German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig
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sDiv working group meeting summary

"Linking ecological stoichiometry with environment-diversity-productivity relationships in grasslands"

1. Focal areas of discussion + main results/conclusions + open questions

We addressed all of these objectives listed below in our discussions and used available data to work on these questions (see resulting abstracts below)

Obj. 1: Determinants of ecosystem-scale plant CNP

Obj. 2: Plant diversity and elemental stoichiometry

Obj. 3: Stoichiometric stabilization at the community and individual-scale

Obj. 4: The role of plant tissue nutrient optima in diversity

2. Content of presentations

Talks describing datasets: Eric Lind (with Jennifer Firn & Michael Anderson)

Chalk Talk: Michael Anderson: Stoichiometry from an empiricist's perspective: background and opportunities

Public Seminar Talk by Elizabeth Borer: "Your site is my replicate: from grassroots science to global inference"

3. Outputs from the working group

Manuscript proposals - each of these proposed manuscripts includes a full abstract generated during the workshop. Some also include preliminary analyses performed during the workshop. It is likely that some will eventually be combined, but this list provides insights into the breadth of questions being tackled using NutNet datasets.

1. Controls on plant stoichiometry in global grasslands (begun during the January workshop, but is now being circulated in manuscript form)
2. Do species' foliar traits predict their response to environmental change?
3. Resource ratios and species loss rates.
4. Multiple resource tradeoffs in grassland species
5. Stoichiometric scaling relationships between functional groups from grassland ecosystems
6. Maximum community biomass, height and shading under N and P limitation
7. Functional response to nutrients and herbivore exclusion across a globally replicated grassland experiment

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8. Globally pervasive plant species show high variability in leaf traits in response to nutrient addition and grazing exclusion (This may end up as part of an existing NutNet manuscript)
9. Plasticity versus turnover; Are leaf trait responses to eutropication and grazing explained by rank abundance
10. Species-scale traits and rarity
11. Community biomass CNP ratios -- evidence for Redfield-type ratios in terrestrial biomass?
12. Community elemental concentrations, ratios and pools as affected by single and multiple nutrient additions in grasslands across the globe
13. How general are the responses of key functional groups to the addition of single and multiple nutrients?

Funding proposals - Ebeling and Borer (PIs of this proposal) worked together to generate a new sDiv proposal for two additional workshops to continue to analyse these data and new datasets (on consumers) generated after this workshop.

4. Balance between work on outputs, general brainstorming/ information exchange and participants presentations in %

Every day we had a balance between presentations and associated discussions, whole group discussions, smaller group work for data analyses or writing, and information exchange/brainstorming. Time was broadly allocated as presentations (~20%), whole group or small group work on information exchange/ brainstorming (~20%) of the working time, and data analyses and writing (60%). We did more brainstorming in the first two days, and more analyses and writing in the latter days of the meeting.

5. Inspiration for own work and/or further cooperation

For all of us, the workshop was a great chance to meet collaborators and to start new, exciting projects. As we did not complete papers within four days, the cooperation and projects will be ongoing. Discussion/ brainstorming rounds during the workshop led to new ideas for future projects and collaborations.

6. General working atmosphere and feedback on sDiv support

During the whole time, we were satisfied with the support by the sDiv team, including organization before, during, and after the workshop. sDiv created a very nice working atmosphere (three rooms available, whiteboards everywhere, nice food and coffee supply), and arranged social events after

work. The only critical remark we have to make is more a "Saxon law", than a sDiv problem- due to the Saxon law traveling for the researchers was very inflexible (especially multi- destination flight reimbursement for travelers coming from distant locations).

7. next steps

We proposed (and were funded for) a second and third sToichNutNet workshop to build on our understanding of the drivers and implications of the carbon and nutrient chemistry of plant communities (see report on the first workshop above). We will continue to analyse the three new Nutrient Network datasets that were the focus of the first workshop (see abstracts) and also will work on new, un-analysed data, generated following the first workshop.

Participant list

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