; Sat. human int.: Satisfaction of human interest).

CATEGORY / Subcategory	Scheme C						Scheme D						TOTAL	
	All		MS		HS		All		MS		HS			
	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%	N_a	%
DIVERSITY														
Abundance	17	2.4	13	3.3	4	1.3	22	11.9	9	8.2	13	17.3	39	4.4
Diversity value	201	28.9	77	19.4	124	41.3	13	7.0	8	7.3	5	6.7	214	24.3
Evenness	43	6.2	20	5.1	23	7.7	38	20.5	27	24.5	11	14.7	81	9.2
Richness	291	41.8	192	48.5	99	33.0	20	10.8	11	10.0	9	12.0	311	35.3
ECOLOGICAL DYNAMICS														
Reproduction capacity	6	0.9	2	0.5	4	1.3	5	2.7	2	1.8	3	4.0	11	1.2
Trophic structure	7	1.0	3	0.8	4	1.3	3	1.6	0	0.0	3	4.0	10	1.1
Spatial interaction	2	0.3	1	0.3	1	0.3	3	1.6	2	1.8	1	1.3	5	0.6
Naturalness	7	1.0	4	1.0	3	1.0	4	2.2	3	2.7	1	1.3	11	1.2
Interspecific interaction	3	0.4	0	0.0	3	1.0	3	1.6	2	1.8	1	1.3	6	0.7
CONSERVATION														
General conservation	3	0.4	2	0.5	1	0.3	0	0.0	0	0.0	0	0.0	3	0.3
Species introd. threats	0	0.0	0	0.0	0	0.0	2	1.1	0	0.0	2	2.7	2	0.2
Extinction risk	12	1.7	8	2.0	4	1.3	7	3.8	3	2.7	4	5.3	19	2.2
AUTHORITARIANISM														
Authoritarianism	28	4.0	21	5.3	7	2.3	23	12.4	16	14.5	7	9.3	51	5.8
EVOLUTION														
Speciation	9	1.3	5	1.3	4	1.3	4	2.2	2	1.8	2	2.6	13	1.5
AESTHETICS														
Aesthetics	15	2.2	14	3.5	1	0.3	13	7.0	8	7.3	5	6.7	28	3.2
SOCIAL DYNAMICS														
Sat. human interest	8	1.1	3	0.8	5	1.7	2	1.1	1	0.9	1	1.3	10	1.1
ETHICS														
Ethics	2	0.3	1	0.3	1	0.3	1	0.5	1	0.9	0	0.0	3	0.3
EGOCENTRISM														
Egocentrism	7	1.0	4	1.0	3	1.0	1	0.5	1	0.9	0	0.0	8	0.9
DON'T KNOW														
Don't know	35	5.0	26	6.6	9	3.0	21	11.4	14	12.7	7	9.3	56	6.4
TOTAL	696	100	396	100	300	100	185	100	110	100	75	100	881	100

Table S2-3. Number (N_a) and percentage (%) of the main categories and subcategories of arguments used by pupils in SCENARIO 3 for schemes E and F, according to SCHOOL LEVEL (MS: Middle School; HS: High School). The categories are presented in descending order of frequency observed for the three scenarios, with the DK (Don't Know) category presented last. (Colonization mode–A: Artificial colonization mode; Colonization mode–N: Natural colonization mode; Species introd. threats: Species introduction' threats; Adaptation–Orig.: Adaption in original habitat; Adaptation–New: Adaptation to a new habitat; Sat. human int.: Satisfaction of human interest).

CATEGORY	**Scheme E**						**Scheme F**						**TOTAL**	
	All		**MS**		**HS**		**All**		**MS**		**HS**			
Subcategory	**N_a**	**%**	**N_a**	**%**	**N_a**	**%**	**N_a**	**%**	**N_a**	**%**	**N_a**	**%**	**N_a**	**%**
DIVERSITY														
Abundance	7	1.8	4	1.5	3	2.5	13	2.3	8	3.0	5	1.6	20	2.1
Diversity value	68	17.4	35	13.0	33	27.3	14	2.4	6	2.2	8	2.6	82	8.5
Evenness	14	3.6	9	3.3	5	4.1	22	3.8	10	3.7	12	3.9	36	3.7
Richness	148	37.9	111	41.3	37	30.6	30	5.2	25	9.4	5	1.6	178	18.4
ECOLOGICAL DYNAMICS														
Reproduction capacity	1	0.3	0	0.0	1	0.8	6	1.1	4	1.5	0	0.0	7	0.7
Colonization mode–A	25	6.4	18	6.7	7	5.8	29	5.1	7	2.6	22	7.1	54	5.6
Colonization mode–N	7	1.8	4	1.5	3	2.5	116	20.2	58	21.7	58	18.8	123	12.7
Trophic structure	3	0.8	1	0.4	2	1.7	5	0.9	0	0.0	5	1.6	8	0.8
Spatial interaction	1	0.3	1	0.4	0	0.0	5	0.9	5	1.9	0	0.0	6	0.6
Naturalness	0	0.0	0	0.0	0	0.0	58	10.1	26	9.7	32	10.4	58	6.0
Interspecific interaction	0	0.0	0	0.0	0	0.0	9	1.6	2	0.7	7	2.3	9	0.9
CONSERVATION														
General conservation	2	0.5	1	0.4	1	0.8	12	2.1	3	1.1	9	2.9	14	1.5
Ethnocentrism	2	0.5	1	0.4	1	0.8	32	5.6	16	6.0	16	5.2	34	3.5
Species introd. threats	3	0.8	2	0.7	1	0.8	68	11.8	18	6.7	50	16.2	71	7.4
Extinction risk	6	1.5	5	1.9	1	0.8	17	3.0	2	0.7	15	4.9	23	2.4
AUTHORITARIANISM														
Authoritarianism	24	6.2	19	7.1	5	4.1	26	4.5	19	7.1	7	2.3	50	5.2
EVOLUTION														
Adaptation–Orig.	0	0.0	0	0.0	0	0.0	29	5.0	13	4.9	16	5.2	29	3.0
Adaptation–New	4	1.0	2	0.7	2	1.7	22	3.8	9	3.4	13	4.2	26	2.7
Speciation	3	0.8	2	0.7	1	0.8	8	1.4	3	1.1	5	1.6	11	1.1
AESTHETICS														
Aesthetics	13	3.3	11	4.1	2	1.7	9	1.6	6	2.2	3	1.0	22	2.3
SOCIAL DYNAMICS														
Sat. human interest	13	3.3	9	3.3	4	3.3	7	1.2	4	1.5	3	1.0	20	2.1
ETHICS														
Ethics	7	1.8	3	1.1	4	3.3	9	1.6	3	1.1	6	1.9	16	1.7
EGOCENTRISM														
Egocentrism	3	0.8	2	0.7	1	0.8	2	0.3	2	0.7	0	0.0	5	0.5
DON'T KNOW														
Don't know	36	9.2	29	10.8	7	5.8	27	4.7	18	6.7	9	2.9	63	6.5
TOTAL	390	100	269	100	121	100	575	100	267	100	308	100	965	100