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ABSTRACTS
P2077. Intrapotropical variation of Abies alba from the Tisovik Reserve expressed in needle traits
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European silver fir (Abies alba Mill.) is a mountain tree, but sometimes it may occupy lowlands, especially in northern parts of its distribution. The geographical distribution of silver fir is limited mainly to the Central-European mountains and in Central Poland reaches the northern border. However, 120 km on the north from the border of range silver fir occurs in small, natural and isolated populations in Bialowieza Primeval Forest - the Tisovik Reserve (Byelorussia).

The human activities caused the severe losses in this stand thus the preservation of gene pool should be entered upon at an urgent mode. Bearing this in mind, our investigation aimed at describing the intrapotropical population and genetic variability of silver fir from the Tisovik Reserve.

One-year old needles were collected from silver fir trees and characterised in respect to 12 morphological and anatomical traits and next were subjected to multivariate statistical analyses. Studied trees within the population showed a homogeneous character so it may be concluded that individuals from the Tisovik Reserve showed the uniform character and this population is weakly differentiated.

P2078. Tree diversity and regeneration dynamics of a montane forest in Ecuador and factors affecting it
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Field research for this study was carried out on the eastern slope of the Cordillera del Condor, El Consuelo in Southern Ecuador. On permanent plots of 400 m² situated in altitudes between 1850 and 2450 m above sea level all trees with a DBH (diameter at breast height) of 5 cm or more were inventoried. Woody plant regeneration was investigated. With ordination methods based on tree species composition in the plots forest types could be distinguished. These types are not only distinct in species composition, but also in diversity, structural features like tree basal area and radial growth rates. Structure, species composition and regeneration dynamics are closely related to topography. Highest species diversity was found on lower slopes and in ravines, together with highest basal area and highest growth rates. Nutrient supply seems to be one controlling factor for tree diversity and growth. Specific site conditions influence growth and mortality of the woody regeneration.

P2079. Tall herb spruce-fir forests as a refuge for boreal forest plant diversity
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We studied vegetation and soil in old-growth spruce-fir forests in North-East of European Russia (average age of spruce about 150 yrs. max. age - 380 yrs). According to ground vegetation composition we revealed 7 different forest types, and for each of them we estimated plant and soil diversity. The highest plant diversity (more than 40 vascular plants per 100 m², and 201 species from total 280 that we registered) correlated with the richest soil and was observed in tall herb spruce-fir communities (TH). The last were found in river valleys as well as at watersheds. Indicator species calculated by the IndVal method were: Papaver radicatum, Cirsium heterophyllum, etc. We also observed that fire scorches were absent in TH, and carbons in soil were very rarely and deep, while in other forests fire traces were met everywhere. We concluded: i) the appearance of tall herbs in spruce-fir forests is possible only under long-term fire absence; ii) TH are boreal forest refugium where the most of boreal species are stored; iii) TH are the most close to climax boreal forests.

P2080. Variation of Composition, Diversity and Structure of Vegetation along an altitudinal gradient in a Tropical Mountain Forest (SFF Guanentá - Alto del Río Fonce, Colombia)
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There are two main hypotheses about how change the composition of vegetation in altitudinal gradients: the monotonic and the hump models. We studied the vegetation of a tropical mountain forest at the Guanentá - Alto del Río Fonce natural park, on a gradient between 2000 and 3000 m of altitude. We established 5 stations for sampling, separated one another 250 m of altitude. Each station had 4 transects (50x5m), in which we sampled woody plants with dbh ≥ 2.5 cm. We found 250 species. The richest families were Melastomataceae (21), Rubiaceae (19) and Araliaceae (10). Richness and diversity show significant differences between stations (p=0.004 and 0.0025) and they decrease with altitude. Regarding structure, we got significant differences in the total height and competition factor (p=0.005, p=0.014 and 0.025) but they did not follow any predictable pattern. Density, evenness, mixture coefficient and basal area did not vary significantly. The higher values of IVI increase conspicuously with altitude. We conclude that composition and diversity follow monotonic model. In contrast, we think changes in structure do not respond to altitude but to disturbances.

P2081. The fragmented Brazilian Mata Atlântica and Edge Effects: the case of Reserva Biológica União (Rio de Janeiro, Brazil)
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The Mata Atlântica is severely threatened by habitat loss and fragmentation and remnants are still subjects to edge effects. Functional and structural alterations can degrade the fragments and leading this biome, still largely unknown, to extinction. This long-term multidisciplinary study initially aimed to investigate above-ground structure and local edge effects on seedlings communities at Reserva Biológica União. Permanent plots nearly two deforested corridors, Rede Elétrica and Gasoduto and preserved Interiors were used since 1999. Trees communities were very rich (208 sp/ha) and diverse (H=4.9 nits). Local structural patterns were altered by edge effects. Edges heterogeneity was observed in practically all analyzed parameters. Typically pioneers and the alien jack-fruit were edges exclusives. Seedlings showed low density and high mortality mainly on edges. The heterogeneity observed suggests that, if cease the anthropogenic impacts, as the edge effects observed, ecosystem can recover natural patterns and process.

P2082. Edge Effects on Mata Atlântica seedlings
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Among the impacts that Mata Atlântica biome remnants are subject, we highlight the processes generated by edge effects that potentially may lead to a complete degradation. This study includes a long-term perspective that aimed to investigate aspects of edge effects on seedlings communities’ dynamics at Reserva Biológica União (Rio de Janeiro, Brazil), one of the newest Brazilian protected areas. Inside a multidisciplinary project, permanent plot near two deforested corridors, Rede Elétrica and Gasoduto and preserved Interiors were used since 2000 to 2004 year. Comparisons were made and we found that smaller individuals were more susceptible to edge effects. Size structures and densities vary among the years, but clearly edges always were more heterogeneous (based on coefficient of variation) than interiors. Patterns observed indicate that edge effects are altered seedlings communities’ properties and artificial limits maintenance may degrade the forest remnant. Otherwise buffer zones probably may avoid direct edge effects on seedlings.

P2083. Modelling of ground vegetation dynamics in forest ecosystems
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