

Minutes of the Nordic Forestry CAR-ES meeting in Hyytiälä Forestry Field Station in Finland 18.-19.5.2006

Place: Hyytiälä Forestry Field Station.

http://honeybee.helsinki.fi/hyytiala/english/eng_index.htm

Organizers: Leena Finér and Hannu Ilvesniemi Finnish Forest Research Institute.

Participants: Management group, steering committee, invited speakers: Per Gundersen, Forest & Landscape, Denmark, Jan-Olov Weslien, Skogforsk, Sweden, Bjarni Sigurdsson, Agric.Univ. Iceland, Magne Sætersdal, Skogforsk Norway, Ingeborg Callesen, Forest & Landscape, Denmark, Leena Finér, Finnish Forest Research Institute, Finland, Hannu Ilvesniemi, Finnish Forest Research Institute, Finland, Riitta Väänänen, University of Helsinki, Finland, Jukka Laine, Finnish Forest Research Institute, Finland, Ari Laurén, Finnish Forest Research Institute, Finland.

Programme

Thursday 18.5.

14.30 CAR-ES meeting in Instituutti building, chairman Per Gundersen. The agenda comprised three themes.

1. Structuring of the research

The questionnaire of environmental services from different management options in respect of level of knowledge and the relevance of the research was discussed. Per had received about 4 replies to the test version of the evaluation table. Most found it useful, but difficult to cover the vast area of subjects. Relevant areas with little knowledge were identified and should be subjects of research proposals. The option to prioritise among themes should be given stronger emphasis.

The topic leaders Per, Jan and Bjarni should synthesise the tables rather than a national approach due to their higher competence and overview within each theme.

Per will take this further and contact the topic leaders with a new version if needed. As a next step a simpler version could be send to some end-users to see where knowledge is needed.

2. Applications

A SNS project application should focus on research areas with little knowledge and high relevance. An analysis of benefits and drawbacks of stump removal was discussed, since it is hot topics in Finland and Sweden at the moment. Ideas:

1. *Environmental consequences of hurricane damage. Which management options are available to modify the consequences ?*
Stump removal was suggested as part of this theme. Skogforsk Sweden is preparing an environmental impact assessment on stump removal at the moment.

2. *Role of mycorrhiza in C and N sequestration.* Cost E38 is working on this and also Eva Ritter, Icelandic agricultural University is part of a consortium preparing FP7 applications.
3. *New forests on agricultural fields.* A chronosequence approach was discussed. Not very relevant in Finland at the moment, but natural succession of woody vegetation is changing pastures to forest in Norway and Sweden at the moment. The European forest area is increasing by 3 o/oo per year at the moment. It was concluded that it might be most relevant to search for partners and opportunities in EU FP7.
4. *More on buffer zones? Riparian management is important in all countries due to the numerous functions and services provided by recreation (fishing), water quality and other issues. We decided to prepare a review for either Scandinavian Journal of Forest Research or Ambio.* From this review work we will later conclude if more research is needed in this area.
5. *Effect of intensified biomass utilisation and shorter stand rotation length on environmental services water, carbon and biodiversity. Use a CO2 model, e.g. the CO2-fix model by Fritz Mohren.*
6. *Larix – as an afforestation species. Benefits and drawbacks from Larix forest ? Larix sibirica is now acknowledged as indigenous in Sweden, and widely used in afforestation in Iceland.*

3. Staff exchange

Per suggested that some money should be allocated to accommodation for exchange of staff exchange between participating institutions on short term scientific missions. Salaries should be covered by the home institution. Short term work shops for finalising reviews. A call will be prepared and opened (Per and Ingeborg).

- to be continued on friday.

17.30 The excursion to the *SMEAR-II station* (<http://www.atm.helsinki.fi/SMEAR/>) guided by Jukka Pumpanen. Jukka showed us the numerous various field investigations that are taking place at the station, currently with focus on ground vegetation carbon exchange, soil gas exchange, eddy covariance carbon and water balance measured via diurnal stem diameter variation.

Friday 19.5.

Morning:

Seminar on the use of buffer zones in forestry in Instituutti building:
Prof. Leena Finér: *A short introduction to use of buffer zones in Finland*

M.Sc. Riitta Väänänen, University of Helsinki: *Phosphorus retention in soil in forested buffer zones*

Dr Ari Lauren, Finnish Forest Research Institute: *Modelling the role of buffer zones in controlling nitrogen leaching to watercourses*

Ph.D. Ingeborg Callesen, Forest & Landscape Denmark:
Forest stream research and buffer zone issues in Denmark

Jan Weslien: *277 Balsjö - a case study of buffer zones and nutrient leaching on a catchment scale*

10.00 Excursion to Konilamminsuo experimental field: professor Jukka Laine, Finnish Forest Research Institute: *Nutrient retention in a restored peatland buffer. Tracer experiments revealed the effectiveness of nutrient retention in the peatland, where a zero gradient ditch controlled the water level effectively. It is planned to restore 60.000 ha drained peatlands in Finland.*

Afternoon:

Meeting continued chaired by Per Gundersen. Decisions made.

1. A review on buffer zones. The outline will be prepared by Per and Ingeborg. A draft should be ready by 15. September in order to prepare the final manuscript during the meeting in Iceland in October 2006.
2. Application for SNS by September 1. Jan Weslien volunteered to prepare an application on the topic *Environmental effects of shortening rotation ages – age structure of forests - water cycle - biodiversity*. The methods discussed were simulations of forest structures using existing model tools, and reviewing existing experimental research activities. See activities within Bioenergy, e.g. the Enertree software. Bjarni and Per will send examples of successful applications to Jan.
3. Application for SNS by September 1. Hurricane damage – comparison of salvage operations during the 1981, 1999, 2006 hurricanes. Lead by Per Gundersen.
4. Per will ask Niels Elers Koch (member of the SNS committee) for advise on the topics for these application and on our chances for success with these topics.
5. The *Larix* project can be taken up by those who are interested (Per and Bjarni ?).
6. Next meeting: 12. – 15. October in Iceland hosted by Prof. Bjarni Sigurdsson.
7. The homepage construction will continue on www.nordicforestry-cares.org.

Riparian buffer zones in the Nordic countries and Baltic states – outline of review.

Deadline for draft 4-5 pages on each section September 15th, 2006

A) Intro: What are buffer zones – shape, size, function. Management zones , ecological zones determined by water regime ?

Brief statistics on riparian forest areas and legislation within each country (Table). Draft by *Ingeborg and Per*

Kan du ikke starte på sådan en table Ingeborg?

B) Water quality (N leaching, DOC, erosion), *Leena Finer et al.*

C) SOM – carbon storage incl.green house gas exchange, *Bjarni Sigurdsson*

D) Biodiversity, including some brief considerations on the benefits in the stream, *Magne Sætersdal and Jan Weslien*

E) Current management practices in each country – benefits and drawbacks of using buffer zones. Recommendations, *All at the next meeting*