

## **sDiv working group meeting report**

### **“sFutures- Integrating functional and phylogenetic underpinnings into restoration science”**

*The first in-person meeting of sFutures took place between the 10th to 14th of June 2024. Prior to that, we had conducted a remote meeting from 26th to 29th of February 2024. The majority of this report will regard the in-person meeting, with references to the remote meeting, where relevant.*

*Our working group brings together experts from basic and applied fields with the aim of assessing functional and phylogenetic diversity patterns in disturbed and restored systems. Our team is composed of scientists with expertise in biodiversity synthesis, phylogenetics, conservation, and functional and community ecology. The diverse perspectives team members bring to the group have resulted in inspired discussions on restoration techniques in varied ecosystems around the world, the application of statistical methods to new research questions, and relevant literature from unique subdisciplines.*

#### **Aim of the meeting**

*In our first online meeting, we discussed the theoretical and practical underpinnings of integrating functional and phylogenetic diversity into restoration science. We completed an extensive review of the literature to assess the state of knowledge on the topic and began to draft a conceptual paper. The goals of the first in person meeting were to revisit our overarching working group goals, further develop a draft for a conceptual manuscript, and begin discussions about our first planned research paper, through which we will assess the role species traits and phylogenetic identities play in species establishment in restoration projects (i.e., the ‘species-level’ paper). We have made exciting progress toward each of these goals.*

#### **Meeting set up and structure**

*All nine participants attended our second meeting in person. Participants included early career researchers spanning PhD to assistant professor career stages and represented diverse perspectives from around the world including researchers originally from North America (2), South America (3), Europe (2), and South Asia (1). We began with many joint introductory discussions and activities so that group members could get to know one another and to establish a solid team dynamic. We revisited and discussed our overarching goals, progress so far, and found clear tasks to begin with that matched the general ideas set forth in our agenda. When tasks became clear, we identified core tasks and divided ourselves into subgroups interests and expertise; this allowed us to tackle multiple tasks simultaneously. Core tasks included reading and summarizing literature, writing, creating conceptual figures, simulating data, and analyzing and visualizing simulation results.*

#### **Progress made and next steps**

*During the meeting the working group made substantial progress on the conceptual manuscript: we turned notes into a draft, restructured the narrative based on discussions,*

*and refined conceptual and example data figures. We identified lead and senior authors for the paper, identified subgroups to continue work towards specific tasks, and determined deadlines for key milestones for the paper. In addition, we began discussing our first research paper (second paper, species-level), and have identified a core team for that paper as well. We will come to the third meeting ready to finish our second paper and begin work on our third paper.*

### **Meeting atmosphere**

*Throughout the week, all sFutures working groups members were supportive, collaborative, and overall jovial. Our team represents all the skills and expertise needed to carry through our goals. The supportive and friendly atmosphere supported discussion about using our work as the foundation for side projects, future proposals, and new collaborations among team members. Over the course of the week team members worked to their expertise and strengths or chose to be exposed to new ideas and methods by working outside of their discipline. Most team members were able to explore both these avenues throughout the week and all team members were excited to share their knowledge and learn from others. This was an excellent strategy to utilize everyone's strengths and to cultivate learning at the same time.*

### **Plans for the third meeting**

*Our third meeting will be focused on three aims. The first will be to advance the species-level paper by completing data integration, analyses, figure development, and writing. The core goal of this paper is to understand how phylogenetic identities and functional traits influence seeded species success in restoration projects. Our second aim for the third working group meeting will be to begin discussions about approaches to assessing how functional and phylogenetic diversity change throughout the restoration process. Specifically, we will discuss how we will overcome various difficulties of integrating disparate datasets and how to simultaneously assess unique diversity metrics. The first two papers will help us think through the issues we will have to deal with in order to achieve these goals. Finally, we may use a portion of the third meeting to address reviewer feedback (assuming timelines match) on the first conceptual paper.*