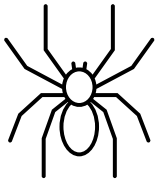
Möglichkeiten der automatisierten, ökologischen Auswertung großer Datenbestände aus DWB heraus am Beispiel der Webspinnen



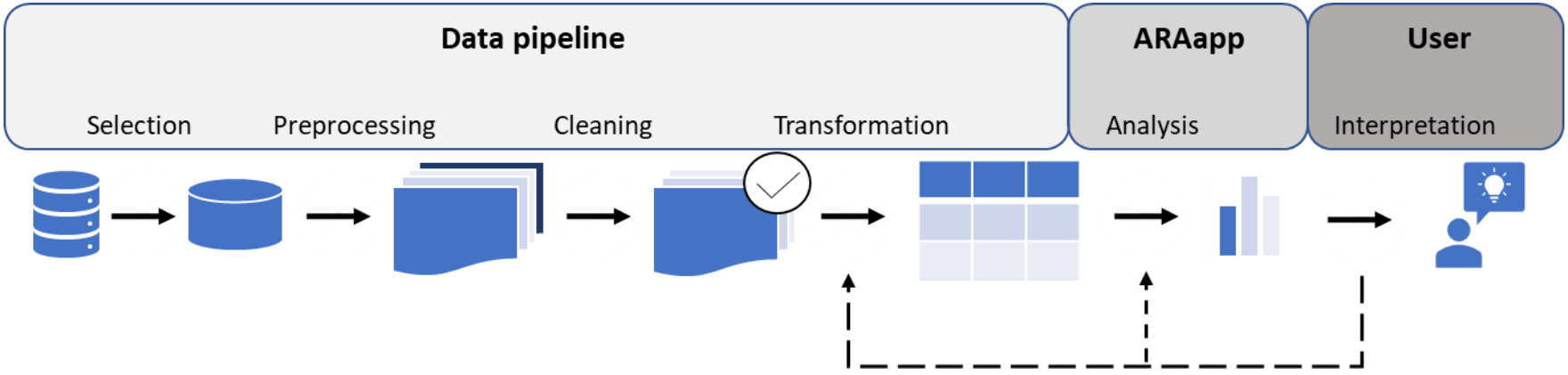
Alexander Bach

Bach, A., Raub, F., Höfer, H., Ottermanns, R., & Roß-Nickoll, M. (2024). ARAapp: Filling gaps in the ecological knowledge of spiders using an automated and dynamic approach to analyze systematically collected community data. *Database*, *2024*, baae004. https://doi.org/10.1093/database/baae004

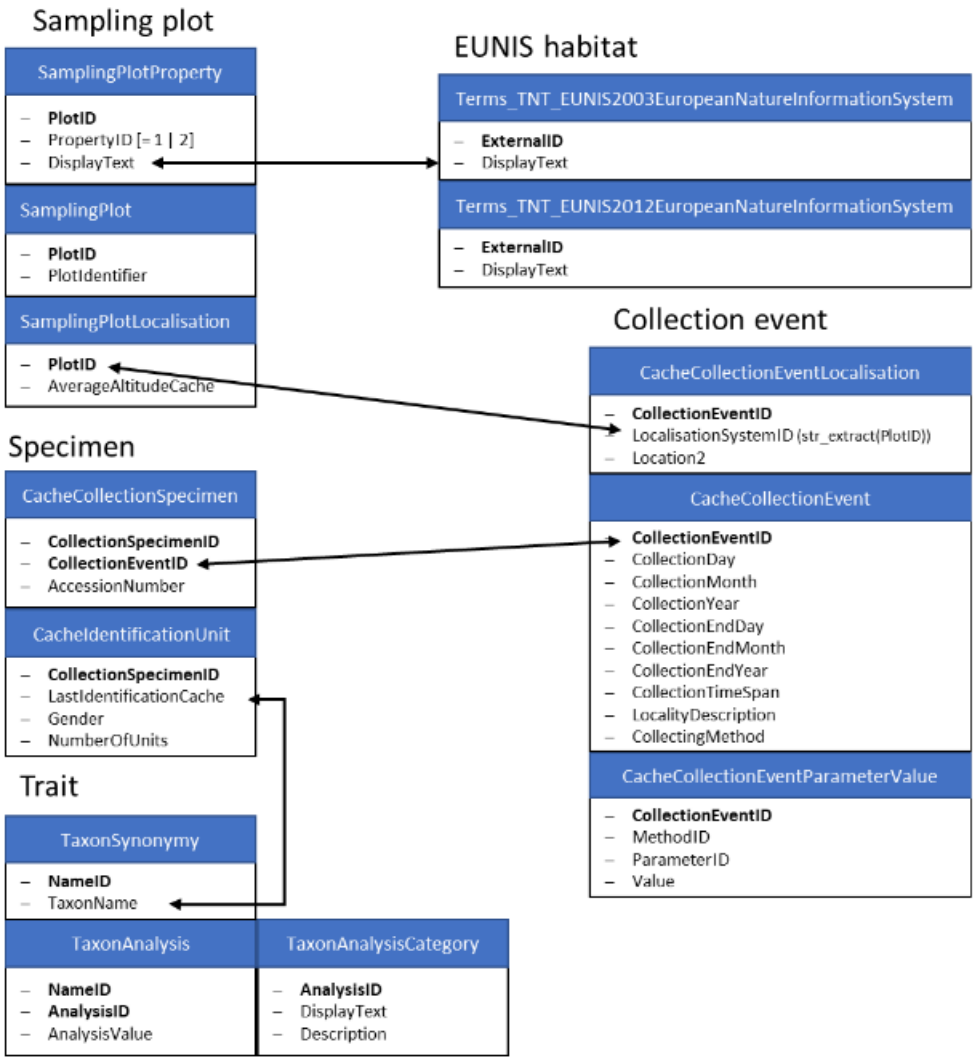
Generierung ökologischen Wissens

- großflächiges Fehlen des Wissens über ökologische Ansprüche von Arten (Hortal et al. 2015)
  - nur wenige prominente invertebraten Gruppe besser bekannt (z.B.: Lepidoptera)
  - einer der Hauptgründe für den mangelhaften Schutz vieler seltener und/oder bedrohter Spinnenarten (Milano et al. 2011)

- mögliche Lösung: datenbasierter Ansatz (Kelling et al. 2009)
  - Knowledge Discovery in Databases



ARAapp: Data pipeline



	Plot1	Plot2	…
Spec1			
Spec2			
…			

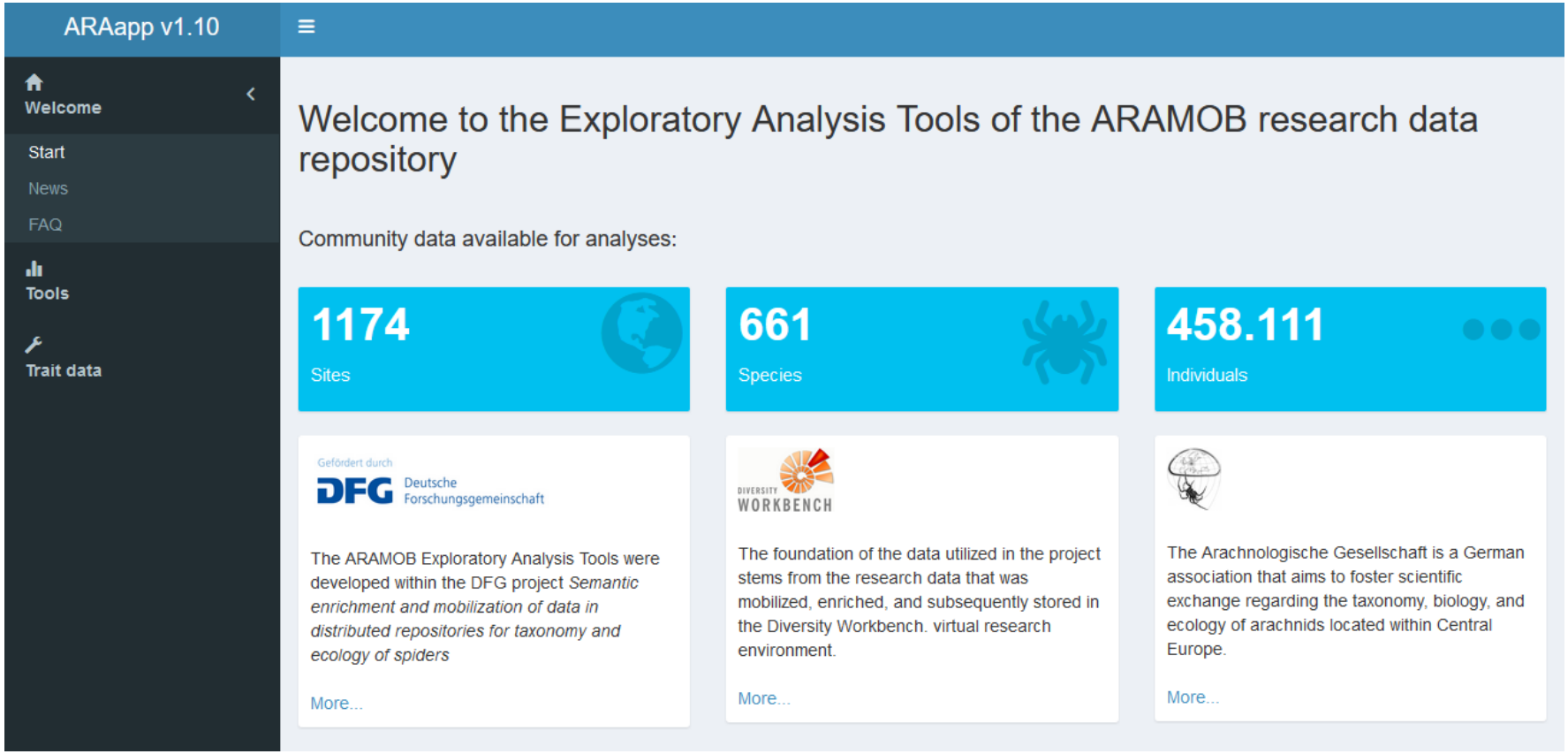
	Plot1	Plot2	…
Par1			
Par2			
…			

	Trait1	Trait2	…
Spec1			
Spec2			
…			

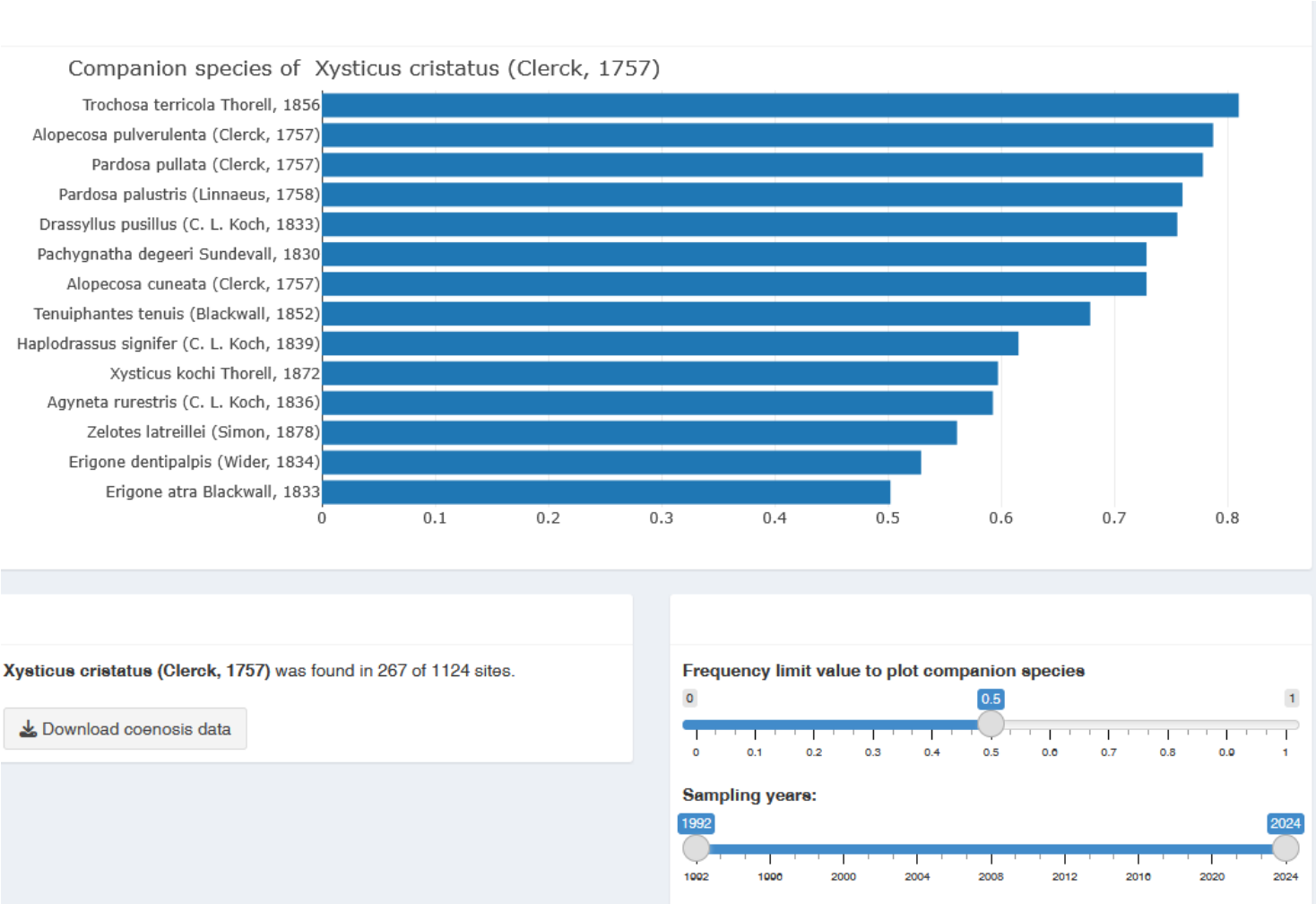
Anwendung

INSTITUTE FOR ENVIRONMENTAL RESEARCH | RWTH AACHEN UNIVERSITY

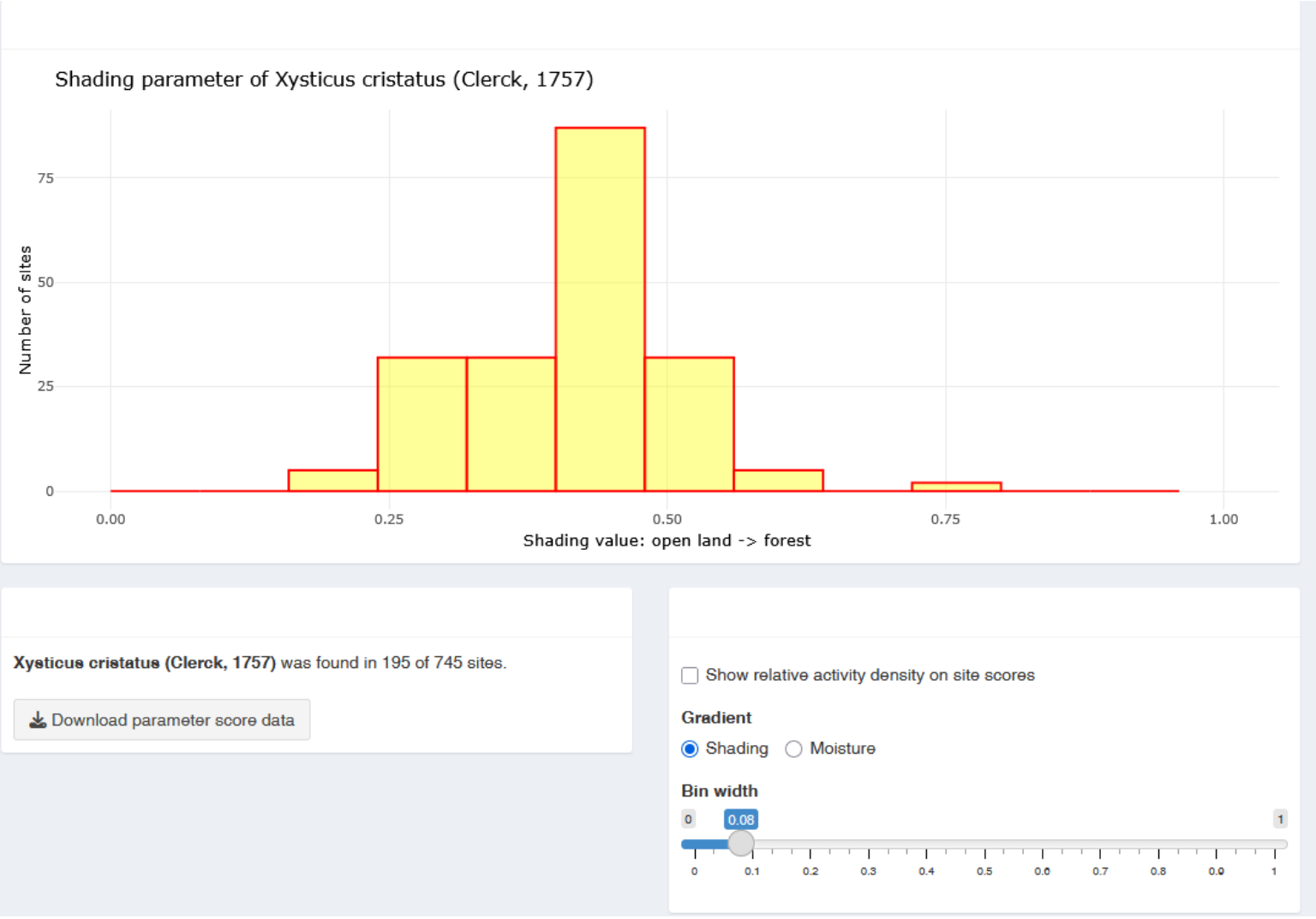
https://aramob.de/de/daten/statistik-tools



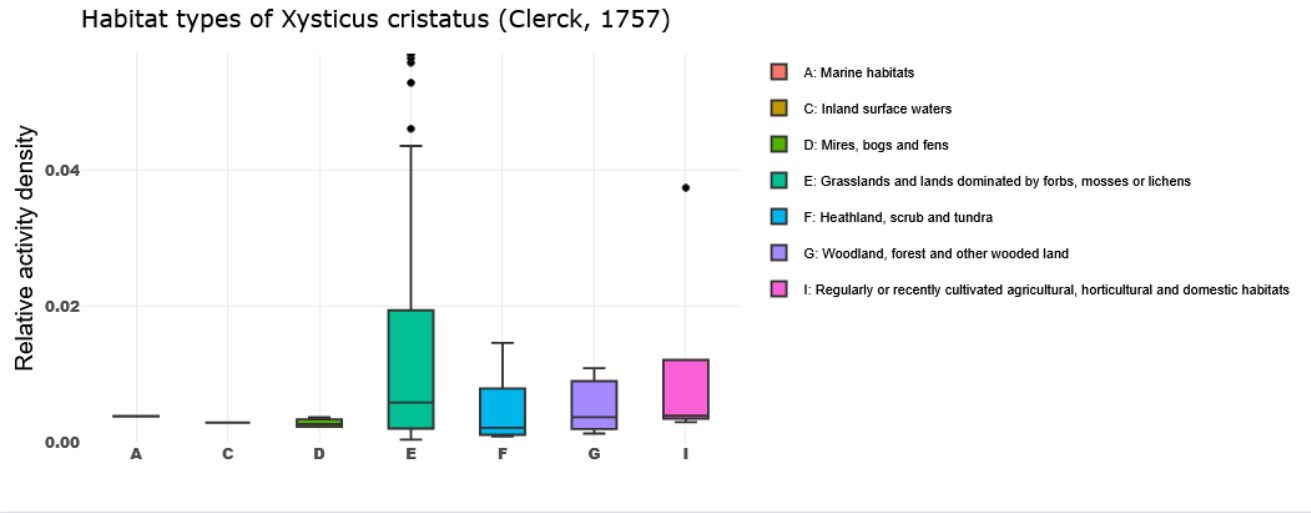
Companion species



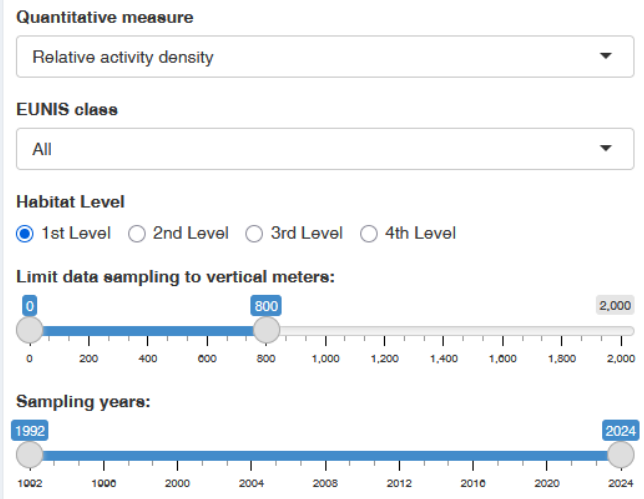
Ecological parameters



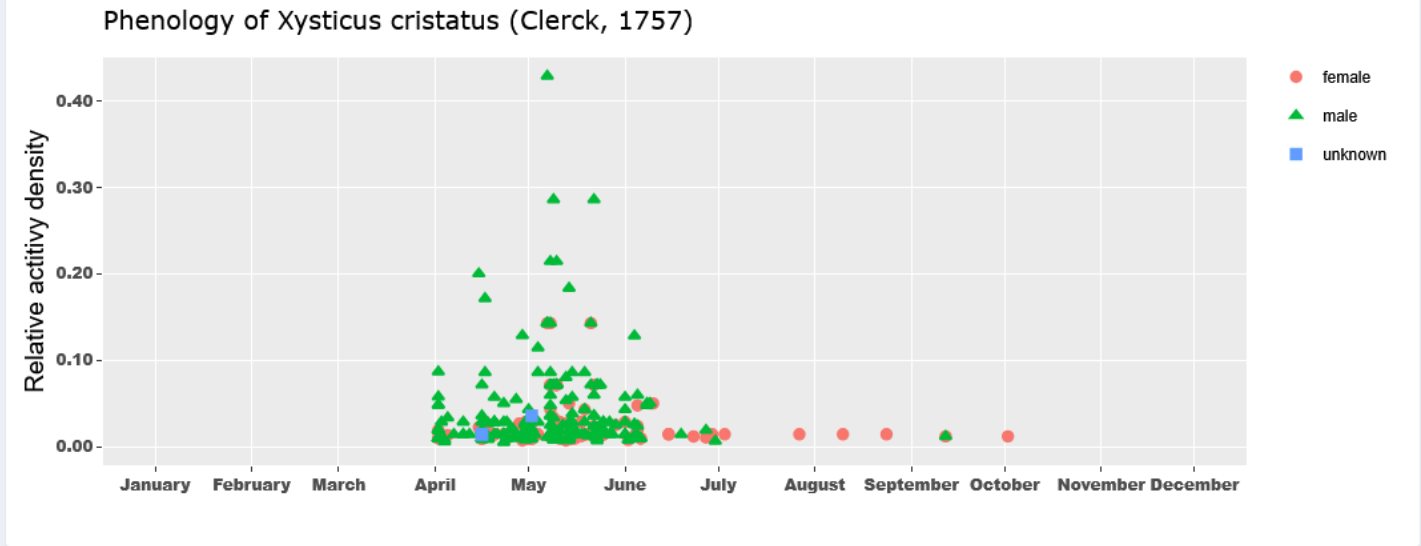
Habitat occurence



Class	Sites with presence value	Total Sites	Frequency
A	2	2	100%
C	1	6	16.7%
D	4	13	30.8%
E	168	298	56.4%
F	6	15	40%
G	6	368	1.6%
H	0	9	0%
I	10	34	29.4%
Total	**197**	**745**	**26.4%**



Phenology



Xysticus cristatus (Clerck, 1757) was found in 133 of 620 sites.

Download phenology data

Quantitative measure

Relative activity density

Maximum collection days between two emptying periods:

1 — 31 — 60

1 7 13 19 25 31 37 43 49 55 60

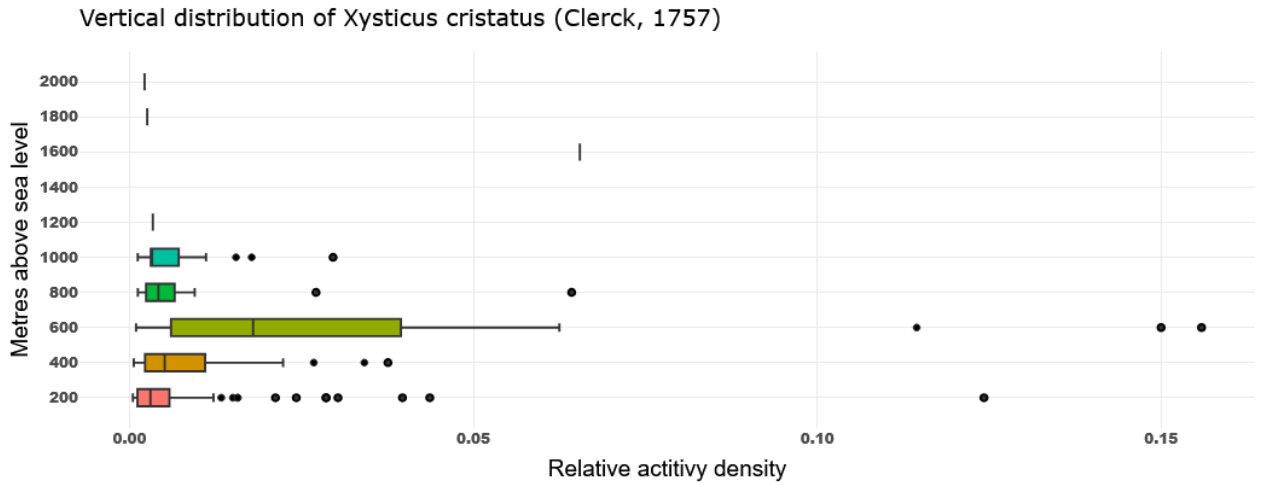
Limit data sampling to vertical meters:

0 — 800 — 2,000

0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000

Expert options

Vertical Distribution



Vertical Class	Sites with presence value	Total Sites	Frequency
0	3	6	50%
200	72	194	37.1%
400	51	197	25.9%
600	60	211	28.4%
800	16	173	9.2%
1000	19	215	8.8%
1200	1	28	3.6%
1400	0	6	0%
1600	1	18	5.6%
1800	1	68	1.5%
2000	1	65	1.5%

Quantitative measure

Relative activity density

Download Altitude Data