



norden

Nordic Forest Research  
Co-operation Committee (SNS)

**Project no:**

*Send the report to SNS-secretaries Jonas Rönnberg and Elin Andreasson ([andreasson.sns@slu.se](mailto:andreasson.sns@slu.se))*

## FINAL REPORT for PROJECT

Please notice that the size of text sections in the form can be adjusted if needed.  
The length of the final report should not exceed 3 pages. **Supplementary information can be attached**

1. Projekt titel	Fältskiktets inverkan på människors preferenser för skog i de nordiska länderna
2. Project title	Forest preferences as affected by field layer characteristics
3. Coordinator (name, address, telephone, e-mail)	Anders Busse Nielsen Swedish University of Agricultural Sciences, Department of Landscape Architecture, planning and Management, Box 66, 23053 Alnarp e-mail: <a href="mailto:Anders.Busse.Nielsen@slu.se">Anders.Busse.Nielsen@slu.se</a> University of Copenhagen, Department of Geosciences and Natural Ressource Management, Rolighedsvej 23, 1958 Frederiksberg, email: <a href="mailto:abn@ign.ku.dk">abn@ign.ku.dk</a> , phone: +4531330692
4. Duration	Project start, 1 March 2011. Project completion 1 September 2016 (Granted extension from 1 March 2014)
5. Cost	SNS-funding: 385.994 SEK Other funding: in kind funding by involved institutions

<p>6. The purpose of the project / main problems / hypotheses addressed)</p>	<p>So far, researchers have regarded the relative importance of field layer, i.e. the herbaceous ground vegetation, for the recreational value of forests as being limited, when compared to effects of harvesting and other structural attributes such as tree species composition and size of trees. However, this “irrelevant” view on field layer has been based on limited empirical basis. As a supplement to the knowledge developed by earlier studies of recreational preferences for forests, the overall aim of this study is to contribute with empirical knowledge about preference for different types of field layers and their effect. To do this we have studied recreational value of forest in the nemoral and boreonemoral vegetation zone of the coastal southern part of Norway, southern Sweden, and entire Denmark, which comprises the most densely populated areas in the Nordic countries.</p> <p>As a result of e.g. forestry subsidies, afforestation policies and adaptation of forests to climate change, oak and other hardwoods have been favoured for afforestation in this region, and partly due to the recreational merits of these species they are also increasingly replacing conifers when long-established forests are regenerated. The latter is especially the case in publicly owned forests close to cities. Both the concentration of people and the forest development has implied that the proportion of young and middle aged oak and other hardwood is of substantial importance for the recreational value, and this trend is expected to continue. With a focus on oak and mixed hardwood forests (e.g. Aspen, Birch, Hazel, Lime, Oak), the hypotheses tested were:</p> <ul style="list-style-type: none"> <li>- Forest preference scores increase with stand age when the field layer type is identical.</li> <li>- Preference for field layer is consistent across stand types and age classes.</li> <li>- Difference in field layer changes the preference ranking between stand types and age classes.</li> </ul>
<p>7. Brief description of the research plan and of possible larger deviations from the plan</p>	<p>The research applied an adaptation of the “Experimental Method”, which was developed in Denmark. This method is distinguished by its experimental design and its ability to embrace many survey topics. Respondents assessed photos, which in blocks only differ in respect of one factor – field layer characteristics. The photos for evaluation were produced by use of professional digital image editing like Adobe Photoshop. This technique has been successfully used in previous preference studies because it allows for controlling the variation in visual stimuli.</p> <p>Photos of young, middle-aged and mature (app. age of 20, 50 respectively 120 years) oak forest without understorey respectively mixed hardwood forest stands were manipulated to represent five distinctly different field layer types, resulting in 30 combinations rather than the originally plan of 48.</p> <p>Rather than the planned postal survey, data acquisition was outsourced to TNS Gallup, who obtained response from app. 1.500 adult respondents in each country, amounting to 4.500 respondents. Data compilation, error tracking and analysis were done nationally before merging data into a meta-data base for comparative analyses between the countries. The analyses were primarily carried out as randomized block treatments with the photographs as treatments and the respondents as blocks.</p>

<p>8. Results (max 2 pages)</p>	<p>Preferences increased with stand age when the field layer type is identical. Among the six stand types included in the study, the old oak was the most preferred and the young oak respective mixed stands the least preferred.</p> <p>Preference for field layer was consistent across the two stand types (oak and mixed) and three age classes (young, middle-aged, old). In all three countries, respondents had high preference for field layer of anemone, medium preference for field layer of grass respectively litter and low preference for field layer of withered grass or rough field layer of nettles and other tall growing herbs.</p> <p>Differences in field layer between stands did indeed cause significant changes from the preference ranking of the different stands. The most notable differences were that preference ranking of old oak and middle-aged mixed stands with rough field layer and fall grass were significantly lower than those of old mixed stand and middle-aged oak stand with anemone, despite the lower preference for the latter two stands when the stands had identical field layer. Even the two young stands with field layer of anemone surpassed the old oak and middle-aged mixed stands when the latter were combined with the least preferred field layer types - yet with less consistent patterns across the three countries.</p>
<p>9. What advantages have been gained by the Nordic collaboration</p>	<p>Whereas earlier research on forest preferences in the Nordic countries has been limited to national or even regional and local scale, the SNS funding has enabled coordination and execution of the first joint preferences studies in three Nordic countries of Denmark, Norway and Sweden. Beside identification of preferences on a national level, this research approach has enabled, for the first time, direct comparative analyses of preferences between the Nordic countries and ii) synthesise results into a systematic knowledge-base about forest preferences in the Nordic countries as affected by field layer characteristics.</p>
<p>10. Publications and other communication activities (International scientific peer reviewed journals, other scientific publications, short communications, web etc.)</p>	<p>Manuscript ready for submission to the international scientific peer reviewed journal: Landscape and Urban Planning (Impact Factor: 3.654, five year Impact Factor: 4.268) (As the paper is still in the review process we kindly ask you to not disseminate it outside the SNS Secretariat – we will inform you right away when the paper is publicly available).</p> <p>Forest Policy and Research Brief to be published online at the homepage of Nordic Forest Research: <a href="http://www.nordicforestresearch.org">www.nordicforestresearch.org</a></p>
<p>11. Project summary (about 1/3 page) for possible use in the News &amp; Views section of Scandinavian Journal of Forest Research</p>	<p>For project summary, we refer to the Forest Policy and Research Brief, submitted as part of the final reporting of the project.</p> <p>See also the attached manuscript in preparation for Landscape and Urban Planning.</p>
<p>12. Date and signature</p>	<p>Date: 30.08.2016</p> <p>Signature of project leader/coordinator:</p> 

