

Fire/permafrost/BGC interactions

Break-out report

Approaches to synergizing

- Synthesize existing knowledge/data availability for various measurements :
 - Create a matrix of field measurements/projects (ASO)
 - Permafrost-related matrix of existing field measurements and observations (Merritt Turetsky and Jennifer Watts to lead)
 - Brendon Rogers' depth of burn dataset (in progress – available ???)

Approaches to synergizing

- Synthesize existing knowledge/data availability for various measurements from other sources across the region:
 - Long-term and continuous permafrost measurements from V. Romanovksy et al. (ASO)
 - Link with NGEA Arctic activities where possible – create a matrix of what they are doing and where
 - Bring in PALEON data with tree cookies and lake sediment cores (Kevin Shafer will facilitate, Bob Cook, Adrian Rocha?)

Approaches to leveraging

- Develop a structure for requesting additional measurements in the areas of specific interest (ABOVE Support Office):
 - The live space-time online map showing field data collection sites by various groups (clearly advanced time is needed for planning – not just real time depiction - good EPO possibility)

Approaches to leveraging (Cont.)

- Develop a common protocol for requesting additional data collection (particularly important for scaling to satellite observations):
 - Specific locations (prioritized as appropriate)
 - Specific measurements + protocols for collection, prioritized (“if you have only 15 min...” vs “I would really love...”)
 - Provide instrumentation to the field-team if required
 - Develop a map of MODIS/Landsat/etc. pixel boundaries for field sites (ASO)

Approaches to leveraging (Cont.)

- Common protocols applicable to multiple studies:
 - Photo acquisition for lab-based surface characterization (Merritt Turetsky)
 - Simple depth of thaw / active layer measurement protocols – particularly recognizing challenging in measuring this parameter in areas of discontinuous permafrost (Kevin Shafer)
 - Soil moisture measurements for radar (Nancy French), care to be take for those to calibrate them to organic soils
 - SOL measurement (Merritt Turetsky and Michelle Mack)
 - Stand-age measurements (collected at many sites, no lead identified Merritt/Michelle?)

Wish list of datasets

- Normalized (projection, grid, etc.) datasets to share with the project
- General geology and soils
- DEM (Paul Morran's?), interim?
- Good meteorological data (e.g. Daymet for AK will be available next year)
- Best-available permafrost maps: localized and consistent across the domain

X-mas list of datasets I

- Additional instrumentation on seismic observation sites (ASO should take the lead on coordinating – appropriate locations with appropriate measurements and instrumentation – weather and CO₂/methane measurements are top priorities, soil moisture, permafrost, etc. are of high interest)

X-mas list of datasets II

- More tower and aircraft measurements of CO₂ and methane to validate products particularly outside North Slope and Fairbanks (Toolik and Yukon Delta are good candidate sites). Need year-round continuous weather- and light-independent observations.

X-mas list of datasets III

- Vegetation map:
 - Existing maps are of insufficient quality
 - New approaches to continuous fields representations for various subcomponents of vegetative structure to allow for dynamic (non-categorical map). Nancy French is working on fuels map (not an ABOVE product) and Claudia is willing to lead a sub-working group focused on veg map concept and possibly harmonization of a suite of existing approaches.