

Supplementary Material

Title: Threat perception, emotions and social trust of global bat experts before and during the COVID-19 pandemic

Table S1: Concepts and items used in survey.

Concept	Items	Comments	Measured
Emotions	Respondents were asked to rate how they felt when they were thinking about bats (without Pteropodidae) and to Pteropodidae. The following six discrete emotions were provided: joy, interest, compassion, fear, anger and sadness.	We tested for Pteropodidae separately given that due to their diet (e.g. nectar, pollen and fruits) they are prominent group when it comes to conflicts with fruit farmers and they are a target group when it comes to wildlife traffic and hunting (Mickleburg et al., 2002). Given this specific position of Pteropodidae within the order bats (Chiroptera) that may lead into different experiences, threats and probably emotions, we accounted for Pteropodidae	Scale 1 (not at all) to 7 (completely).

		<p>separately. Nevertheless, ratings were similar between both options (see Table S2). Hence, average scores for both bats (without Pteropodidae) and Pteropodidae were combined and were consequently presented as overall <i>emotions towards bats</i>.</p>	
Threat perception	<p>Ten threats to bats were selected from the IUCN assessment to bats (Mickleburg et al., 2002; Frick et al., 2019). Participants could rate how much they considered each threat as a major threat to bats: habitat destruction, habitat modification, roost disturbance, persecution, myths, hunting and trade (Pteropodidae), wind turbines (all other bats without Pteropodidae since no effect of wind turbines yet reported), overexploitation, disease and predators.</p>	<p>Perceived threats for bats (without Pteropodida) and Pteropodidae were similar (see supp. material Table S3) and consequently also combined and presented hereafter as overall <i>threat perception</i>.</p>	<p>Scale 1 (not at all) to 7 (very strong).</p>

Trust	Trust was assessed in relation to the decision making of seven different stakeholders including: national and local authorities, environmental and animal welfare NGOs, researchers and the public to do what is right for bat conservation. Participants could rate their level of agreement in response to the question “Overall, to what extent do you trust [...] to do what is right for bat conservation?” (adapted from Manfredo et al., 2017a.	We also included the public given that they can also ‘hold a stake’ when it comes to wildlife management (e.g. supporting or opposing management decisions).	Scale 1 (strongly agree) to 7 (strongly disagree).
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Table S2: Average rating for emotions towards bats and Pteropodidae on a 7- point scale (1 = 'not at all' to 7 = 'very strong').

Bats	mean	Pteropodidae	Mean
Joy	6.2	Joy	6.3
Fear	1.4	Fear	1.4
Surprise	3.7	Surprise	4.2
Anger	1.7	Anger	1.1
Disgust	1.2	Disgust	1.1
Sadness	2.2	Sadness	2.2
Interest	6.8	Interest	6.5
Compassion	5.6	Compassion	5.6

Table S3: Average rating for threat perception of bats and Pteropodidae on a 7- point scale (1 = 'not at all' to 7 = 'very strong').

Bats	mean	Pteropodidae	mean
Habitat destruction	6,4	Habitat destruction	6,4
Habitat modification	6,0	Habitat modification	5,8
Roost disturbance	5,4	Roost disturbance	5,6
Disease	4,2	Disease	4,0
Persecution	4,3	Persecution	4,0
Predators	3,9	Predators	3,4
Overexploitation	3,4	Overexploitation	5,1
Wind turbines	4,7	Hunting and Trade	5,2
Myths	4,3	Myths	4,9

Table S4: Exploratory factor analysis with varimax rotation for threats before and during the pandemic. Analyses continued with factors during the pandemic (in grey).

Threats	Before (3 factors explaining 68% the data)			During (3 factors explaining 65% the data)		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
	44 %	30 %	26 %	38 %	34 %	28 %
	proportion explained	proportion explained	proportion explained	proportion explained	proportion explained	proportion explained
Overexploitation			0.52	0.78		
Hunting and Trade			0.52	0.66		
Wind turbines	0.50			0.55		
Predators	0.61			0.52		
Disease	0.63					
Habitat destruction		0.69			0.93	
Habitat modification		0.72			0.68	
Habitat disturbance		0.57			0.64	
Persecution	0.70					0.86
Myths	0.66					0.74

Table S5: Exploratory factor analysis with varimax rotation for trust before and during the pandemic. Analyses continued with factors during the pandemic (in grey).

Trust	Before (3 factors explaining 74% the data)			During (3 factors explaining 75% the data)		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
	42 %	34 %	25 %	43 % proportion explained	35 %	22 %
	proportion explained	proportion explained	proportion explained	proportion explained	proportion explained	proportion explained
Local authorities	0.83			0.88		
National authorities	0.80			0.83		
Environmental NGOs		0.63			0.76	
Animal welfare NGOs		0.66			0.59	

Researchers
Public
Volunteers

0.62
0.59



0.55
0.64

Table S6: Countries of respondents (n = 815) from 77 countries grouped into the eight value clusters from the world value survey (2020).

Value cluster (# respondents, % of all responses)	Countries of respondents
English-Speaking (all: n = 333, 40.9 %)	Australia, Canada, New Zealand, Scotland, UK, USA
Catholic Europe (all: n = 187, 22.9 %)	Austria, Belgium, Croatia, Czech Republic, Estonia, France, Hungary, Italy, Slovakia, Slovenia, Spain, Portugal, Poland
Protestant Europe (all: n = 126, 15.5 %)	Denmark, Finland, Germany, the Netherlands, Norway, Sweden, Switzerland,
African-islamic (all: n = 20, 2.5 %)	Albania, Azerbaijan, India, Indonesia, Jordan, Lebanon, Nigeria, Rwanda, Uganda, Zambia
West and South Asia (all: n = 29, 3.6 %)	Israel, Malaysia, Singapore, South Africa, Thailand,
Latin America (all: n = 24, 2.9 %)	Argentina, Bolivia, Brazil, Ecuador, Mexico, Peru, Philippines, Puerto Rico
Orthodox Europe (all: n = 22, 2.7 %)	Algeria, Bosnia, Bulgaria, Georgia, Greece, Romania, Serbia, Ukraine,

Confucian (all: n = 9, 1%)

NA (all: n = 65, 8%), i.e. not involved in the World Value Survey

Japan, Taiwan, Hongkong,

Bhutan, Cameroun, Chile, Costa Rica, El Salvador,

Ireland, Kenya, Laos, Latvia, Madagascar, Malta,

Mauritius, Mozambique, Nepal, Panama,

Paraguay

Table S7: Number of comments to the open question per category and country, nc = no comments were provided to the open question whereas 0 means that other comments were provided except in this category.

Country	Media coverage	Roost destruction	Request kill bats	Forced stop research	Spillover	Fear in general (e.g. in roosts)	Nothing	Other (e.g. habitat loss)	#Comments/ country	#Participants/ country
Albania	0	0	0	0	0	0	1	0	1	2
Algeria	0	1	0	0	0	0	0	0	1	2
Argentina	nc	nc	Nc	nc	nc	Nc	nc	nc	nc	1
Australia	4	0	4	0	0	0	1	0	9	48
Austria	nc	nc	Nc	nc	nc	Nc	nc	nc	nc	2
Azerbaijan	0	1	1	0	0	0	0	0	2	1
Belgium	1	3	2	0	0	0	1	0	7	12
Bhutan	nc	nc	nc	nc	nc	Nc	nc	nc	nc	1
Bolivia	0	1	0	0	0	0	0	0	1	2
Bosnia	nc	nc	nc	nc	nc	Nc	nc	nc	nc	1
Brazil	nc	nc	nc	nc	nc	Nc	nc	nc	nc	1
Bulgaria	1	1	1	0	0	0	1	0	4	5
Cameroun	0	0	0	0	0	0	0	1	1	6

Canada	6	1	0	1	5	4	3	1	21	49
Chile	nc	1								
Costa Rica	nc	3								
Croatia	2	1	1	0	0	0	1	0	5	13
Czech Republic	0	0	0	0	0	0	1	0	1	5
Denmark	nc	2								
Ecuador	nc	1								
El Salvador	0	1	2	0	1	0	0	0	4	1
Estonia	1	0	0	0	0	0	0	0	1	3
Finland	0	0	0	0	0	0	1	0	1	2
France	3	4	1	0	2	0	10	5	25	91
Georgia	nc	1								
Germany	3	5	1	1	3	3	10	1	27	83
Greece	0	1	0	0	0	0	0	0	1	1
Hong Kong	nc	3								
Hungary	0	0	0	0	0	0	1	0	1	3
India	0	0	0	0	1	0	0	0	1	8
Indonesia	nc	1								
Ireland	0	0	0	0	0	0	1	0	1	10
Israel	nc	6								
Italy	2	1	0	0	0	1	1	2	7	10
Japan	0	0	0	0	1	0	2	0	3	4
Jordan	0	0	0	0	0	0	1	0	1	1
Kenya	0	1	1	0	0	1	0	0	3	2
Laos	nc	1								
Latvia	0	0	0	0	0	0	1	0	1	2
Lebanon	nc	1								
Madagascar	0	0	0	0	0	0	0	1	1	1
Malaysia	0	2	2	0	2	1	1	0	8	10
Malta	nc	1								
Mauritius	1	0	1	0	0	0	0	0	2	2

Mexico	1	2	2	0	0	0	0	0	5	11
Mozambique	nc	1								
Nepal	nc	3								
the										
Netherlands	2	2	2	0	0	0	0	0	6	7
New Zealand	1	0	0	0	1	0	0	0	2	3
Nigeria	nc	1								
Norway	1	0	0	0	0	1	0	0	2	2
Panama	nc	2								
Paraguay	0	0	0	0	0	0	0	1	1	1
Peru	1	1	0	0	1	0	0	0	3	3
Philippines	nc	2								
Poland	1	3	2	0	0	1	0	0	7	7
Portugal	1	0	0	0	1	2	3	0	7	18
Puerto Rico	0	0	0	0	0	0	1	0	1	3
Romania	nc	4								
Rwanda	nc	2								
Saudi Arabia	1	0	0	0	1	0	0	0	2	2
Scotland	nc	3								
Serbia	2	0	0	0	0	0	0	0	2	6
Singapore	0	0	0	0	0	0	1	0	1	3
Slovakia	1	0	0	0	0	0	0	0	1	2
Slovenia	1	0	0	0	2	1	0	0	4	4
South Africa	3	4	0	0	2	4	1	2	16	9
Spain	4	5	0	1	3	2	0	0	15	17
Sweden	nc	2								
Switzerland	2	0	0	0	2	5	2	0	11	28
Taiwan	nc	2								
Thailand	nc	1								
Uganda	0	1	0	0	0	1	0	0	2	1
UK	17	2	3	1	8	3	14	2	50	85

Ukraine	1	0	0	0	1	1	1	0	4	4
USA	13	3	1	1	11	0	18	3	50	145
Zambia	2	1	1	0	0	0	0	0	4	1

Recruitment of participants in survey

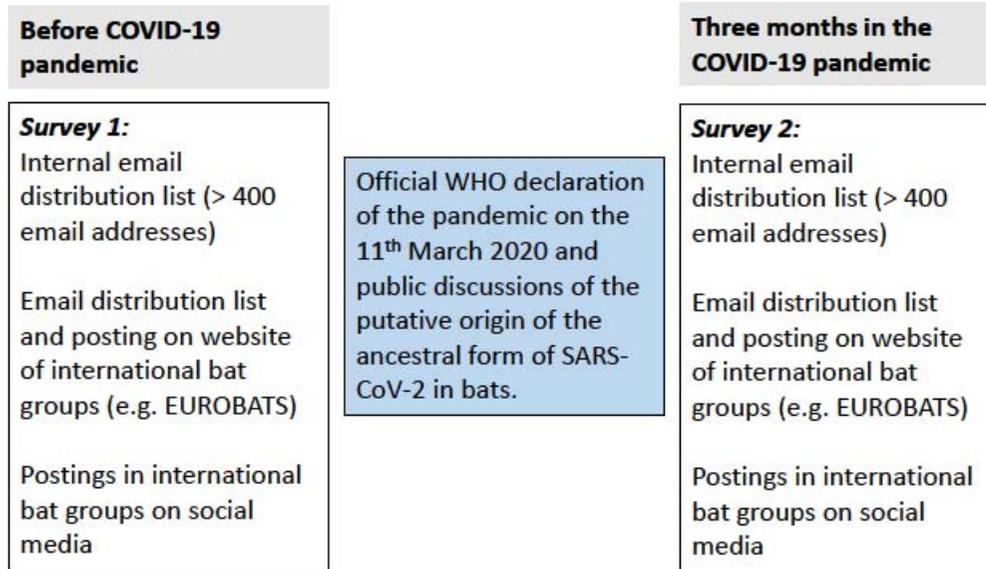


Figure S1: Recruitment process of both surveys.