

Future Directions in Arctic Research

Science Support Needs

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Arctic springs are warmer & snow is melting earlier

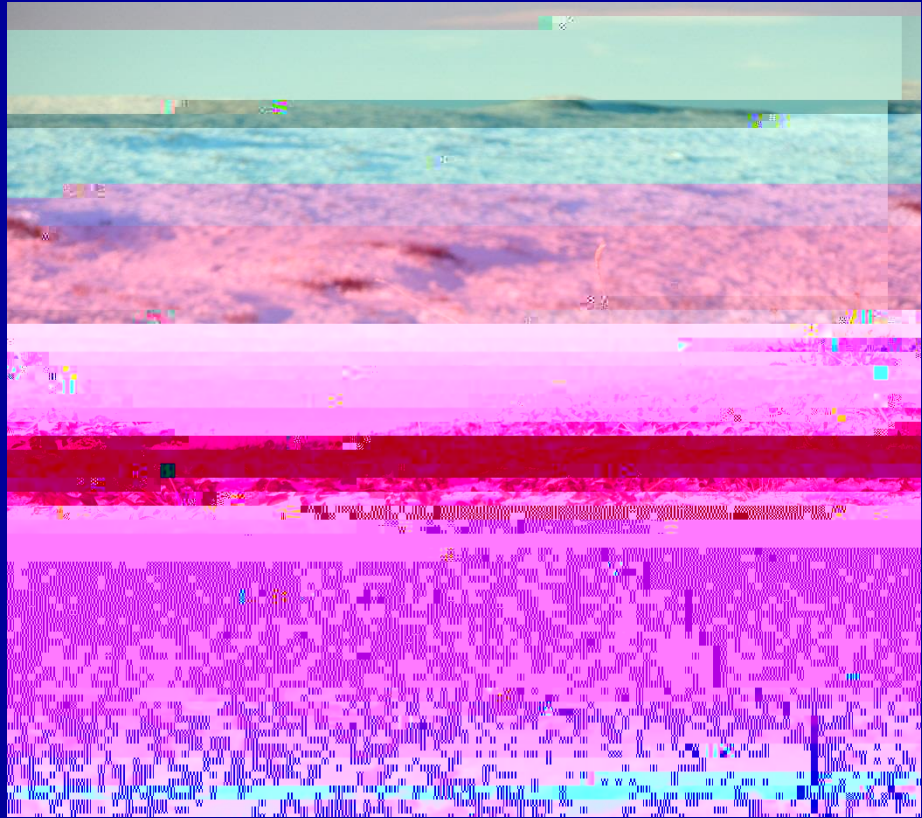
Arctic Report Card 2011:

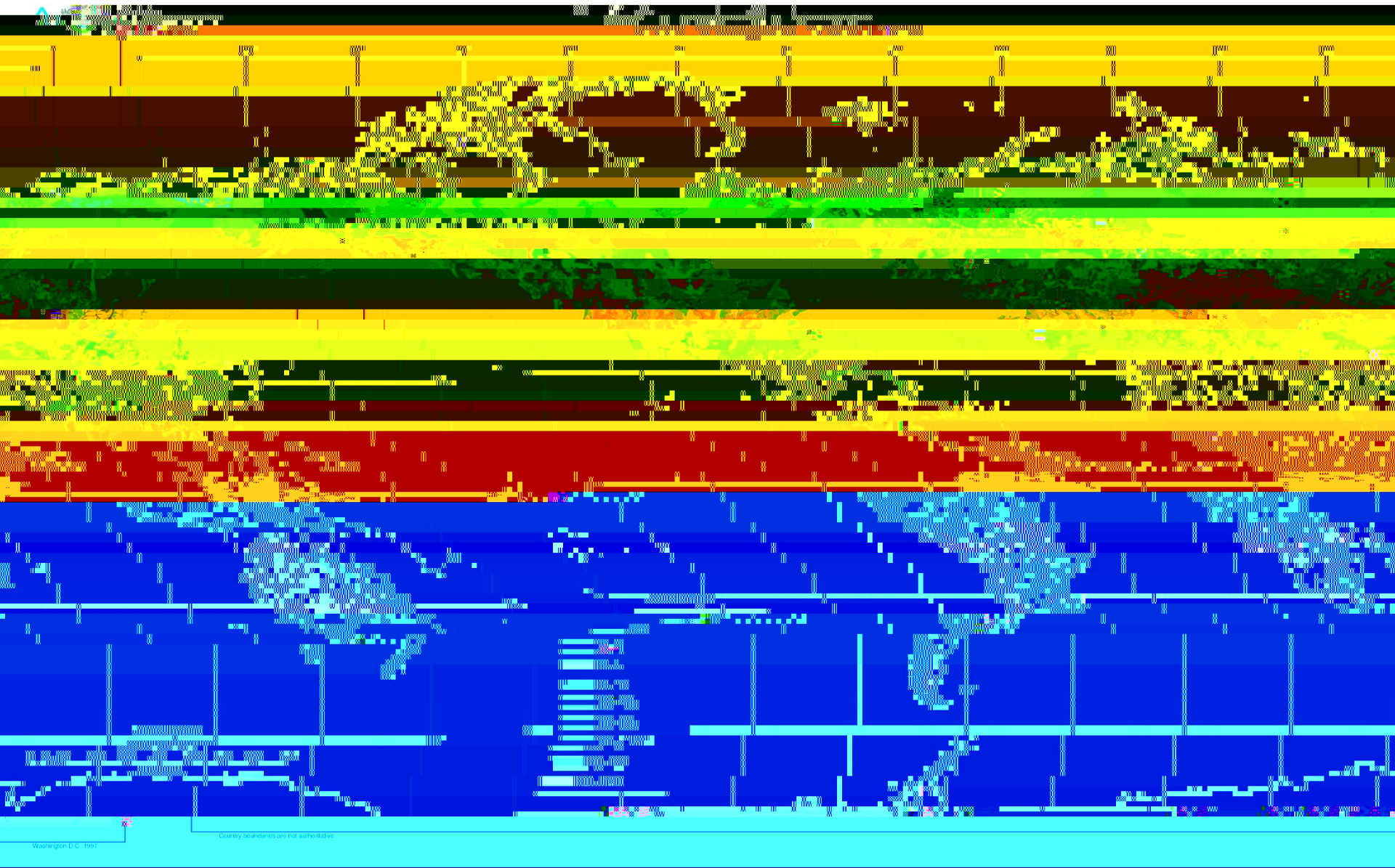
Strong trend from 1966 - 2011
of less spring snow cover due to
earlier melt

The start date of snow cover
over the Arctic has been stable

Similar trends in declining
spring snowmelt for Eurasian &
N. American arctic

<http://www.arctic.noaa.gov/reportcard/snow.html>





CO₂?



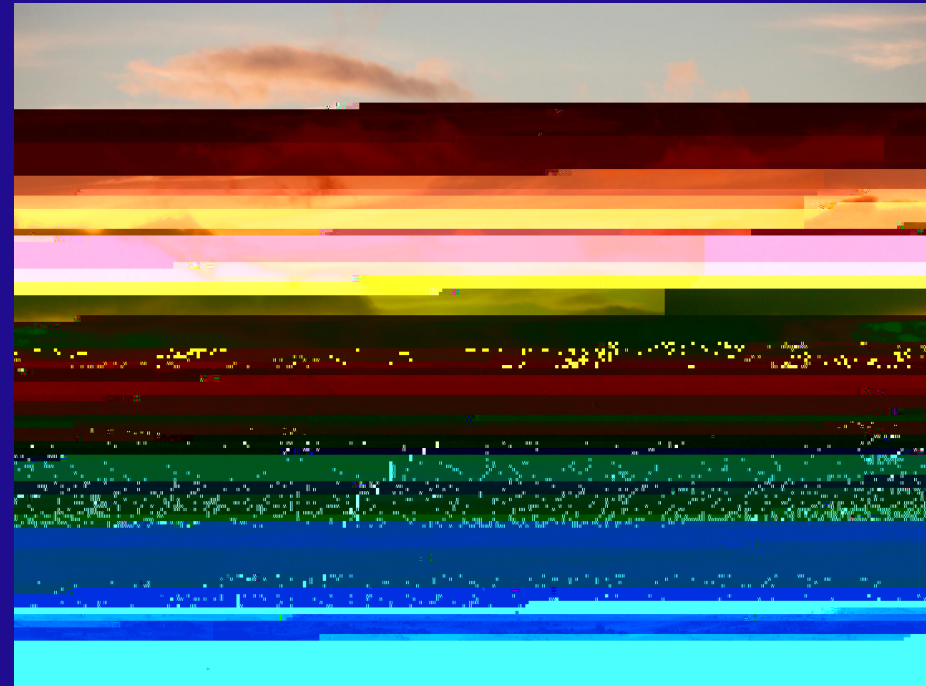
Climate change will continue to be the focus of terrestrial ecosystem ecology

With emphases on:

Changes in plant productivity and community composition

Soil C losses due increased SOM decomposition

The impacts of disturbances such as thermokarsts



Future Research Needs

More large multi-investigator projects

Associated Needs:

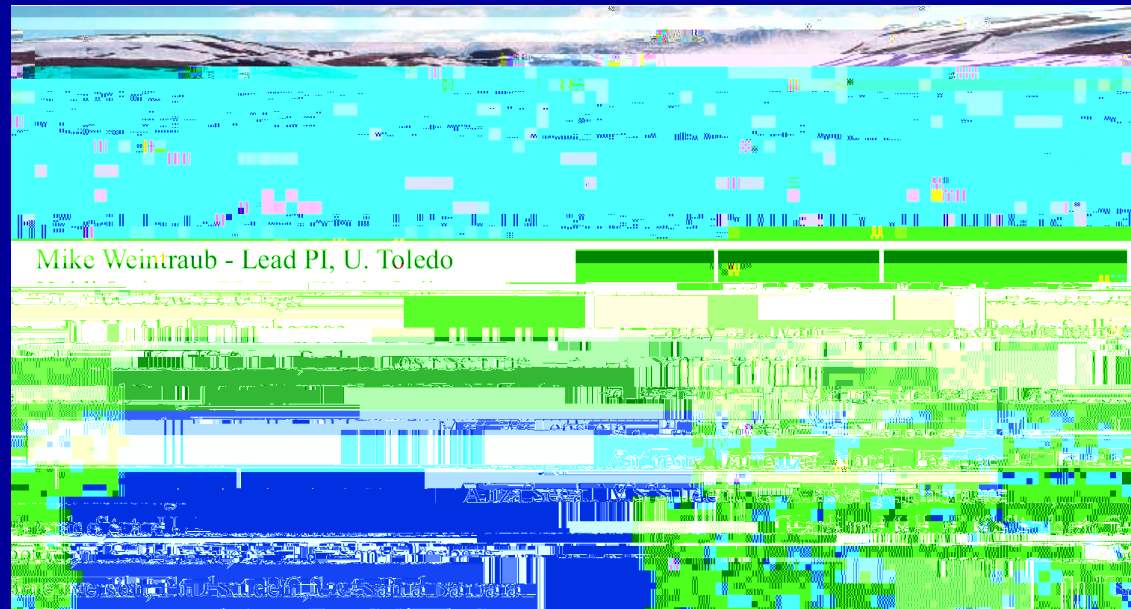
More complex logistics

Transportation

More on site support

More lab space per group – more people and more measurements

Office space for students and teachers



More large manipulative field experiments

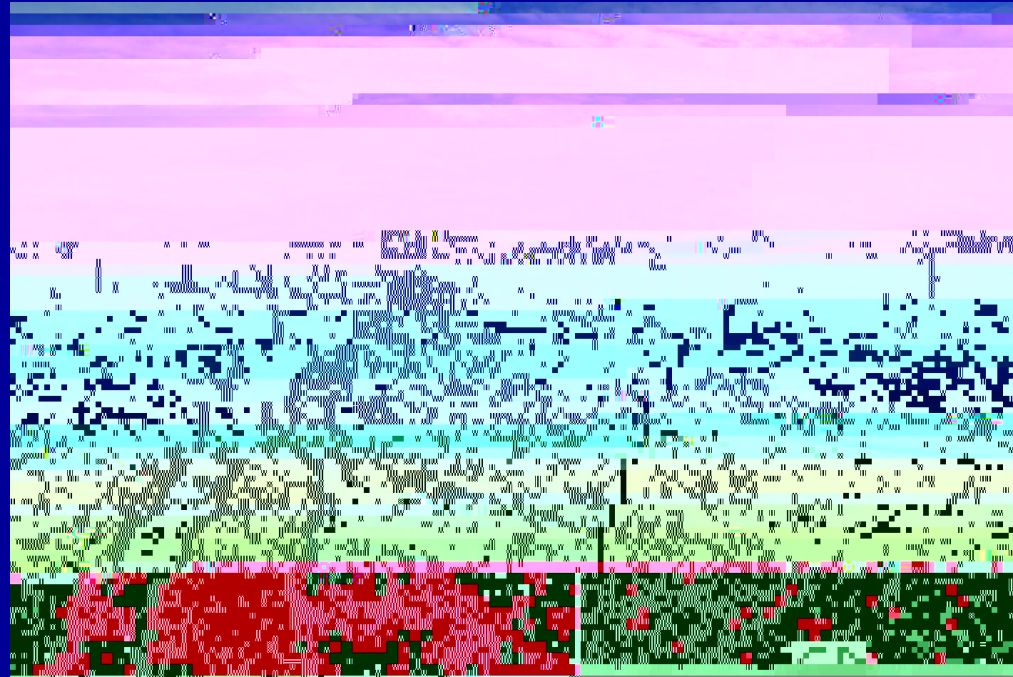
More complex logistics

Deploying heavy equipment to field sites

More lab space at TFS

Protecting the tundra

Paying attention to the legacy of field manipulations after projects end



Greater Reliance On Automated Sensors & Chambers

Data management &
archiving

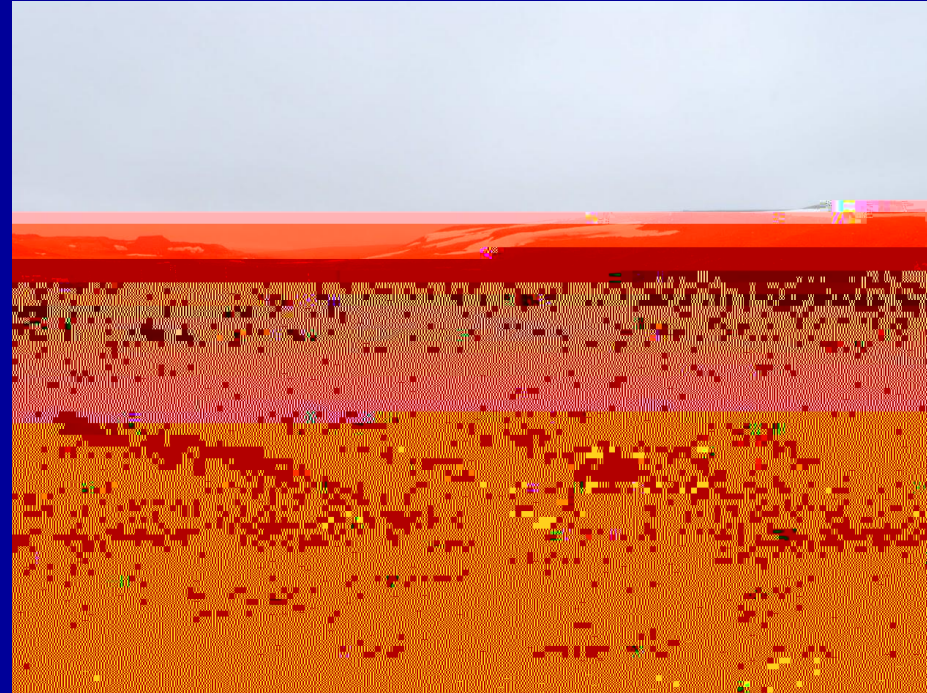
Deploying heavy equipment
to field sites

Power (sometimes)

Remote data downloading

Data archiving – Advanced
- Cooperative Arctic Data
and Information Service?

Winter warm storage
(sometimes)



Broader Geographic Distribution Of Research Sites

More complex logistics

Greater transportation needs

Deploying equipment to
more field sites

Power (sometimes)

Protecting more tundra



GIS

Maintaining long term
records of research across

