

ATLANTIC FOREST AND GLOBAL WARMING: BASIS FOR THE MONITORING OF BRYOPHYTES

Theme: Impacts of Local and Global Changes on the Atlantic Rain Forest

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Bryophytes are poikilohydric organisms and closely related to the external environment, being a valuable resource for monitoring and indicating effects of climate change on the living environment. Studies about the influence of the global warming on the bryoflora show that with the temperature increase, the bryophytes decreased in number and the cryophilous species expand their range to higher altitudes and slowly retreat from lower altitudes. The main goal of this study is to generate data about the distribution of the bryophytes along an altitudinal gradient (0-1000 m) of Atlantic Forest to support future studies of climate change monitoring. Were used 1-ha permanent plots of the Project Biota Functional Gradient which were distributed among four forest types at Serra do Mar State Park, São Paulo state, Brazil. In each plot, the bryophytes samples were collected at ten randomized subplots (10 x 10 m). Were analyzed the species richness, diversity, life forms, and the assemblages of epiphyllous species. The diversity indices were calculated in the Past 1.92 software. Here are presented the preliminary results, corresponding to the data from *restinga* (RF) and lowland (LF) forests. Were found 151 species, 43 exclusives to the LF and 39 to RF. The species richness was higher in LF (112 species) than in RF (108). Nevertheless, the diversity indices were similar, being slightly higher in RF (Simpson 0.986; Shannon 4.438) than in LF (0.985; 4.409). The taxonomic distinctness index was high in both (5.33 in LF and 5.13 in RF). Seven life forms were found, predominating mat (59 species), turf (16), fan (12) and pendant (9) in RF and mat (62), fan (14), turf (10) and thallose mat (9) in LF. The richness and diversity of epiphyllous were greater in RF (10 species; Simpson 0.84, Shannon 1.99) than in LF (9; 0.758, 1.73). These results show a rich bryoflora that varies considerably between RF and LF. Monitoring the life forms types and the guild of epiphyllous species will might be important because they are indicative of light and moisture conditions in the tropical forests, especially pendants and epiphyllous species. The disappearance of these communities might be an indicator of the global warming. Moreover, with the final list of species from the different forest types will be possible to monitor the distribution of individual species (eg. cryophilous) and understand how community assemblages react to climate change.

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