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Field layer important for Nordic people's forest preferences

New SNS supported research shows that field layer characteristics largely influenced the Nordic population's forest preferences. Active introduction and management of field layer may be encouraging for forest managers and policy makers - especially in an urban context - as it proposes a relatively quick possibility to increase the recreational value of many young forests resulting from afforestation or regeneration cuttings.



Photo: Young mixed stand with anemone obtained higher preference than middle-aged and old mixed stands with less preferred field layers

Field layer has been overlooked

Results from preference studies have been instrumental for implementing recreational and scenic values in forest policy, planning and management. So far, field layer, i.e. the herbaceous ground vegetation, has been regarded to be of limited importance for the recreational value of forests, when compared to other structural attributes such as tree species composition, tree size, variation in tree, extend of tree cover, number of tree species etc. However, this view has been based on limited empirical basis.

Findings from a new study of the Nordic population's forest preferences indicate that the con-

tribution of field layers to the recreational value of forest environments needs re-consideration. The study is the first in the Nordic countries (and to our knowledge also elsewhere) that specifically have assessed preferences for different types of forest field layers and their impact on the perceived recreational value of forest environments with various species combinations and age distributions.

Coordinated study in Denmark, Norway and Sweden

With economic support from Nordic Forest Research (SNS), members of the Nordic-Baltic Centre of Advanced Research on Forestry serving Urbanised Societies (CARE-FOR-US) have coordinated a preference study in the nemoral and boreo-nemoral vegetation zone of the coastal southern part of Norway, southern Sweden, and entire Denmark. Whereas earlier research on forest preferences in the Nordic countries has been limited to national or even regional and local scale, the coordinated study across the three countries has enabled, for the first time, direct comparative analyses of preferences between the Nordic countries and synthesise of results into a systematic knowledge-base at a Nordic level.

New insights

Responses from 1.500 Danish, Swedish and Norwegian's (in total 4.500 respondents) showed significant changes in preference ranking of forest environments purely caused by differences in their field layers. In fact, respondents ranked young forests with preferred field layer types over old forests and middle-aged forests with disliked field layers.

In all three countries there was high preference for anemone, medium preference for litter and

grass, and low preference for withered grass and rough field layer of nettles and other tall growing herbs, irrespectively of which stand they were combined with. While green field layers are in general considered to make a positive contribution to the scenic value of forests compared to bare or disturbed ground, the high ranking of litter suggests that field layer preferences are not merely rooted in aesthetic appreciation, but also perception of ease of movement and inviting overview/sight into the stand.

Perspectives for practice

The potential of increasing preferences of forest stands by active management of the field layer characteristics may be encouraging for forest managers and policy makers as it proposes a relatively quick and comparably easy possibility to increase the recreational value of many young forests resulting from afforestation or regeneration cuttings. This is especially relevant in an urban context, not at least due the growing awareness of forests contribution to human health and well-being by providing attractive recreational areas.

Young forests usually develop rough and species poor field layer of invasive weeds and these conditions persist for several decades, especially in afforestation on former farmlands and pastures. Such field layers deviate markedly from what people usually associate with forest, and the study findings indicate that it contributes to many young forests being perceived as unattractive and therefore avoided for recreational visits. A well-developed field layer often depend on an open stand structure, caused by selective logging or thinning activities. However, field layers of 'true' forest herbs have successfully

been introduced already in the young phases of stand development. Even where field layer management is not affordable over large areas, it could be used along paths and other frequently visited areas.

While, the perception-based approach used in this study addressed, first and foremost the recreational quality, introduction and management of desired field layer types may parallel help promote important biodiversity and ecosystem function of young forests, and potentially also achieve a more sustainable balance between recreational use and nature conservation in old "over-crowded forests" by redirecting users.

Priority for future research

Forest is the most frequently visited type of nature for recreational purposes in the Nordic countries, and policies of sustainable forest management imply that recreation is included among the formally prioritised products and services to be provided. In order to further develop the empirical knowledge base for forest managers and policy makers' decision-making, *updated* research on preferences for different forest types' and (new) management and silviculture systems' relative importance for the recreational value of forest environments should be prioritized in the future.

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