Ny-Ålesund Flagship workshop Longyearbyen 2019

Records from the workshop

Tuesday October 8

Maarten: welcome and introduction

Who will be interested in being the leader for the flagship, short information and discussion about this.

Manuscript: will be the product of the NyÅ workshop and LYR workshop in the final report to the Norwegian Research Council.

Presentations:

Geir W Gabrielsen and JC links to the other flagships to show possibilities for cooperation in NyÅ.

1. **Geir Gotaas**: NyÅ research strategy Flagship contribution. 20 institutions from 11 countries
2. **Geir W. Gabrielsen**: What are the next steps? NPI will be employing four permanent research positions related to each of the flagship.
3. **Bjorn Tytgat**: Protistology and aquatic ecology. Arctic soil and lake microbiomes. Biological soil crusts. Microorganisms, biogeochemical cycling & ecosystem functioning. Cooperation: vertebrate
4. **Ulf Karsten**: Arctic soil and lake microbiomes Cryptogamic covers – biological soil crusts
5. **Ekaerina Pushkareva**: Arctic soil and lake microbiomes. Soil organic matter structure
6. **Masaki Uchida**: Carbone and nitrogen cycle, response to climate change, glacial retreat. Estimates of primary production in salix polaris. Compartment model created (Uchida et al. 2016).
7. **Elisabeth Cooper**: review of vegetation activity, who and what have been done?
8. **Alfred Stach**: Kaffiøyra and Petuniabukta. Geoecology. Increase in trend of biomass, NDVI results. Vegetation biomass.
9. **Hans Tømmervik**: Vegetation mapping and monitoring. Effects on vegetation by tourists. Vikhamar-Schuler et al. 2016. Warming, melt days, winter warming events.

We discussed further the structure of the Manuscript (MS).

Wednesday October 9

Maarten structuring the MS including a timeline on the MS

Included are responsible for each topic and for contacting people

Presentations continue:

10. **Thomas C. Jensen**-svalbard freshwater invertebrate fauna, lake, ponds. Goose impact on arctic ponds, zooplankton biodiversity and dispersal of birds
11. **Jean-Charles Gallet**: snow pack, atmospehere, contaminanst
12. **Marie Sabascka**: microbiology

13. **Ilaria Baneschi**: Bayelva glacial drainage
14. **Simone Lang:** Geoecologist, responses of mosses and lichens to climate change, ecosystem functioning
15. **Mariasilva Giamberini:** Carbon fluxes from tundra - project: CZO@Bayelva - site: Bayelva basin
16. **Åshild:** COAT, monitoring svalbard reindeer
17. **Virve:** COAT, monitoring vegetation
18. **Eva:** COAT, Svalbard rock ptarmigan, arctic fox
19. **Maarten:** Terrestrial flagship studies, monitoring and new results
20. **Vera:** Ny-Ålesund research station

After lunch we organised and sat down in different writing groups with the following structure of the MS:

Introduction: Maarten

Land – abiotic components (Jean-Charles).

- Climate change – what are the changes in temperature, snow and ice, season length, sea ice etc.

Land – biotic components

- Vegetation (Elisabeth, Hans, Virve, Ulf, Simone Lang, Alfred; Uchida has a connection that can be included here)
- Soil (Katja, Ulf, Ilaria, Uchida)
    - Permafrost (active), microbes and gas exchange (Julia Boike?)
    - Soil invertebrates (Steve Coulson)
- Vertebrate species and communities (Eva, Åshild, Maarten, more?)
- Freshwater (Ilaria, Thomas, Bjørn, Marie, Dag Hessen)
- Pollution – local and long-range pollution (Geir W. G., Maria Granberg, Martine)

Thursday October 10

Progress of MS

- 12.10.2019 Text to ML
- 14.10.2019 text to participants, **After talking to the Editor Helle Goldman for the Journal Polar Research, the MS is very welcoming and there have been several synthesis papers published there earlier also from the Marine flagship in Ny-Ålesund. No problemes with many co-authors. no pages, tables, figures**. Our estimate is 40 authors.
  https://polarresearch.net/index.php/polar/apc
  Info for authors: https://polarresearch.net/index.php/polar/author
- 21.10.2019 improvements of MS to ML
- 01.11.2019 text to participants
- 04.11.2019 SSC Oslo

Figures for the MS

Area map

Contamination hotspots

Boxes and arrows

Alfred Stach: suggested some NDVI figures, 1985-1987 and 1989 and 2016-2019, maps shoving changes was discussed. Virve and Hans: Not the best idea to make a NDVI map that is not published yet, must be linked to biomass.

Åshild: Make a simple study area map, rivers, ponds, glaciers

Ulf: overview map, topography, surrounding. Second map with more details.

Appendix for the MS

Long term time series must be listed

Hotspots contamination (+map)

NEW SSG proposal (Svalbard strategic grant proposal)?

Interaction between flagships:

-seabird nesting and nutrients from land to sea (Terr+Marin) *Virve and Geir W*

-fresh water discharge and lake dynamics in glacier foreland (Terr+Glaciol+Marine) *Ilaria*

-atmospheric nitrogen deposition and vegetation productivity (Terr+Atmospher) *Maarten, Hans*

-carbon balance on arctic tundra (Terr+Atmospher) *Uchida and Hans*

-long range transportation of pollutants (Terr+A+Glaciol) *Geir W*

-pollutants released from glaciers & snow (Terr+G+A) *Geir W*

-coastal processes erosion nutrients (sea aerosols, submarine permafrost, wave action, climate (T+M+) *Ulf*

Suggestions for new leader for the flagship: Angela Augusti