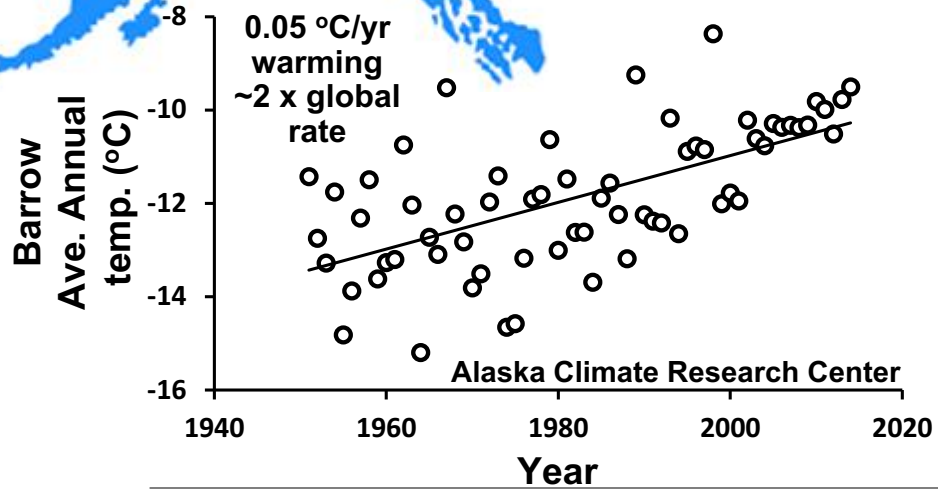




ARC LTER: The Role of Biogeochemical and Community Openness in Governing Arctic Ecosystem Response to Climate Change and Disturbance



Ed Rastetter

LTER SCIENCE COUNCIL MEETING 2018

MADISON, WI

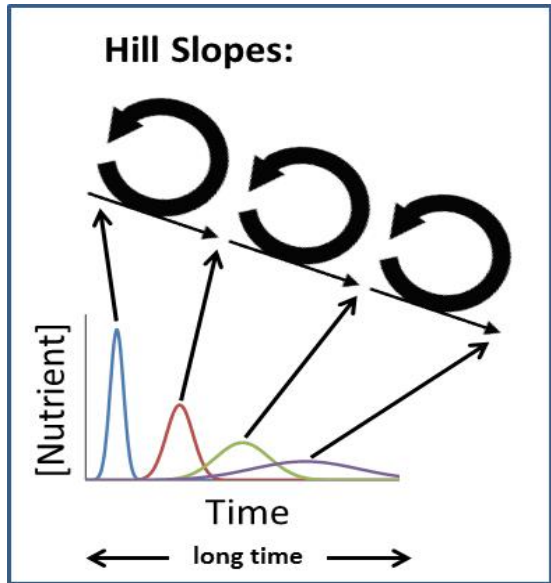
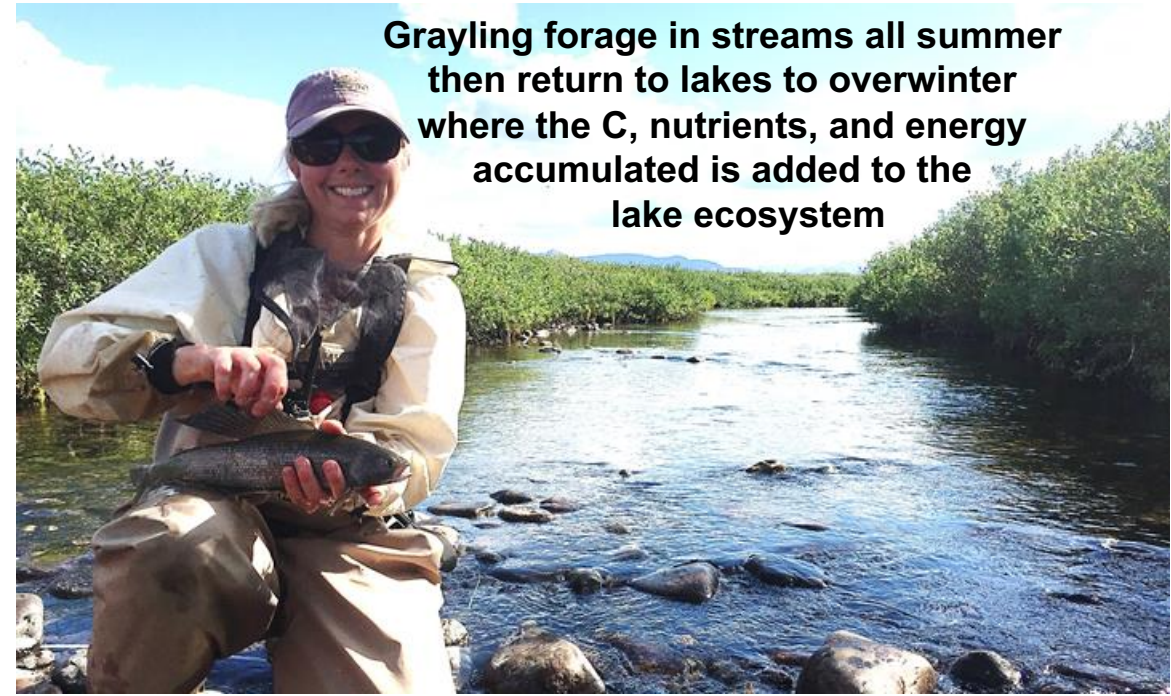
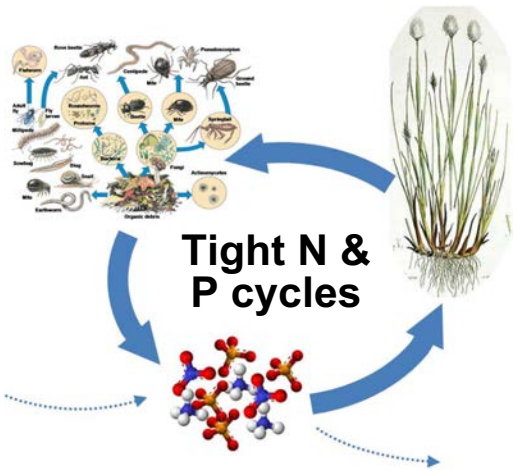


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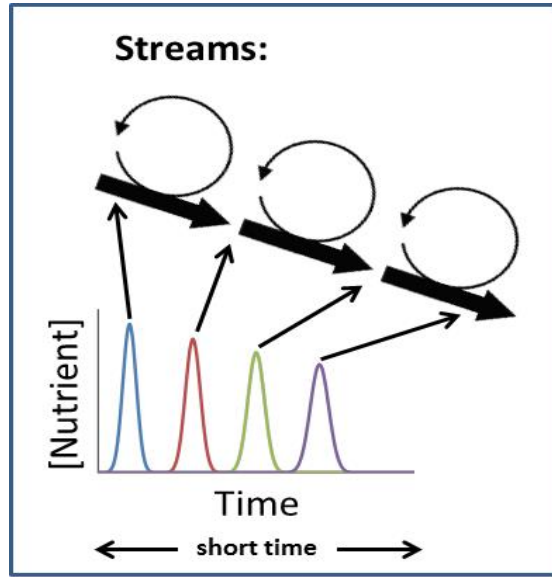
LTER NETWORK

LONG TERM ECOLOGICAL RESEARCH

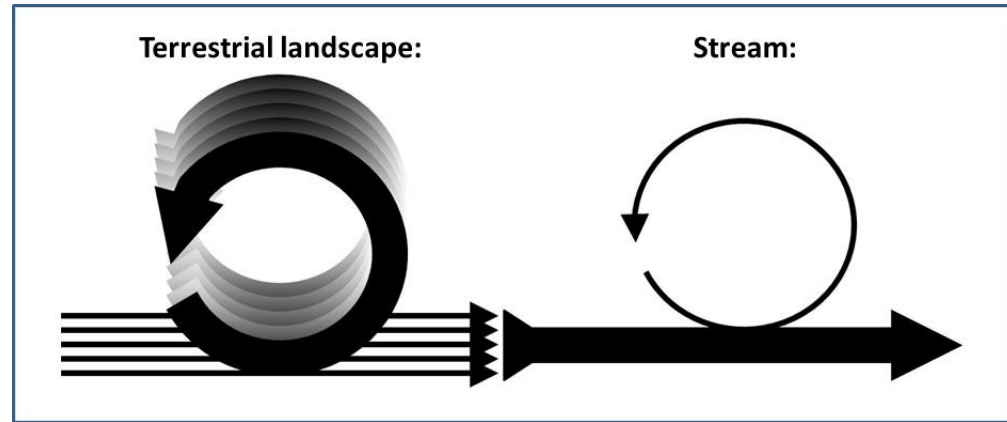




Nearly closed ecosystems on hills are poorly connected; delay and attenuate nutrient pulses moving down slope



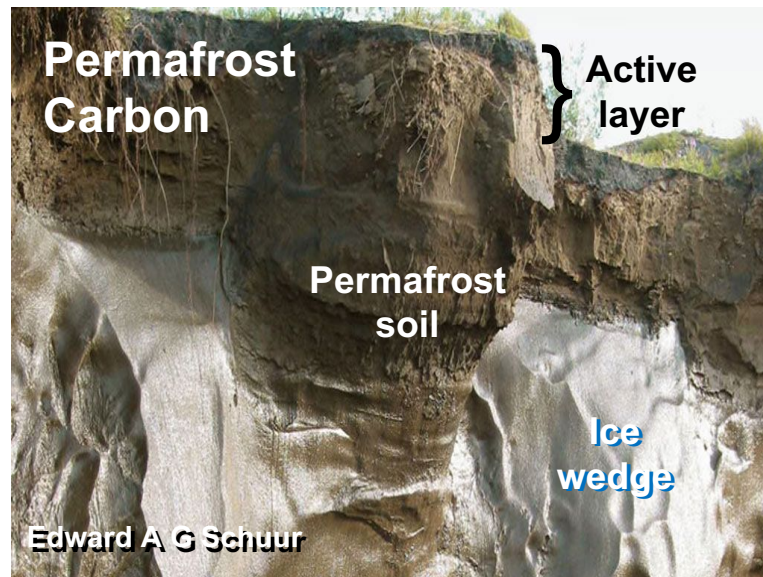
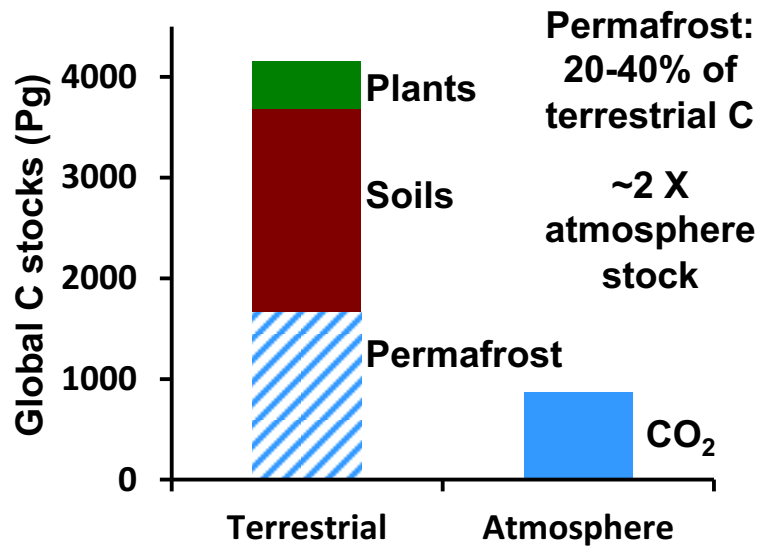
More open stream ecosystems are well connected; propagate nutrient pulses moving downstream



Recycled nutrients accumulated over millennia

Throughput of nutrients accumulated over catchment area

How open and connected are the components of arctic landscapes?

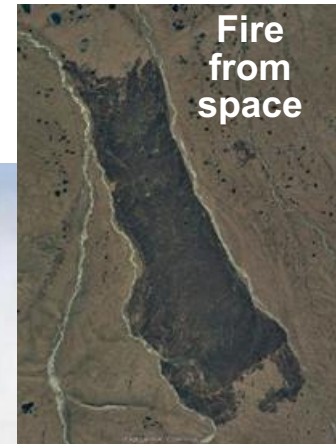


Tussock tundra organic matter (g m⁻²):

	Plants	Active layer Soil
C	720	12500
N	15	1000
P	1.4	82



Amount of previously frozen C, N, & P activated annually by thermokarst activity is unknown



1000 km² fire scar
2.1 Tg C release to atmosphere

