Anticipating the spatio-temporal response of plant diversity and vegetation structure to climate and land use change in a protected area, Boulangeat, I., Georges, D., Dentant, C., Bonet, R., Van Es, J., Abdulhak, S., Zimmermann, N.E., Thuiller, W.

Appendix A3: Better understanding the time-lag before observing the effect of climate change on vegetation

Climate change effects on the vegetation are not immediate. In order to better understand which parameters are the most important in the "migration limitation", we repeated the simulation with a regular seeding (addition of seeds of all PFGs everywhere in the landscape every five years).

Fig. A3a Evolution of the tree cover through time and effect of the dispersal limitation. For three chosen scenarios varying land use and accounting for climate change, we report the evolution of tree cover though time (black line) and compare it to simulations including a addition of seeds of all PFGs everywhere in the landscape every 5 years (red line).

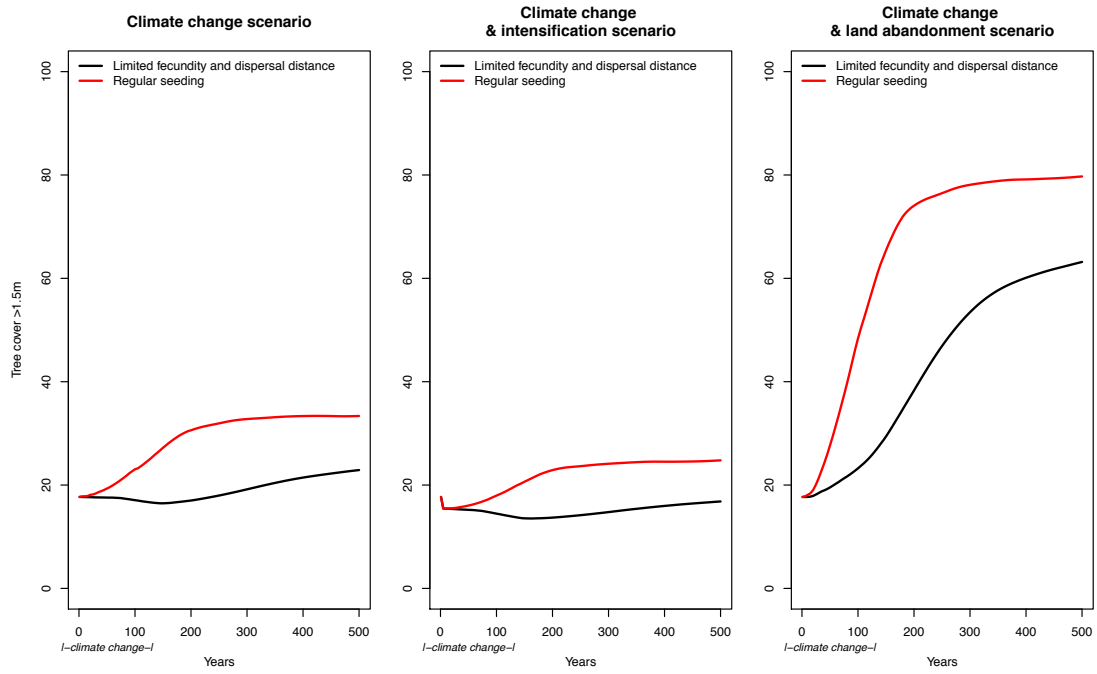

Fig. A3b Forest colonisation in the Fressinière valley under two contrasted management scenarios. The percentage of tree cover varies from 0 (yellow) to 100% (dark green). Pastures are shown at year zero in white. The red circle shows a high elevation zone that trees couldn't reach under the land use intensification scenario, as a consequence of the grazed pastures constituting a dispersal barrier.