



Nordic Forest Research Cooperation Committee

Network no: N 2010-9

Send the report to SNS-secretary Katrine Hahn Kristensen
(hahn@life.ku.dk)

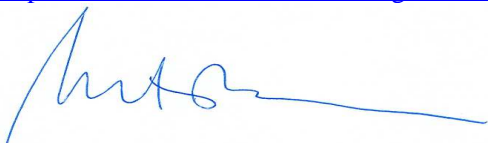
REPORT NETWORK ACTIVITY (meeting, conference etc.)

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. Aktivitetsens titel	Langtidseffekter af intensiveret høst til bioenergiformål – hvad kan vi lære af eksisterende eksperimenter?
2. Activity title	Long-term effects of intensified harvesting for bioenergy – what can we learn from established experiments?
3. Coordinator /contact person (name, address, telephone, telefax, e-mail)	Prof. Karsten Raulund-Rasmussen Forest & Landscape Denmark University of Copenhagen Department of Ecosystems and Biomass Rølgædsvej 23 DK-1958 Frederiksberg Phone: +45 35331666 Fax: +45 35331508 E-mail: krr@life.ku.dk
4. Duration	The activity started 1 / 1 2010 and ended 31 / 8 2010
5. Cost	SNS-grant: 19000 € Total activity cost (estimate): 12553 €

<p>6. Description of activity (incl. objectives, results, conclusions)</p>	<p>Objectives. Very intensive harvesting of biomass including branches, twigs and needles will significantly increase the export of nutrients from the ecosystem and often cause negative element balances. The intensive export will furthermore cause a reduction in return of organic matter to the soil. Both factors are believed to reduce the fertility of the ecosystem. Some of the problems when investigating the effects of very intensive harvesting are the long-term perspective and the costs.</p> <p>The purposes of the workshop were to:</p> <ul style="list-style-type: none"> • Search for already established experiments in Nordic and Baltic Sea Region countries that are relevant to evaluation of effects of very intensive harvesting on soil fertility. Relevant experiments include treatments of different harvesting intensity and fertilisation regimes, and, if possible, a combination of these. Re-evaluation and common synthesis of results may include indicators as: <ul style="list-style-type: none"> ○ Tree growth reactions to both intensive harvesting and fertilisation ○ Stand specific nutrient budgets ○ Soil properties (texture, mineralogy and pH) ○ Needle composition • Explore the possibilities for establishment of an international network of experiments relevant to documentation of long-term effects of intensive biomass harvesting and the possibilities to compensate by fertilisation. This may include suggestions for re-treatment of the experiments, if relevant. <p>The workshop should produce an overview of the existing relevant experiments and a strategy for future cooperation within this area.</p> <p>Activities. A number of people working with intensified harvesting and site productivity was invited to a workshop. The meeting was hosted by Skog og Landskap in Norway, 10-12 August 2010. Ten people from Canada, Denmark, Finland, Norway, and Sweden attended the meeting. Some invited guests could not participate due to other obligations. At the first day of the workshop each participant / participant group presented an overview of national experiments and activities. Research approaches were discussed in relation to visits to Norwegian field sites on the second day. At the last day of the workshop, the discussion of research approaches was continued and future research needs and cooperation possibilities were outlined.</p> <p>Results and conclusions. Several whole-tree harvesting experiments exist in Sweden and Finland, and some in Norway, but only few in Denmark. All countries have a large amount of fertilisation experiments that could also contribute to the evaluation of the sustainability of intensified harvesting practices. In the USA and Canada, a comprehensive network has been established to study effects of intensive harvesting on site productivity (the LTSF network). The Canadian network is currently making a meta-analysis of their data and invites other countries, also in Europe, to submit data for this purpose. Options for funding were identified, but relevant calls have not yet been identified. Detailed minutes from the workshop were recorded and will be available from the homepage of SNS. The presentations from the meeting will be distributed within the group. For further information each author may be contacted. The conclusion from the meeting is that there is adequate data and interest to make metaanalyses and existing data and create new experiments, also in a Nordic context, and that the group will continuously look for funding possibilities for the purpose. A structure for a metadatabase was outlined by Brian Titus. Further collection of data may take a starting point in this structure.</p>
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<p>7. Evt. publication/ communication</p>	<ul style="list-style-type: none"> • Final report and detailed minutes will be available from the SNS homepage. • Presentations from the meeting have been distributed among the participants.
<p>8. Activity summary (about 1/3 page) for possible use in the News & Views section of Scandinavian Journal of Forest Research</p>	<p>A workshop with the title: “Long-term effects of intensified harvesting for bioenergy – what can we learn from established experiments?” was held in Norway 10-12 August 2010. An overview was given of existing experiments in Nordic Region and North America that are relevant to evaluation of the effects of very intensive harvesting on soil fertility and possibilities to compensate negative effects by fertilisation. The establishment of a new international network of experiments was explored. Such a network should facilitate documentation of effects and it should form a basis for meta-analyses with wider geographical scopes. Ten people from Canada, Denmark, Finland, Norway, and Sweden attended the meeting. Overviews of national experiments and activities were given, and possible research approaches, future research needs and cooperation were discussed. The data basis and the interest to continue the formation of a network was present, and the participants will search for additional funding to continue to work. Detailed minutes from the workshop are available from http://www.nordicforestresearch.org/sns-research/networks/previous-networks/.</p> 
<p>9. Date and signature</p>	<p>Date: 2/11 - 2011 Signature of project leader/coordinator: Karsten Raulund-Rasmussen</p>