沈阳生态所在北方针叶林林下植被群落构建过程研究中取得进展

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沈阳生态所在北方针叶林林下植被群落构建过程研究中取得进展。林下植被是北方针叶林生态系统中物种多样性最高的部分，影响北方针叶林林冠层演替和养分循环。在北方森林中，林火干扰是影响林下植被物种组成、动态及其生态功能的一个重要驱动力。在全球变暖的背景下，未来北方针叶林林火干扰的强度和频度都会增加。而以往针对火后北方针叶林的研究主要集中在林冠层，对林下植被的群落构建的研究较少。

中国科学院沈阳应用生态研究所景观过程组助理研究员刘波通过测量林下植被群落的系统发育(Phylogenetic diversity)和功能多样性(Functional diversity)及性状分布(Trait distribution)，揭示我国大兴安岭北方针叶林林下植被群落构建随着火后演替时间如何变化。结果表明，大多数样地的系统发育、功能和性状分布格局以随机模式占主导，这表明随机过程可能在决定林下植被群落构建中起着至关重要的作用。与此同时，竞争排斥和环境过滤在一定程度上也决定了林下植被的群落构建过程。

以上研究结果以Understory Community Assembly Following Wildfire in Boreal Forests: Shift from Stochasticity to Competitive Exclusion and Environmental Filtering 为题发表在Frontiers in Plant Science上。刘波为文章第一作者，合作者包括加拿大湖首大学教授Han Y.H. Chen。研究得到国家重点基础研发计划(NO. 2017YFA0604403)、国家自然科学基金项目(NO. 31270511 & 41501200)等的资助。

文章链接

Conserved traits (Phylogenetic trait conservatism): traits are a legacy from their common ancestors and closely related species in phylogeny had similar traits
Convergent traits: traits have similar form or function but species are present in different lineages
Phylogenetic clustering: co-occurring species are more closely related in phylogeny than expected by chance
Functional clustering: co-occurring species are more functionally related with similar traits than expected by chance
Phylogenetic overdispersion: co-occurring species are more distantly related in phylogeny than expected by chance
Functional overdispersion: co-occurring species are less functionally related with dissimilar traits than expected by chance
Trait convergence: functional traits of co-occurring species are more similar than expected by chance
Trait divergence: functional traits of co-occurring species are less similar than expected by chance

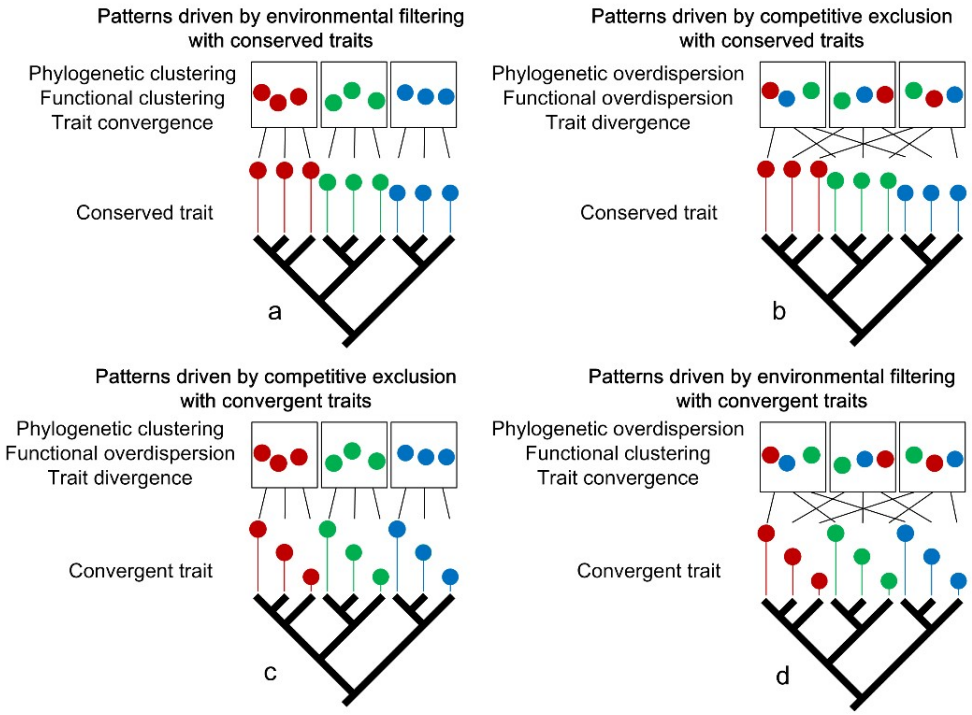

图1.系统发育与功能格局及其影响因子

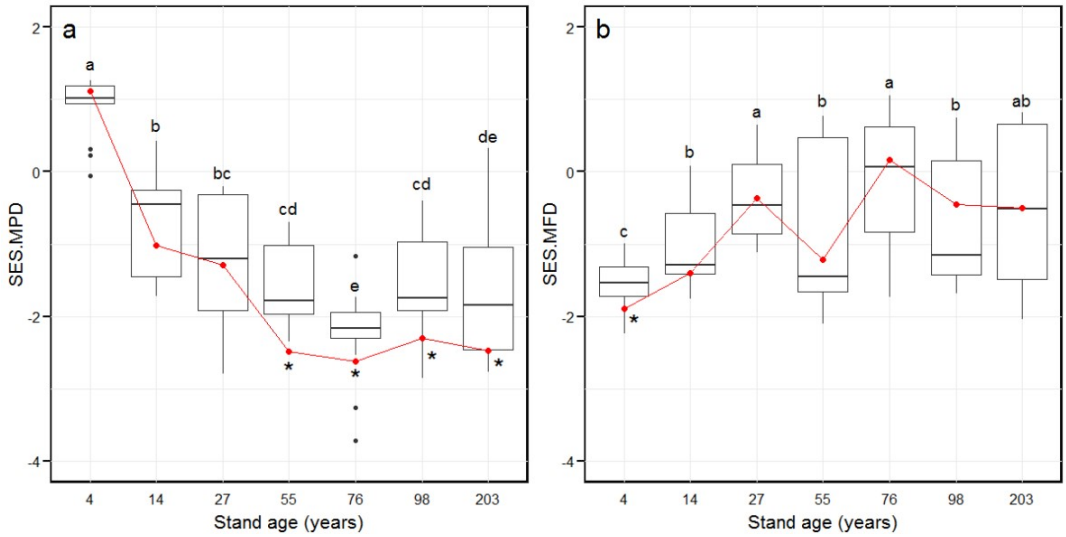

图2.系统发育与功能格局随演替时间的变化趋势