Minutes for the 2nd RECIPE meeting

held on Thursday 23rd of October – Sunday 26th of October 2003 at Centre Nature A. Bermont , Charquemont, France

Present:

Steve Chapman (Macaulay Institute)(Project Co-ordinator and Chair)

Harri Vasander (UNHEL); Mika Yli-Petäys (UNHEL); Philippe Grosvernier (LINECO); Vincent Pheulgin (Univ. Neuchâtel); Viviane Froidevaux (Univ. Neuchâtel); Genevieve Chiapuso (UFC-LBE); Daniel Epron (UFC/Univ. Nancy, Friday only); Gerard Schwarz (Macaulay Institute); Alexandre Buttler (UFC-CE, AR-WSL); Fatima Laggoun-Defarge (ISTO); Walter Rosseli (AR-WSL); Rebekka Artz (Macaulay Institute); Andy Siegenthaler (AR-WSL); Jean-Robert Disnar (ISTO); Laure Comont (ISTO); André-Jean Francez (ECOBIO); Estelle Bortoluzzi (UFC-CE/LBE); Daniel Gilbert (UFC-LBE); Antonis Chatzinotas (EPFL, Friday-Saturday); Andreas Gattinger (TUM-BO); Philipp Steinmann (Inst. Géologie); Francky Sabot (UFC-CE); Marie Pandolfo (UFC-CE); Emilie Gauthier (UFC-CE).

Date	Description	Action
Thursday (23rd) Evening	Arrival of delegates Pre-meeting: welcome, domestic arrangements and introductions	
Friday (24th) Morning Session	Brief introduction and meeting programme by S. Chapman. The status of the website was discussed briefly. It was decided to include all progress presentations on the website. This was followed by presentations on current status of progress by:	All presentations to be e-mailed to Rebekka who will compile these and include on the RECIPE website.

	Rebekka Artz (for Macaulay Institute, Scotland field site) Fatima Laggoun-Defarge/Jean-Robert Disnar (for ISTO) Estelle Bortoluzzi (for UFC-CE, UFC-LBE, Le Russey France field site) André-Jean Francez (for ECOBIO, Baupte France field site) Mika Yli-Petäys (for UNHEL, Finland field site)	
Friday (24th) Afternoon Session	Continuation of progress reports by: Andreas Gattinger (for TUM-BO) Andy Siegenthaler (for AR-WSL, UFC-CE, Univ Neuchâtel, La Chaux d'Abel Switzerland field site) Antonis Chatzinotas (for EPFL) Daniel Gilbert representing Carine Maitre (UFC, socio-economics France) Daniel Epron (EPFL/Univ. Nancy) **Matters arising from Besançon meeting that should be discussed at Charquemont as follows. It was proposed to discuss these in 4 smaller groups during the following days. Groups were as follows:** **Socio-economics (S)** **Microbial and molecular microbial ecology (M)** **Gas exchange, plant diversity and productivity (G)** **Soil analyses and soil and water chemistry (C)** **IRGA's and chambers:** Due to the differences in IRGA models and gas chamber designs used by the different partners, an intercalibration should be ideally made to assess errors, this should be possible at Tampere if participants wish to do so. In addition **Calibration of the gas exchange model with abiotic factors:** Parameters to measure were discussed. It was discussed at Besançon that there are still certain measurements that are problematic. There is no current consensus about methods determining the photosynthetic capacity of mosses. This is easy to do for most vascular plants as leaf area index (LAI). A consensus should be reached on how to determine this for RECIPE. A similar problem may be encountered due to desiccation of, in particular, *Sphagnum* mosses. Estelle explained that desiccated moss surfaces have very low levels of photosynthesis and hence can influence determination of the net ecosystem exchange (NEE) if they drop to near-zero fluxes.	**To be discussed at smaller workgroup meets:** Necessity of intercalibration exercises (group G) Working method for determination of LAI for mosses (group G). Estelle to e-mail the finalised desiccation index method to the RECIPE group.

	Thetaprobe measurements were not satisfactory. Estelle has developed a simple method to determine a desiccation index, which she can share with us by e-mail.	
	There is a large discrepancy in the frequency at which gas exchange will be measured at the different field sites due to differences in man power. Daniel Epron explained that the gas exchange model needs to be calibrated with sufficient data in order to be accurate enough. Although episodic fluxes cannot be caught with a weekly measuring schedule, a lower frequency may introduce an even larger error. Some groups can only manage to measure on a 2 or 3 weekly or even monthly schedule. It was suggested that the model could perhaps be calibrated on one or two sites and the model tested for those sites with lower frequency of measurements. In addition, the different sites have placed their collars in different situations (successional communities in Finland and Scotland) and there is no consensus on how to measure primary productivity. These matters need to be discussed in the group discussion.	Discuss minimum frequency of gas exchange for model calibration and how to incorporate sites with lower numbers of measurements. To agree on a schedule for measurements for the different sites. Discuss differences in the situation of the gas exchange collars. Agree on a common strategy to measure primary production (group G).
	The fluorometric photosynthesis pulse method was presented and discussed for potential use as a stress index. The model was deemed to be still very controversial. This type of measurement was thought beyond scope for the Scottish partners and probably also for the Finnish group.	No action
	Methane determinations. The different systems and methods were discussed. Some groups sample methane above the same collar as the one used for CO_2 exchange, others use a different location. The advantages/disadvantages of all should be discussed in the group discussions and an agreement reached on where (and how) to sample methane.	To discuss methane determination methodology (group G)
	13C/12C. the possibility of doing 13C gas analyses needs to be discussed in the group discussions	Discuss 13C-gas analysis possibilities (group C)
	Water chemistry: peepers. It needs to be discussed who will co-ordinate this and how to do analyse in the unsaturated zone.	Discuss peepers sample co-ordination and analyses in the unsaturated zone (group C)
	Sampling and dispatching for WPI: Alexandre explained the scheme in its current version and confirmed that the zero level for all cores will be the top of the capitulum or the bare peat surface. Sampling will have to take place in the next few weeks and we will have to co-ordinate the dispatch. The sample and dispatch scheme and these points were to be discussed at a later stage during the meeting.	No action
	Trench preparation. The trenches have been prepared at Le Russey and in Finland. The Scottish group will do this in the next few weeks, as will the group at Baupte.	No action.

	Litter and WPII and III. Alexandre mentioned that the pot length was increased to 45 cm because of the core length for WPI. This was followed by a discussion about the keystone species to be used for WPII and also for the labelling experiments. Andreas had mentioned the possible constraints in his presentation. It was agreed that *Sphagnum fallax* and at least *Eriophorum vaginatum* should be used as keystone species as these were naturally present at all sites. The remaining choices are *Eriophorum angustifolium, Polytrichum strictum* and *Carex rostrata*. Of these, only *E. angustifolium* appears to be present in all countries. This matter should be further discussed as it has implications on the amount and types of ^{13}C-labeled litter to be produced. The WPI sampling should also be co-ordinated for those measurements that will be performed through the year, in order to time growth phases (biomass formation).	Agreed on using *Sphagnum fallax* and *Eriophorum vaginatum* as keystone species for WPII and III. An agreement remains to be found on the use of the other species for either WPII or III. It will also have to be decided if all sites will receive ^{13}C-labeled litter or not (to be discussed). To be discussed.
Saturday (25th) Morning Session	Group discussions, followed by update on progress from each of the different groups (check RECIPE website for group reports). Group S (socio-economics) – Discussed topics: - state of work in the different countries - main topics to be included and discussed in WP1 - structure/outline for WP1 - timetable and next steps Group M (microbial and molecular microbial ecology) – Discussed topics: - Sample fixation and shipping - DNA extraction method standardisation - Protist library and co-ordination of analyses - Biomass and volume requirements - Dual ^{13}C/^{15}N labeling issues - Anoxic sampling issues Group G (gas exchange and diversity) – Discussed topics: - Methodologies of methane measurements - Chamber differences and potential intercalibration - Frequency of gas measurements - Abiotic parameters to determine - Plant biometry	Group S decisions Group M decisions Group G decisions

	- Primary productivity - Selection of patches and issues with potential upscaling - Vegetation surveys and diversity Group C (water and soil chemistry, organic matter) – Discussed topics: - Replication of chemical analyses over time - Size fractionation and influences on organic matter composition - Potential isotopic analyses in size fractions - Pore water sampling by peepers - Comparison of phenolics and lignin determination protocols	Group C decisons
Saturday (25th) Afternoon Session	Excursion to field site at Le Russey with explanations on experience gained during preparation of the trenches for WPII and III. The need for further levelling of the peat surface while monitoring the water table was explained. The handling of the corers for intact peat core sampling was demonstrated, as well as the procedure used for the addition of the keystone species into the pots. A 5 cm deep ring of the same diameter as the pots should be filled with porous peat to the surface (for sedges) or to the level required to take the moss carpet. *Sphagnum* carpet is to be sampled intact from a site where there is sufficient interlocking of the different *Sphagnum* stems to avoid the carpet disintegrating during transfer. The same procedure should be adopted for *Polytrichum* if this species will be used. Upward growth of mosses during the experiments should be accommodated with narrow extension collars above the pot so that the carpet does not disintegrate. The procedure the team at le Russey used to transplant *Eriophorum* species was also demonstrated. They used 4 plants per ring. Three primary roots were left intact as well as three leaves. These have been planted now in order to establish in time for the start of the experiment in Spring 2004.	Updated file: Experiences with the trenches at le Russey
Sunday (26th) Morning Session	The minutes of the kick-off meeting at Aberdeen were passed. It was agreed to send all presentations, as well as the reports of the discussions from the different groups should be e-mailed to Aberdeen for inclusion on the RECIPE website. The official inclusion of Daniel Epron when at the University of Nancy was approved without objections. Discussions with Nancy about the budget are ongoing. The necessary changes for the EU contract will have to be checked by Alexandre/Steve. Hauke's move to Leipzig is now a fact. Antonis will also move in April. As their funding for RECIPE	E-mail group reports for inclusion on the RECIPE website to Rebekka. EU contract change requirements to be checked.

	is from the Swiss government, this budget cannot follow to Leipzig. The Swiss partners will try to secure the Swiss funding as any payment from OFES has to be agreed by them (Alexandre to look into the possible options). Andreas mentioned that consumable expenditure will be a part of the basic funding structure at Leipzig. Continuation of group discussions and report back from groups. Further discussions about the subsampling scheme. This was now agreed with amendments. The moss layer will be defined as the moss carpet which is physically separate from any old catotelm peat. This definition will also make comparison with WPII easier. It was suggested that the backfilling of the holes left by the corers should be done with a system containing the peepers. Fatima pointed out that peepers will not work in the unsaturated zone. A solution should be further discussed within the chemistry group. Sample slicing and dispatch was discussed briefly but no agreement was reached in this session. The subject was to be finalised in an additional evening session.	Updated file: Core slicing scheme
Sunday (25th) Afternoon session	Excursion to La Chaux d'Abel. Daniel and André-Jean demonstrated how to take the undisturbed samples for rotifer and microbial ecology analyses using a graduated sample container. The moss sample should be excavated *in situ*, by cutting away material next to the side of the sampling container and then cutting underneath the container with scissors or a knife. The underside of the sample should be trimmed to give a flat surface in order to give a precise volume. This sample should then be weighed and shipped, being labelled with details of both the exact volume and wet weight.	
Sunday (25th) Evening Session	**An extra meeting was held in the evening to clear up unresolved matters** **Sample labelling scheme.** A common sample labelling scheme was agreed. The following label will be used: Country_Date(of sample taking)_Situation_Layer_Replicate As an example of the notation: **FR_26/10/03_A_2_1**	

	The country codes will be as follows: FR (France, Le Russey) FB (France, Baupte) CH (Switzerland, La Chaux d'Abel) SC (Scotland, Middlemuir Moss) FI (Finland,) The situation code should be a capital letter (i.e A to Z) and can be country-specific, as the different plots are different anyway. The layer code corresponds to the layer as in the revised core slicing scheme (i.e. 1-8) The replicate code is for each different core or moss sample taken. **Sampling, Core sectioning and dispatch.** Certain samples for André-Jean (rotifers), Daniel (diversity by counting) and Antonis (protists by FISH) have been taken separately in the field, so these should not come from the cores. Edward will use the same samples as Daniel – it needs to be ascertained whether he can use the exact same sample or whether he will require a separate sample. André-Jean and Daniel's sample should be a 75 ml (André-Jean later changed this to 150 ml per e-mail) beaker with material each, and Antonis sample will also be a 75 ml beaker with 50 ml of 2% glutaraldehyde added to the material in the field. It was agreed that the following numbers of cores would be taken: France Baupte: 6 France le Russey: 9 CH, La Chaux d'Abel: 12 Finland: 15 Scotland: 12 Total cores: 54 Assuming that each core is sliced into 8 sections and sections 2,3,4,6 and 8 are shipped (i.e. 5 layers for analysis on average), this would give a maximum of 270 samples. It was agreed that sample slicing should be done as precisely as possible using a template. As we will have to do this in the lab, we should seal the cores taken in the field and transport them upright to the lab. The slices should then be weighed to obtain a wet weight, which will give us the wet bulk density.	The subsampling and dispatch scheme has been updated according to the discussion points.

	A subsample should then be taken, its wet weight recorded and dried at 105ºC to obtain a dry wet. The slices can then be samples for the different analyses. After a few select intact samples for Daniel, Edward and Fatima, the rest of the sample should be homogenised. This should be done by cutting with scissors or scalpels to ca. 1 cm^3. Samples for all other analyses will then be taken from random blocks of 1 cm^3, ideally using least 3 blocks for each analysis sample. **Sampling order.** Sampling order of the countries does not need to be prioritised, but it would help to stagger field sampling somewhat to ensure the analysis can be done as soon as possible after shipping. Finland will start with the sampling programme and Scotland and Baupte can wait. This means that only the people sampling at Le Russey and Chaux d'Abel need to co-ordinate their sampling. **Tampere meeting** It was discussed when to hold the next progress meeting. It was decided that this would be best in the 2 days prior to the Tampere meeting, to enable both progress reports and a field visit to the Finnish site. The next RECIPE meeting is therefor fixed for the 5th and 6th of June 2004.	E-mail contact by all partners to ensure there is no large quantity of samples from all countries at the same time. Next RECIPE meet: 5/6 June 2004, Tampere, FI.