Workshop Maintenance of long-term ITEX experiments
Loon Lake Lodge, 9 April 2024

Zoom link: https://ubc.zoom.us/j/62213423901?pwd=T05Nb0pSWjdZelpieVk2RkZTekhmQT09

What it is about:

- The network of ITEX experiments of different ages (or data collected at different time points during long-term ITEX experiments) is crucial to identify **non-linearities** in ecosystem responses to climate warming, and to understand how changing interactions between ecosystem components drive such non-linearities in ecosystem trajectories.

- Short-term ITEX experiments (or data from the early years of experiments) are relatively common and relatively easy to establish, 5-15 yrs are already rarer, but (data from) **long-term (>15-20 yrs) ITEX experiments are much rarer and take a long time to establish**.

- The earliest ITEX/warming experiments were established in the 1990 and are by now 25-30 years old (i.e. we currently have no means of knowing longer-term effects than that, but we may get it if these experiments continue to exist and are maintained).

-> Long-term (old) ITEX warming experiments need to be continued

What are the problems:

The generation of scientists that started the oldest ITEX/warming experiments is currently **retiring** (or has already done so or may so soon). Some people have found successors, but when no-one is willing/able to take over their experiments, these will 'automatically' terminate.

Securing/re-securing funding to keep ITEX experiments running for decades is challenging for individual researchers. Hence, older experiments continuously risk termination even if not forced by retirement (but also many new experiments will therefore never make it to 'maturity').

-> Can we as ITEX community get an overview of **how many experiments** fall into this category?

-> (How) Can we as ITEX community **help in finding successors** for long-term ITEX experiments on the verge of termination?

-> (How) Can we as ITEX community **'adopt'** long-term ITEX experiments on the verge of termination, i.e. **arrange their maintenance** for the future and **coordinate their use** and data availability/storage?

-> (How) Can we as ITEX community provide **guidelines/advise** in how to proceed when experiments cannot be saved (e.g. suggestions for how to secure data accessibility, reaching out for help/collaboration with last-years' intensive sampling)?

Potential challenges with 'adopting' long-term ITEX experiments:

- Continued commitment for practical maintenance (not data collection!)
- Permits need to be transferred to someone
- Need for coordination of use of the plots by interested (other) scientists
- Need for coordination of data accessibility

Ideas for a sustainable long-term maintenance plan of old ITEX experiments:

Collaboration with/practical support from Interact Non-Profit Association (INPA; https://www.interactassociation.org):

"The purpose of INPA is to support the use and operational procedures of infrastructures in Arctic, sub-Arctic, boreal and alpine regions, to support research and scientific development in the field of climate change and environment, and to increase general awareness about these topics within the general public and among politicians and decision makers.
To achieve the purpose, the main objectives of INPA are to improve international cooperation, to coordinate resources and research initiatives, to provide access to members' infrastructures, to improve infrastructures' operation and to financially support research and monitoring focusing on the Arctic, sub-Arctic, boreal and alpine areas and its global implications."

Are there North-American equivalents?
Northern research station network?

Should there be criteria that need to be fulfilled in order to be considered for adoption?

Are you interested and committed to help this further in a small group of ITEXers?

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Notes from the meeting:
2018 ITEX workshop first workshop about this topic because of Alexfiord
Greg: Plan for Alexfj. was to look at what happens when you remove the long-term OTCs
-> if you terminate, make it a study

1) Datasets: at every site there will be lots of (unpublished) datasets that need to be taken care of -> leave data in good shape

2) Georeference everything and leave peg (metal or with metal tag) at the corner of each plot? So that plots can be revisited. Or dGPS data.

Always present your plans to the network (ITEX meetings, email list) so that people can jump in and help/ take advantage of final measurements.

Closing down sites creates opportunity to do lots of destructive sampling that otherwise wouldn't have been possible.

Difficulty of taking over a site if you are based in another country

Connecting to existing research stations can also reduce CO2 emissions (travel)

Possibility to get young people interested by having a group-PI structure?

Engage young students in ITEX via exchange projects or volunteers? (on ITEX web site?) (check Scandinavian Permafrost Internship program)

Strategies: diversify the studies, invite collaborators.

Start a research station close to your site if there isn't one yet. ;-)

Perspectives paper on Importance of long-term 'monitoring' in manipulation sites (and arguing that towards the research stations/Interact, that it should be part of their assignment too?)

Andrew took over a site in Labrador and has experience from what to expect from taking over the responsibility, data and boxes…

Esther Frei: ELTER and ERIC (?) sites in the EU…

Steps:
0: Reach out to whole ITEX community on ITEX list for more input and engagement

1: Inventory to find out where there are potential problems, and how many sites are close to existing research stations or not

2: Perspectives paper on Importance of long-term ‘monitoring’ in manipulation (experimental warming) sites?

- Overview of age distribution of ongoing and terminated ITEX experiments
- Inventory of the reasons that experiments have been terminated so far
- Overlap of ITEX sites with tundra environmental space?
- Importance of sites in remote areas with low representation in environmental space (e.g. Metcalf et al.)
- Evidence for non-linearities from various ITEX syntheses?
- Suggestions for the way forward (practical and regarding ecological questions about nonlinearities)
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