

sDiv working group meeting report

"sMacrobehaviour II"

Working group meeting report

- *focal areas of discussion + main results/conclusions + open questions*

We discussed progress since our last meeting, including submission of our conceptual paper to *Trends in Ecology & Evolution*. We also took the opportunity to share new developments in this area including a new paper on behavioural diversity (Berger-Tal et al 2025). We then discussed our goals for this meeting and for the rest of the lifetime of the working group. An important outcome of this discussion was agreement on the aim and three key questions for our empirical paper, which guided the rest of the week.

We spent the week consolidating our behavioural data and testing its limitations, clarifying theoretical underpinnings and hypotheses for the drivers of geographic variation in behavioural trait distributions and diversity, amassing a library of environmental and other geographic predictors, determining appropriate measures for behavioural diversity, and developing a spatial analysis pipeline. We are yet to decide how to approach the challenge of missing data within our traits and distribution datasets.

- *content of presentations*

The first was delivered by the PIs and gave an overview of the sMacrobehaviour project as a whole, where we currently stand given last year's goals, the specific goals for this meeting, and the rules for interactions between meeting participants. We then had an update on the database delivered by PI Katie Marske and Michelle St John. Katie M also set out the key challenges remaining in achieving our empirical paper. Jonathan Drury presented a key component of the spatial data processing pipeline to highlight areas where input was needed. We also had an unplanned presentation during the meeting from Catherine Sheard to ensure we all could access and edit the database via GitHub, which was very helpful.

- *general research ideas, questions & directions discussed (incl. potential data to be used etc.)*

During the week, we solidified the aims of our planned empirical paper, building on ideas developed in our conceptual paper (in review). We considered multiple questions, with the most prominent being what the minimal data coverage should be for inclusion of taxa and for traits, which metrics of diversity were most appropriate for calculating behavioural diversity, and plans for the eventual publication of the data supporting the empirical paper. We also discussed potential follow-up papers, some of which might foster new collaborations to approach integrative questions (including with other iDiv members).

- *general structure of the week (break out groups, presentations, sessions with remote participants etc.)*

After an initial large discussion to frame the goals of the week, we mainly focused on small group activities throughout the week. At the beginning, middle and end of each day, we reconvened as the full group to share progress and flag potential roadblocks so that others in the group could offer solutions. Groups remained flexible so that members could move between those that were of interest.

Starting Day 3, we brainstormed together the day's tasks, and group members then assigned themselves to specific individual or team tasks to achieve daily aims. This worked well as we were able to capitalize on the different strengths across the group. We were also joined for some of the meeting by Alke Voskamp, who was able to give advice regarding spatial analyses, and the PIs met with Anahita Kazem to discuss copyright rules around data.

We had two active remote participants who worked both in teams and individually on different days/tasks. We ensured that these participants were included in large discussions at the beginning and end of each day. PIs met before dinner to recap the day, update the online agenda, and create a flexible plan for the next day.

- *next steps & upcoming deliverables*

Our next steps are for specific people (agreed during the meeting) to take forward specific parts of the data preparation, analysis and writing. For some tasks it is unclear who will lead, and we discussed the possibility of bringing in additional expertise as required after each group member considered how much time they could commit within the next few months. We expect to receive review comments on the conceptual manuscript shortly and will work on addressing comments together. We also aim to a draft introduction for the empirical paper and have final decisions about data inclusion by mid-summer. After this time, we will begin empirical analysis.

- *general working atmosphere and feedback on sDiv support (What kind of support? How helpful was it?)*

iDiv support during the meeting was exemplary, enabling us to focus on the science rather than spend time dealing with logistics. Luise was incredibly helpful, Anahita's advice was very clear, the facility is well-designed for small collaborations of 2-3 people to spread out, and most participants appreciated the catering. Our general working atmosphere was highly collegial and friendly, with all participants listening to one another carefully and thoughtfully – everyone had a voice, which was very important for ensuring we gained the most diverse and insightful perspective in each discussion.