The World Archives of Species Perception

Method & database to research public perception of species

Presenter: Tuan Nguyen

Brief background introduction

Ecological economist by training

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World Archives of Species Perception (WASP)

Interdisciplinary research project using biodiversity data (IUCN & iNaturalist data) for social science research

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World Archives of Species Perception project

IPBES Fellow

Business & Biodiversity Assessment

Review the potentials for using biodiversity data, tools and methods in guiding business actions to deliver the 2050 Vision for Biodiversity (KMGBF)

ipbes Science and Policy for People and Nature

Why is public perception relevant for biodiversity conservation?

Biophilia Hypothesis - Kellert & Wilson (1993)

Nature can trigger both positive feelings ('biophilia') and negative feelings ('biophobia').

We are naturally drawn toward species that trigger **positive feelings** than negative ones.

The feelings are linked to our early perception of nature and continuously built up over time, as part of a **complex, adaptive, biocultural learning process.**

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Public perception and species conservation

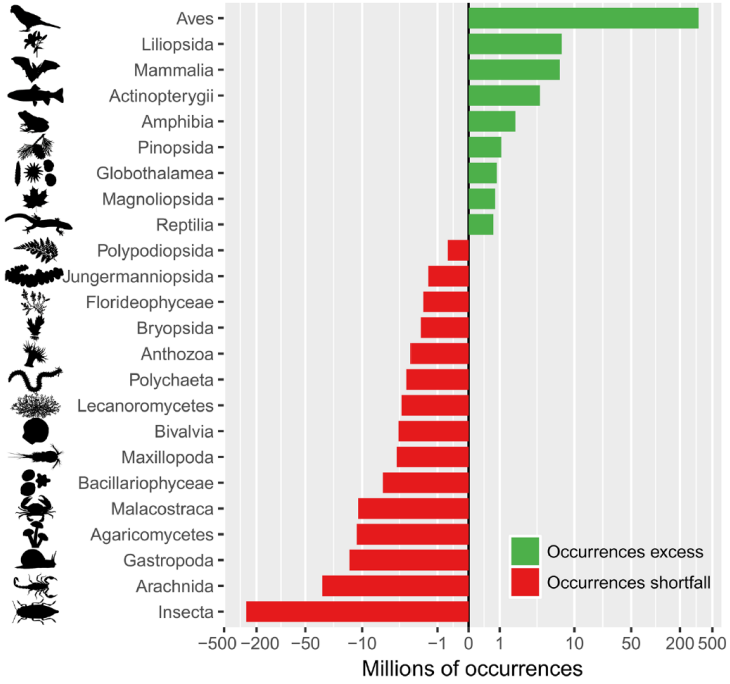
Perception influence species conservation in several ways, for example:

Influence	Example
Policymakers' choice of species to protect	Charismatic but low ecological relevance butterflies in the EU Habitat Directive (Habel et al., 2021)
Scientists' choice of species to research	Plant scientists' research attention is skewed towards colourful, conspicuous and broadly distributed flowers (Adamo et al., 2021)
Zoos' choice of species to promote	WAZA zoos globally promote invertebrate in less than 1% of their social media communications (Nguyen et al., in prep.)
General public	Public support and engagement in conservation
Financial flow and fundings for species conservation	Funding for giant panda conservation

Public perception and species conservation

	Estimated Number of described species[1]	Number of species evaluated by 2023 (IUCN Red List version 2023-1)	% of described species evaluated by 2023 (IUCN Red List version 2023-1)	Number of threatened species[2] by 2023 (IUCN Red List version 2023-1)
VERTEBRATES				
Mammals [5]	6,631	5,980	90%	1,339
Birds	11,197	11,197	100%	1,354
Reptiles	12,060	10,254	85%	1,848
Amphibians	8,707	8,020	92%	2,876
Fishes	36,367	27,042	74%	3,778
Subtotal	**74,962**	**62,493**	**83%**	**11,195**
INVERTEBRATES				
Insects	1,053,578	12,568	1.2%	2,361
Molluscs	86,254	9,063	11%	2,409
Crustaceans[6]	84,382	3,207	4%	746
Corals	5,614	830	15%	253
Arachnids	92,766	591	0.64%	268
Velvet Worms	210	11	5%	9
Horseshoe Crabs	4	4	100%	2
Others	157,543	1,089	0.69%	173
Subtotal	**1,480,351**	**27,363**	**2%**	**6,221**
PLANTS [7]				
Mosses [8]	21,925	327	1.5%	181
Ferns and Allies [9]	11,800	814	7%	316
Gymnosperms	1,113	1,059	95%	450
Flowering Plants	369,000	64,240	17%	25,320
Green Algae [10]	13,644	17	0.1%	0
Red Algae [10]	7,553	78	1.0%	9
Subtotal	**425,035**	**66,535**	**16%**	**26,276**

Bias in knowledge of species status
(IUCN Red List)



Bias in species monitoring data
(GBIF)

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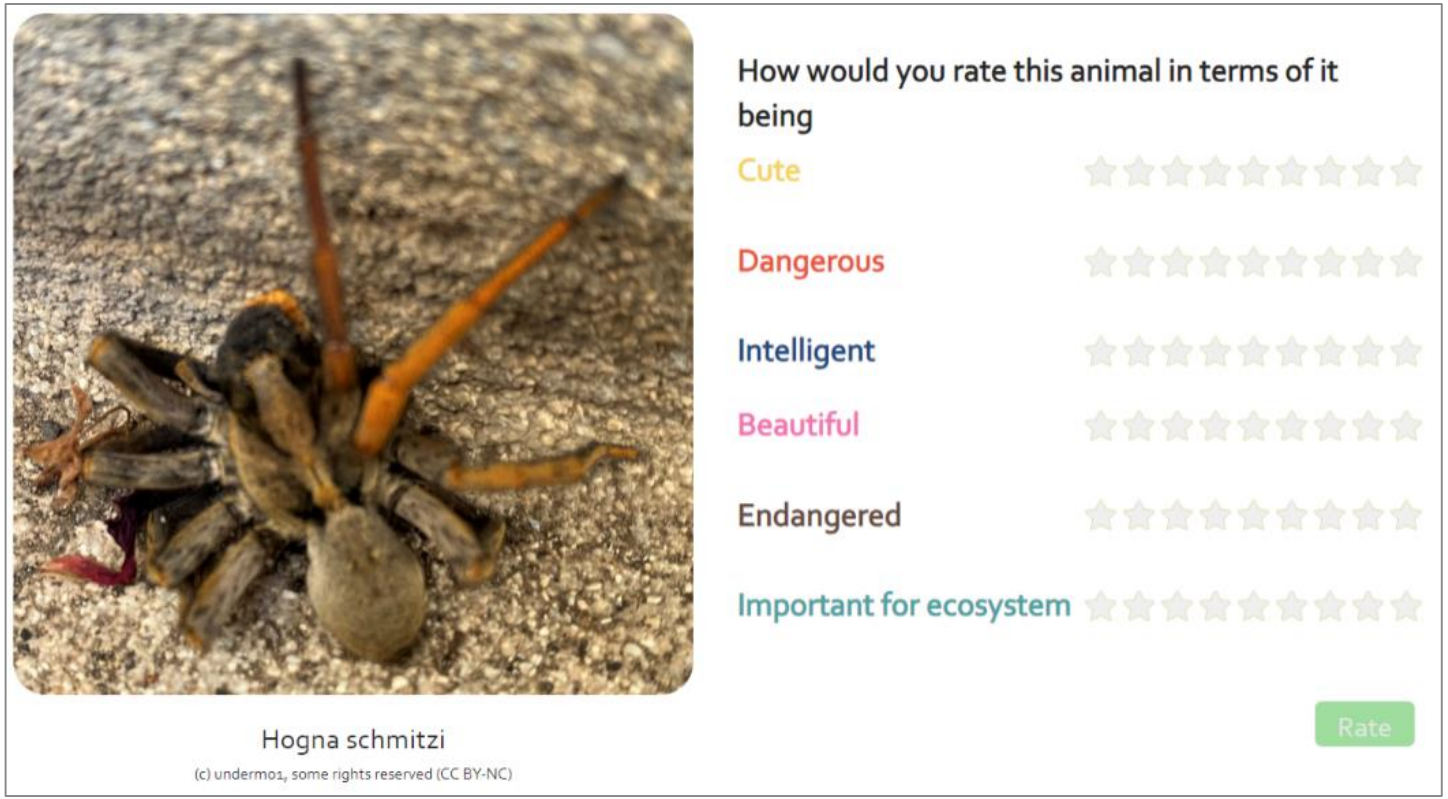
WASP Objectives

1. Construct the first global perception database for biodiversity
2. New research on perception of invertebrates and plants
3. Allow systematic investigation of public perception across species groups and geographical range

WASP Survey



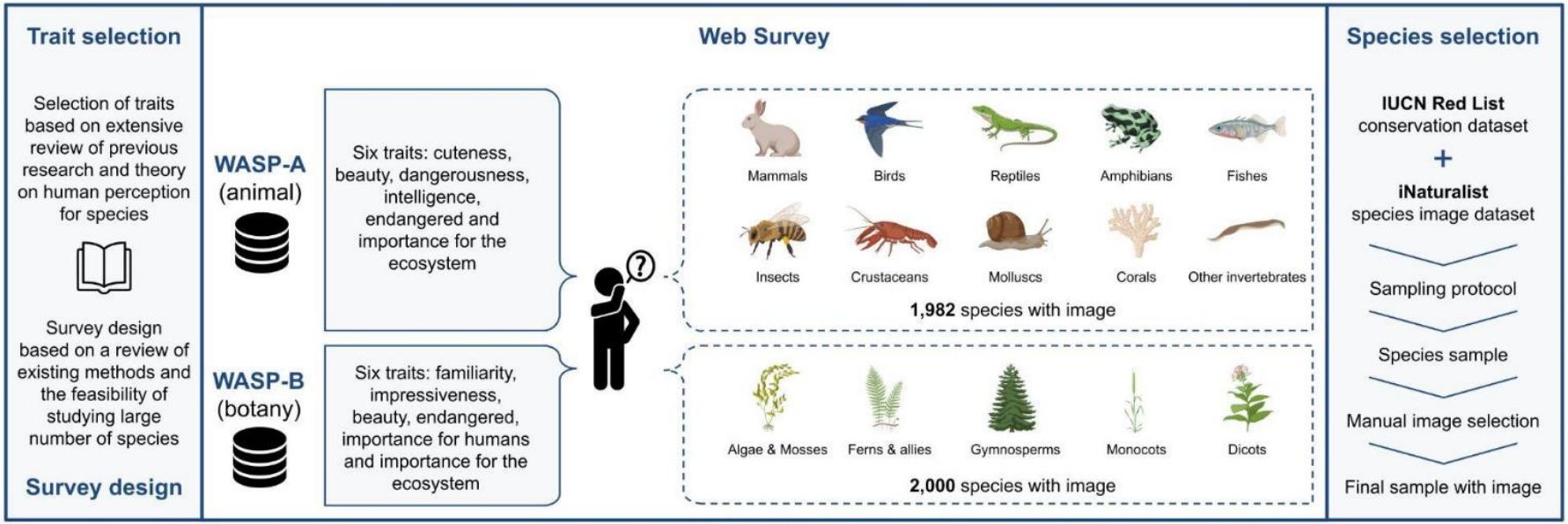
Survey available on: http://wasp-project.net/survey

Choice of survey design

Method family	Examples
Proxy	Proxy through number of interactions (e.g. keyword search, post engagement) on various online platforms (e.g. Google Web Search, Wikipedia, Facebook, Twitter…) **+ cost-effective, many taxa** **- less accurate**
Stated preferences surveys	contingent valuation, discrete choice experiment, contingent ranking, pairwise comparison **+ accurate** **- resource-intensive, few taxa** **→ contingent rating**

Nguyen, T., Malina, R., Vanhove, M. et al. WASP: the World Archives of Species Perception. Database (2023) Vol. 2023: article ID baad003; DOI: https://doi.org/10.1093/database/baad003

Methodological Framework



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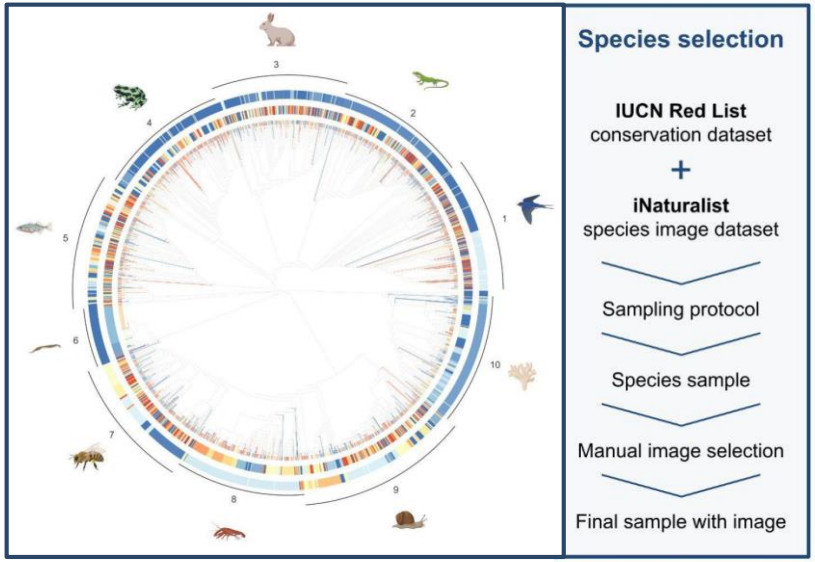
Species selected to maximize taxonomic diversity

Major group	Four taxa with the most species, in decreasing order; one taxon with the least species (number of species in bracket)				
Birds	 Passeriformes (95)	 Charadriiformes (19)	 Piciformes (9)	 Caprimulgiformes (8)	 Trogoniformes (1)
Fishes	 Perciformes (8)	 Beloniformes (6)	 Beryciformes (6)	 Characiformes (6)	 Stephanoberyci-formes (1)
Reptiles	 Squamata (163)	 Testudines (29)	 Crocodylia (7)	–	 Rhynchocephalia (1)
Amphibians	 Anura (155)	 Caudata (23)	 Gymnophiona (22)	–	–
Mammals	 Rodentia (45)	 Cetartiodactyla (29)	 Primates (25)	 Carnivora (23)	 Proboscidea (1)



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Features of WASP method and data

Method

- Cost-effective
- Simple design
- Flexible (scalable, localizable)

Data

- Novel data
- High compatability (IUCN Red List, iNaturalist)
- Relevant to multiple stakeholders

Ambition

- Develop into long-term citizen science project
- Identify and account for perception and perception bias in research, communication, awareness-raising and policymaking
- Collaborations in research and outreach is key

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CEBioS

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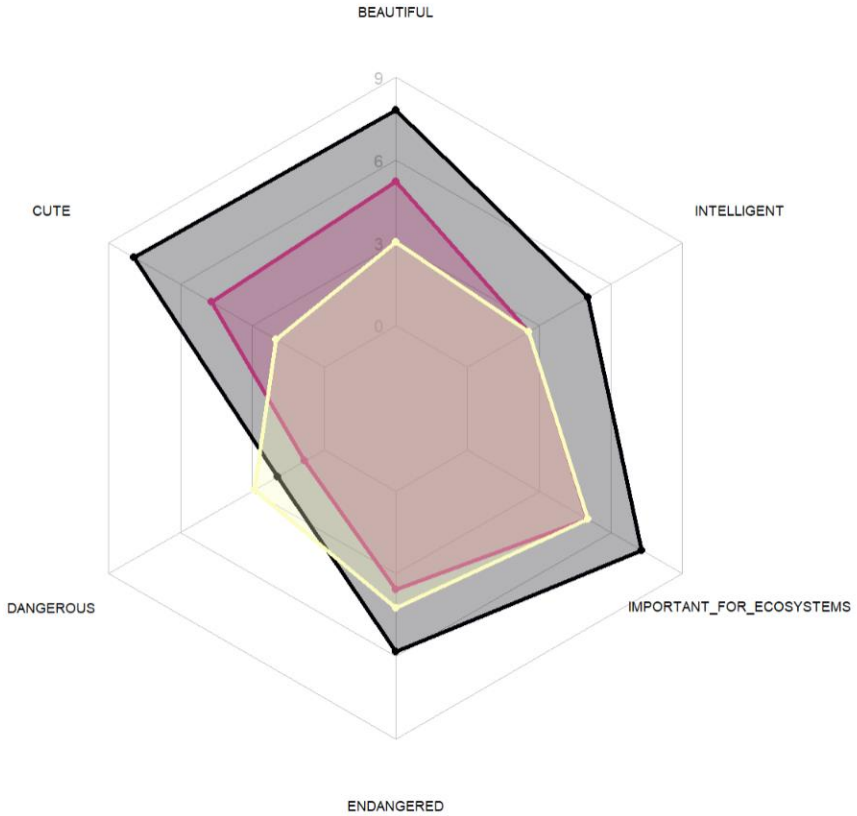
Public perception ratings for species (examples)

Reef fish
Discotrema crinophilum



Deep sea fish
Sio nordenskjoldii

King penguin
Aptenodytes patagonicus

Thank you for your attention !

...

But wait, there is more

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Interactive Session

Perception for parasites

1. Images of different parasitic species are shown
2. Provide **1 to 3 adjectives** describing your impressions of the species shown

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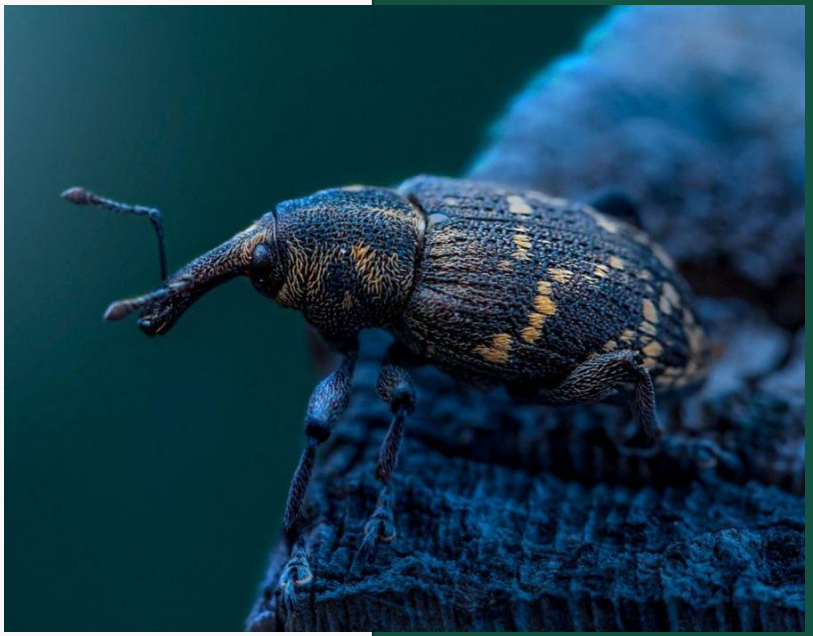

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