

Report from the Terrestrial Flagship Meeting Feb 2020

Terrestrial Ecology Flagship core group Meeting February 24th 2020.

Venue: Zarkofagen meeting room, Norwegian Polar Institute, Fram Centre, Hjalmar Johansens gate 14, 9007 Tromsø.

Participants: Angela Augusti, Josef Elster, Eva Fuglei, Masaki Uchida, Christina Pedersen, Mette Marianne Svenning and Yoo Kyung. Via SKYPE: Maarten Loonen, Åshild Ønvik Pedersen, Elie Verleyen.

SUMMARY

Angela: Welcome words and around the table presentation.

Intro and upgrade on previous meetings: figures of participants and activities developed.

Proposals:

SSF proposal 2017 (PI Christina Pedersen):

The Terrestrial Ecology Flagship in Ny-Ålesund: reinforcement and further development - activities for 2018-2019. The project funded two meetings one in Ny-Ålesund and one in Longyearbyen (and also one in Tromsø 2020).

SSG-proposal March 2019 (PI Eva Fuglei):

Proposal to the Svalbard Strategic Grant for the realization of a side meeting prior to the Svalbard Science Conference in Oslo 2019 (Support for Events - SSF). The project funded one meeting, the arrangement of a side meeting at the SSC meeting in Oslo November 2019.

Meetings:

Oslo meeting November 2017, one day, 9 people

Worked out six working groups (WG):

WG 1: Animal adaptations (Åshild Ø. Pedersen and Maarten Loonen)

WG 2: Vegetation dynamics (Masaki Uchida and Angela Augusti)

WG 3: Soil processes and communities (Mette Svenning and Stefano Ventura)

WG 4: Carbon and Nutrient fluxes (Angela Augusti and Masaki Uchida)

WG 5: Freshwater systems (Elie Verleyen, Dirk Mengedoht, Josef Elster)

WG 6: Sensitivity of ecosystems and integration (Maarten Loonen and Elie Verleyen)

Flagship meeting in Ny Ålesund in August 2018 around 18 people, 2 and half days,

Visiting the experimental sites in Ny Ålesund

Presentations of studies of the participants

The very first draft of the paper review came out

Flagship meeting in Longyearbyen in October 2019, 20 people, 2 and half days meeting

Writing sessions >>> paper review

Flagship meeting in Oslo a Side-Meeting of SSC in November 2019, 16 people, 1 day meeting

Writing session continue and Pete Convey did a large editing job.

Discussion about the scientific gaps and future perspectives

Christina: there is a need for everyone in the terrestrial flagship to take a look at the web page for the Flagship here: <http://nysmac.npolar.no/research/flagships/terrestrial.html> and at the Google list to make sure they are on the list.

1. Åshild: update of the manuscript submission

After the side meeting in Oslo the MS has been circulating in a core writing group (Maarten, Åshild, Peter, Geir W, Eva). An updated version of the MS is now sent out to a larger group, and then we will be sent out to the whole Flagship group. Åshild need a complete e-mail list from Maarten and the End Note library, we are lacking one figure, question for Maarten. Future perspective session of the MS is lacking details and need to be shortened. Time limit is Wednesday February 26, then it will be sent out to all co-authors for comments. Steve Coulsen will also be invited to be author. The MS will be submitted to the Polar Research Journal.

An End-note library will be made for both the MS and for all publications related from research in Ny-Ålesund and it will be considered to put on the Terrestrial Flagship web page too.

2. All: Discussion about future perspectives

Maarten pointed on that Ny-Ålesund is lacking permafrost studies, how the permafrost may be related to vegetation, carbon pool etc. Up till now limited permafrost expertise in Ny-Ålesund.

Discussion about the scale for permafrost studies: Both on landscape level and smaller scale. Moisture gradients, start cooperation with the glacier flagship.

Angela: Maybe it is necessary to focus on “hot spot” sites (wet, dry) for permafrost measurements and influence of permafrost on vegetation and carbon emissions.

Maarten: about grazing exclosures. Snow fences are removed, how to preserve infrastructure that can be re-visited? Used Zackenberg, Greenland as an example: they are running a large monitoring program. This may be different from Ny-Ålesund that have many small projects run by many countries and researchers. How to improve science.

Mette: how to continue sites that are already established? Decide which one to continue. Together with SIOS long term monitoring.

Maarten: made a comment on the issue about starting up new projects and selecting new plots for installing new instruments and infrastructure, and problems that may develop without informing the other members of the terrestrial flagship about this. Two examples mentioned: COAT (large infrastructure establishment) and Elisabeth Cooper (cameras).

Angela: mapping experimental sites, GIS tools, easy product that show the different experimental sites. Christina will inform about a new GIS system developed for Ny-Ålesund later at the agenda.

Mette: made a point on that large projects will drive the infrastructure. At an early stage important to share the plans and for other to join or have input to the planning. The need for other projects to be looped in at an early stage.

So how to better inform and cooperate within the terrestrial flagship?

Angela: Organise our activity in a more cooperative way, this can be done if people are aware of what is going on at Ny Alesund.

Christina: Informed about different tools to improve information:

1. RIS, 2. Ny-Ålesund GIS spatial scale, 3. New dedicated web pages. There will be a “news part” at the new web page.

Angela: Suggested to start a news-letter for the flagship.

3. Christina presented the GIS platform as a tool.

New layer in the «Svalbardkartet» with information about instruments and field sites in Ny-Ålesund. Will be developed a dedicated interface for the GIS system. System and data available for all. All Ny-Ålesund researchers will be (have been) contacted to provide information about their field sites and projects. Attribute information include: title, position, instrumentation, study site or object. What type of data are collected? Who is the owner of the project?

Christina & Co are in the process of collecting the data and the system will be opened in March before the next NySMAC meeting.

They are focusing on long term project first. All projects that may have an impact on the tundra. Snow fenced, exclosures, temperature loggers, weather stations. The Kings Bays area plan is also included.

Editors are Vera Sklet and Christina.

Now focusing on Ny-Ålesund and close area, but actually can be extended because there is no geographic limitation to the system.

Coffee break

4. Discussion about scientific gaps.

Comments to the list of scientific gaps:

Scientific gaps in Ny-Ålesund studies.

1. Energy and nutrient flow within and across ecosystems
2. Above ground terrestrial food-web interactions
3. Below ground terrestrial food-web interactions
4. Freshwater ecosystems
5. Drivers of ecosystem change
6. High Arctic carbon pools and fluxes
7. Anthropogenic impacts

Maarten: what do we mean with «energy»?

Mette: linked to temperature and metabolic activity in microbes.

We agreed that is better to eliminate “energy” from the title and to use “temperature” instead

Maarten express also perplexity about the “Anthropogenic impacts” paragraph and he said he will speak with Geir about it

The new list of scientific gaps:

1. Temperature and nutrient flow within ecosystems
2. Above ground terrestrial food-web interactions
3. Below ground terrestrial food-web interactions
4. Freshwater ecosystems
5. Drivers of ecosystem change
6. High Arctic carbon pools and fluxes
7. Interaction between ecosystems and Flagships

About the working groups:

The six working groups were created in 2017 and Maarten/Angela proposed to discuss on the possibility to change or re-structure them at this point, in particular in view of the next application in autumn/winter 2020.

WG1 Animal adaptation (Suggest to change to food web interaction, also in relationship to what has been written in the paper)

WG2 Vegetation dynamics

WG3 Soil processes and communities

WG4 Carbon and nutrient fluxes (suggestion to combine WG 3 and 4 in the new application)

WG5 Freshwater systems

WG6 Sensitivity of ecosystems and integrations (Skip this and include in WG1)

Next funding application: we should be stimulated by the manuscript we are writing on. Microbiology is missing. Include microbial activity and to focus on infrastructure.

Yoo: for microbial genetic analyses, use the same primer set, to better compare the data. Share info on what type of primer to use. For analysing bacteria, make common primer set.

5. Christina: Future call for funding in 2020

Christina gave information on future calls for funding: Annual call SSG 4 mil NOK. Good probability to get funding, seed money.

Two different aspects to apply for: 1. Network 2. Workshop.

We should go for the network projects. Application must be submitted by Norwegian institution. Funding scale up to 500.000 NOK up to 2 y project. 12-24 months.

We should look at the possibility for funding for bringing researcher together to analyse already existing long term datasets, for producing joint publications. Also bigger Workshops or mini pilot projects have been proposed from other flagships. We have to discuss further what is needed.

Next call will be autumn/winter 2020. Not decided yet.

Christina about the new joint flagship meeting. Nutrient cycle project. Period: 1 March 2020-28.feb 2022. Budget 490.000 NOK.

Christina asked for input about the homepage, how to update the terrestrial Flagship home page. There will be a new homepage for the NyA research station that will include all the information at one web page. The new web page will have the Flagship pages listed and also a researcher guide.

6. The new application

Angela summarized the attempt made last November to participate to the call: 2 meetings, one to discuss scientific gaps (from MS), and another to work on a joint multidisciplinary project.

Angela made another suggestion: base the proposal on a super site pilot experiment, decide for the site, better if a manipulative experiment is present and plan multidisciplinary experiment (effect of the manipulation on plant, microbial community, soil, nutrients, ect).

General discussion about to start with some of the old sites, sort out protocols. Organise workshops. To start with the knowledge gaps. Link up to existing activity. Decide the aim of the proposal. Start with the old enclosures from 1978 as one starting point for experiments. Questions around grazing, but can also be used for other questions than grazing (40*40 m). Mette and Elie were concerned about the limitation of the experimental design and sampling strategies.

Angela proposed to think of different ideas and to meet (in the autumn before the meeting of the Joint Flagship "Nutrients", to be able to discuss the next application. Or to have a SKYPE meeting after the MS is submitted.

Conclusions: need to optimise our infrastructure, and discuss to develop the idea of "super site".

Elie: sample preserved stored in Tromsø. No places in NyÅ to store samples. Sample data base. Terrestrial lab may be locations for that.

Eva: Veksthuset terrestrial lab.

Information about the process of the new terrestrial laboratory. The new lab facilities will be ready for use this summer. The vaskerilab will be used for other purposes this summer, and after that it will go back to be used as a lab again after 2020.

KB are working with how much it will cost to use the lab facilities, but probably the same price as the vaskerilab. Will be presented at the Nysmack meeting in Iceland.

We will start to work on a list of equipments for the terrestrial lab. Two lists were made at the Flagship meeting in Ny-Ålesund in August 2018. We will circulate them and start to make proper lists of lab equipment.

Angela: summed up the meeting.

Merge the WG. We now have a few ideas for the proposal that we can continue to work on.

Work on the description of the home page.

Work on the contact list.

Waiting for the GIS platform.

Keep in mind the meetings in Rome for the joint flagship project. The terrestrial flagship must be present. Money for 25 people.