

SYMPOSIUM 11: UNDERSTANDING SUCCESSIONAL PROCESSES IN TROPICAL FORESTS USING LONG-TERM DATA: FROM POPULATIONS TO ECOSYSTEMS

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Chronosequence and long-term plot-based studies are complimentary research approaches to studying tropical forest succession. Understanding key successional processes such as species and stem turnover, species demography, and effects of dominant species on community structure, successional pathways and ecosystem properties require analysis of long-term data gathered from permanent plots. NeoSelvas is an international collaborative project that is developing novel ways of combining both approaches to enhance our understanding of ecological succession in abandoned pastures and agriculture fields, which are becoming dominant in tropical landscapes around the world. The project is based on continuing studies of long-term plots established in Manaus, Brazil, NE Costa Rica, and Chiapas, México. The first eight papers in this symposium present results from these long-term plots. Four posters address patterns and processes emerging from successional responses of tropical plant populations and communities to human and natural disturbances. Oral presentations focus at three hierarchical levels: populations, communities, and ecosystems, examining patterns, processes and mechanisms of succession within and across these levels. Lohbeck and Boukili present studies on successional changes in functional traits of woody species in Mexican and Costa Rica sites. Finegan presents multi-decadal data on population trends of trees in relation to species differences in tree functional attributes, stem density, and phylogenetic relatedness. In the Manaus sites, Mesquita describes effects of climate variation on biomass dynamics, whereas Jakovak describes effects of light on seedling growth during succession. Longworth explores how land use history affects species dominance patterns and the long-term dynamics of tree communities. Norden describes a new modeling approach that merges chronosequence models with dynamic data in all three study areas to predict changes in stand-level community variables. Balvanera discusses changes in ecosystem functions and services during succession in wet and dry tropical secondary forests of Mexico. Four additional studies examine forest succession in large blowdowns in the Brazilian and Peruvian Amazon (Chambers), forest regeneration and restoration in Atlantic forests of Brazil (Rodríguez, Engelman Machado), and leaf litter patterns across a successional gradient of dry forest (Mendes Alves). Collectively, these presentations provide new insights into mechanisms and impacts of successional change and the diversity of successional pathways within and across tropical forest regions.

TALKS (Room Gaucurus, 14h00-18h00)

14h00-14h15 (S11.OC.01) **Plant functional traits and the slow-fast continuum along successional gradients of Mexico: do dry and wet tropical forests show parallel trait continua?** *Madelon Lohbeck*

- 14h15-14h30 (S11.OC.02) **Successional convergence in functional traits and species composition of trees in Costa Rican wet forests.** *Vanessa Boukili*
- 14h30-14h45 (S11.OC.03) **Successional age and light effects on seedling growth in alternative successional sequences in the Central Amazon.** *Ana Catarina Jakovac*
- 14h45-15h00 (S11.OC.04) **Long-term tree population change in secondary rain forests and the effects of stand and population density, functional diversity and phylogenetic relatedness.** *Bryan Finegan*
- 15h00-15h15 (S11.OC.05) **Convergence and divergence in alternative successional pathways in Central Amazonia.** *J. Benjamin Longworth*
- 15h15-15h00 (S11.OC.06) **Beyond chronosequences: spatio-temporal models of successional vegetation change in three Neotropical forests.** *Natalia Norden*

Coffee Break

- 16h30-16h45 (S11.OC.07) **Amazonian secondary forests respond to climatic variation: biomass dynamics.** *Rita Mesquita*
- 16h45-17h00 (S11.OC.08) **Successional changes in ecosystem services in wet and dry tropical forests.** *Patricia Balvanera*
- 17h00-17h15 (S11.OC.09) **Secondary forest succession and community assembly in natural blowdown gaps in the Brazilian and Peruvian Amazon.** *Jeffrey Chambers*
- 17h15-17h30 (S11.OC.10) **Potential of individual tree functional types for ecological restoration in Tropical Andean forests of Colombia.** *Nathaly Rodríguez*
- 17h30-17h45 (S11.OC.11) **A predictive model of Atlantic rainforest recovery based on plant functional types.** *Rafael Engelman Machado*
- 17h45-18h00 (S11.OC.12) **Patterns of tree leaf fall along a successional gradient in a tropical dry forest.** *Alline Mendes Alves*

POSTERS (Karuha Space, 15h30-16h30)

- S11.P.01. **Short-term effects of large wind-throws on structure and diversity of trees community in Central Amazon.** *Daniel Marra*
- S11.P.02. **Changes in the herbaceous communities on the landslide of the Casita Volcano, Nicaragua, during early succession.** *Eduardo Velazquez*
- S11.P.03. **Spatial dynamics characteristics of a native population of *Araucaria angustifolia*.** *Giovani Festa Paludo*
- S11.P.04. **Recruitment success of pioneer tree species: importance of topography and gap micro-sites conditions.** *Tony Vizcarra Bentos*