

Date: Tuesday, 05 September 2023**Venue:** Coff's Harbour, Australia65th Annual Symposium of the International Association for Vegetation Science

By Gabriella Damasceno



We had both good food and nice discussions about sPlot development during lunch time.

The meeting occurred as a hybrid event, with online connection provided through the IAVS Zoom account. There were 21 attendees in total: 18 in person and three online participants. The main goal of the meeting was to discuss the scientific development of sPlot in the next years. For that, we explored the possibilities of new research projects that could be addressed with sPlot 4.0 data, which now includes repeated observations of a plot through time as well as the classification of vegetation types according to international classification system proposed by Don Langendoen and collaborators (2016).

The meeting started with a brief recap of sPlot overarching scientific aim: the exploration of all aspects of plant community diversity, including taxonomic, functional, and phylogenetic aspects. In this sense, Gabriella presented that we had three important developments in the last year: the new taxonomic backbone of sPlot 4.0; new gap-filled functional data derived from the current version of the TRY database (v 6.0); and a new phylogeny for sPlot 3.0.

We then proceeded to discuss new research ideas proposed by the participants. In summary, they included the usage sPlot 4.0 data to **a)** create disturbance indicator maps based on community composition and diversity metrics; **b)** investigate the influence of diversity (among other drivers) on global productivity; **c)** quantify the influence of traditional communities and/or indigenous people on plant biodiversity conservation; **d)** explore global patterns of stability and resilience, using time-series data and long-term monitoring microclimate data; **e)** identify globally threatened vegetations, similarly to what by the EUNIS European habitat classification; **f)** analyze plant functional diversity by vegetation formations, evidencing climatic envelopes for distinct vegetations, similarly to Whitaker's biomes graph.

Two ideas were discussed in deeper details: **a)** the establishment of a global network of permanent plots and **b)** the enhanced usage of sPlot as tool for science-based global policies. The first idea was contributed by Alessandro Chiarucci and suggested the establishment of a pilot project within Europe under the Biodiversa+ initiative. Alternatively, the network could be used to reduce gaps in sPlot geographic coverage by focusing on underrepresented areas. The second idea was contributed by Francesco Sabatini and proposes the consortium to actively approach intergovernmental organizations, such as the IPBES platform, to subsidize reports and recommendations through data-informed analysis derived from sPlot. While the first idea still needs some discussion and consideration, the second one was unanimously welcomed.

Finally, Gabriella and Helge presented three ideas focused on the specific research topics addressed by sPlot: global biodiversity patterns, global biodiversity trends in a changing world, and community trait-environment modelling. For the first topic, we plan to combine sPlot data with other databases containing information about organisms at distinct trophic levels, like pollinators, herbivores, and soil organisms, thus leading to biodiversity analysis at multi-trophic level. For the second topic, we envision the development of new metrics to describe community-level data considering, for example, changes in species abundance through time; similarly to what was done by Jandt and collaborators (2022). Lastly, new approaches on trait-environment modelling are proposed by the exploration of novel plant traits (like those related to roots, drought resistance and persistence) in combination with remote-sensed data (evapotranspiration and albedo, for example). Also, a more applied approach including anthropogenic factors will be pursued, thus including the impacts of past and present human activities into account when studying plant biodiversity in all its facets.