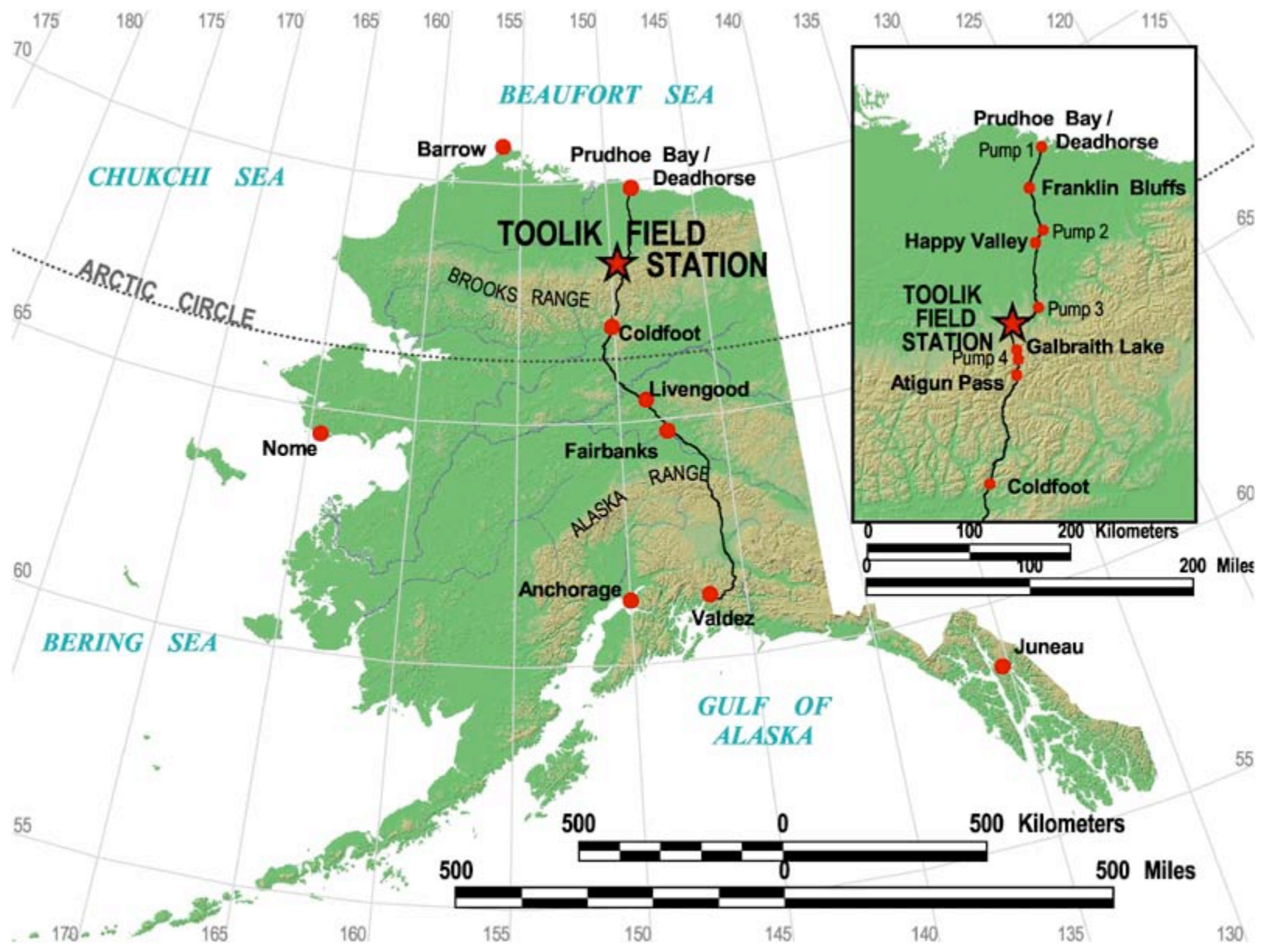


Arctic Activities

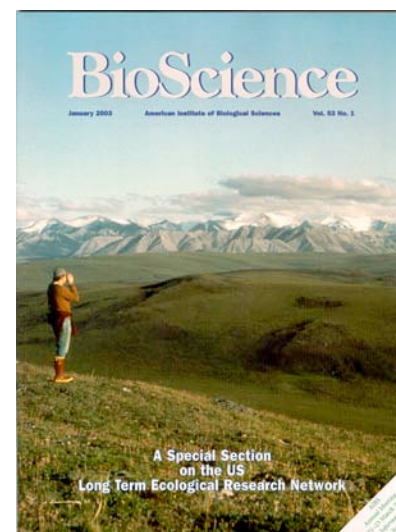
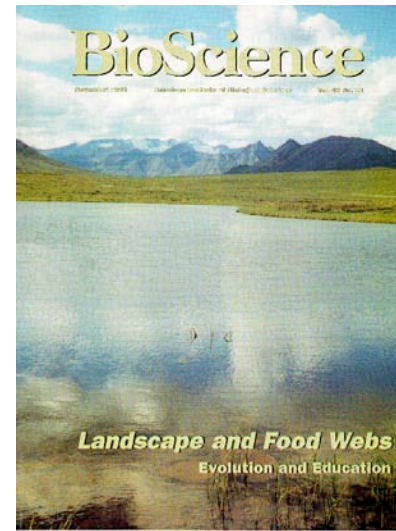
Marine Biological Laboratory

The Ecosystems Center

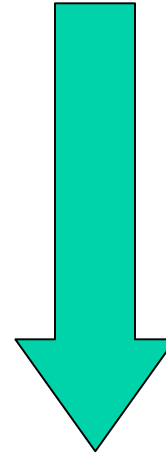
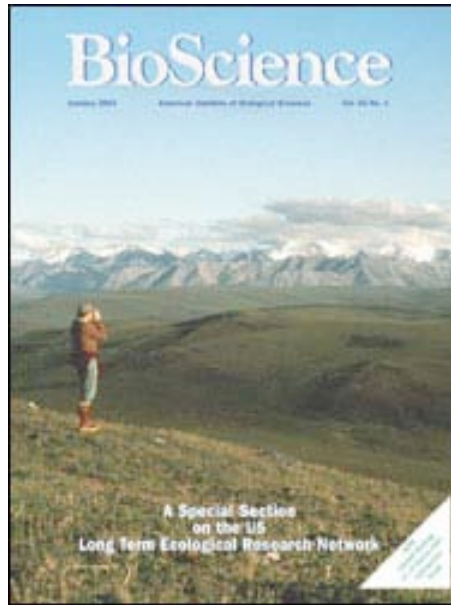
Presented by John Hobbie



Long Term Ecological Research at Toolik Lake, Alaska



Research at Toolik Lake, AK

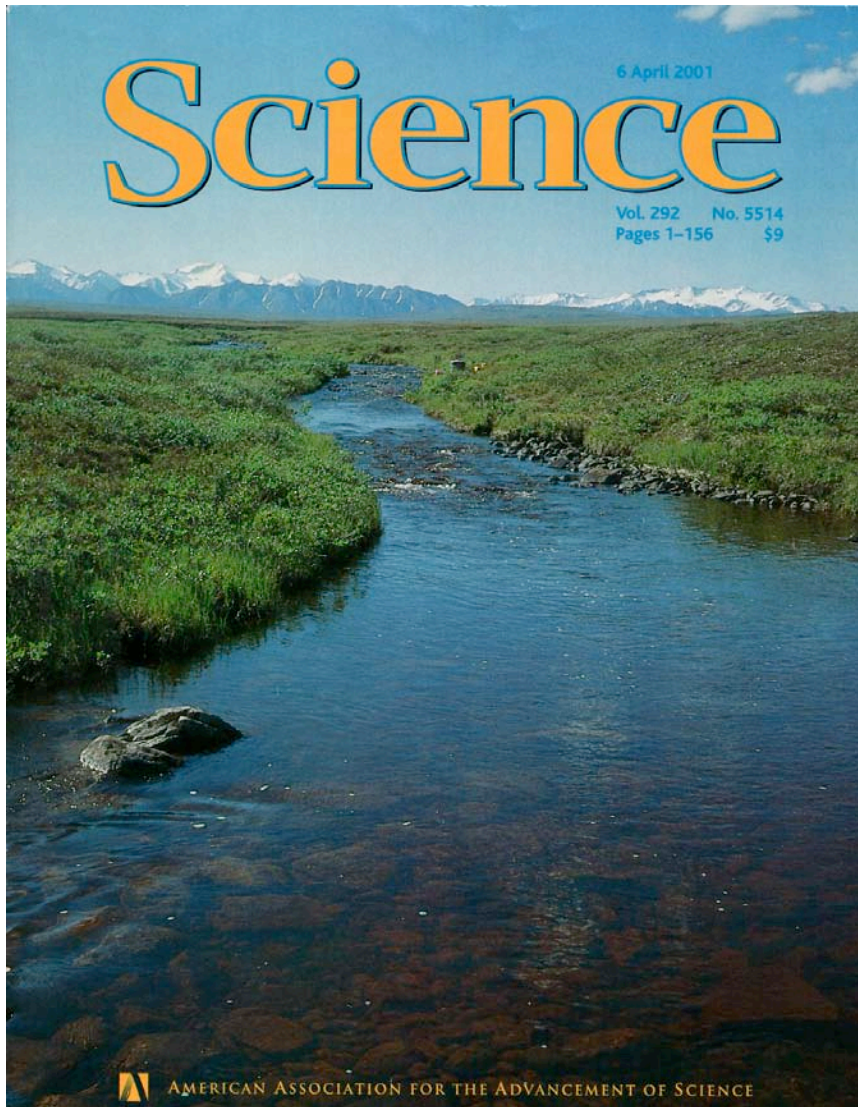


The U.S. Long Term Ecological Research Program (LTER)

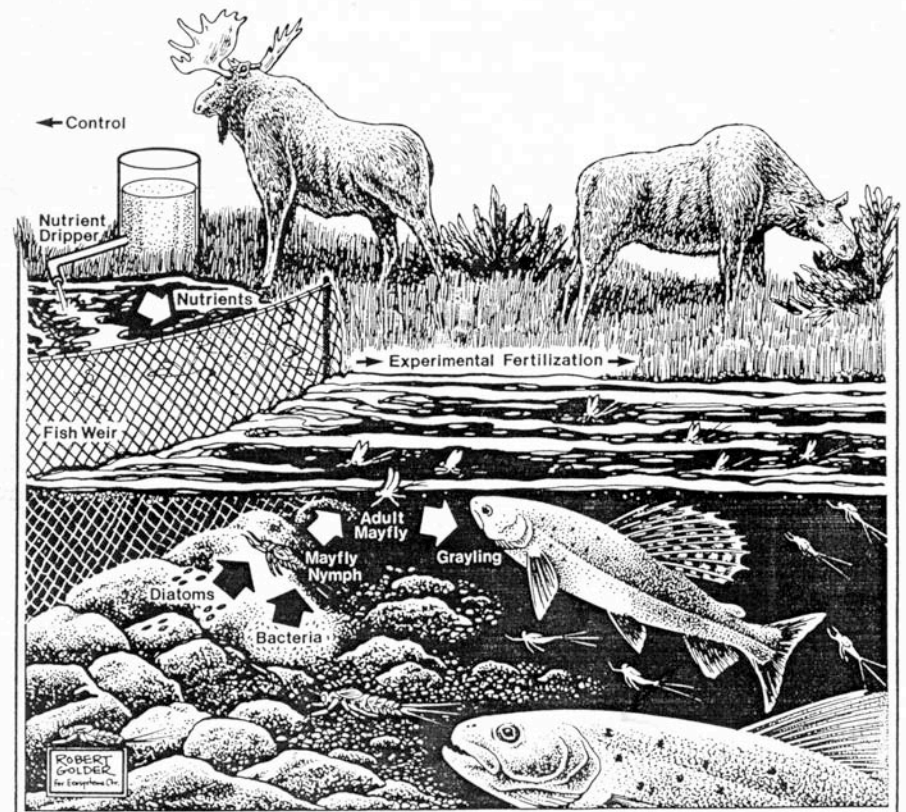
BioScience, January 2003, has seven articles on LTER emphasizing LTER impact on major ecological issues

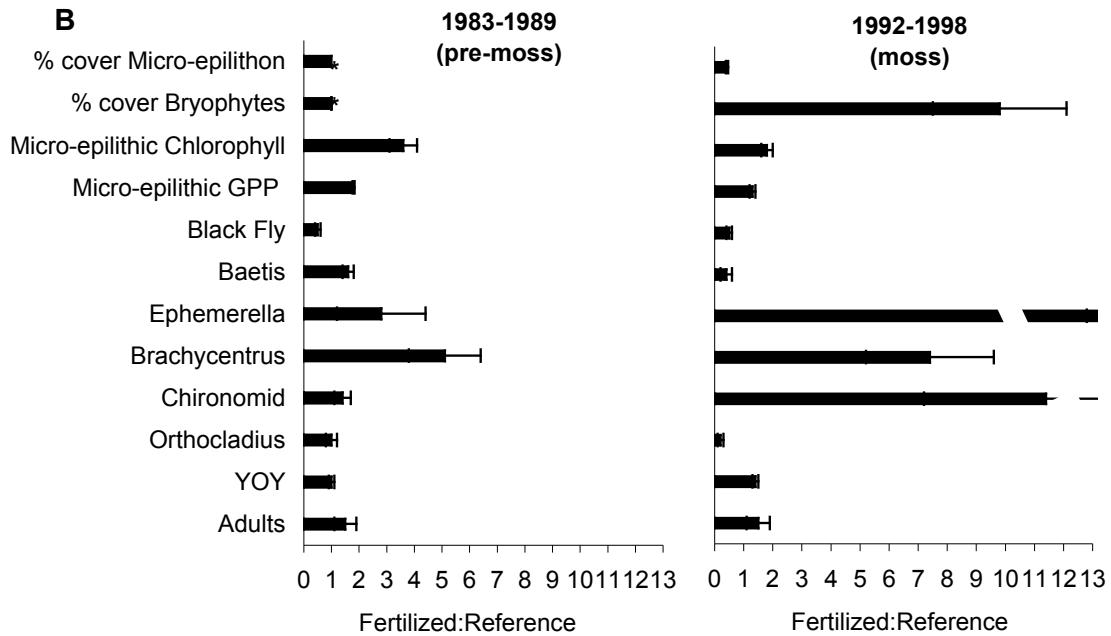
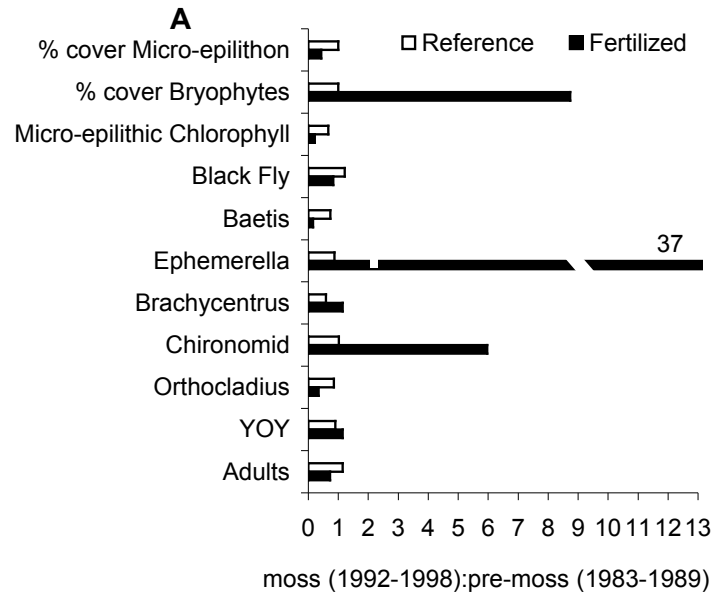
OPP Funded Research on Ecology of Streams and Lakes





Stream research – observations and experiments including a 20 addition (summer, continuously) of PO_4 to attain 10 ppb P.





**1999--10th
year of treatment**

GREENHOUSE ONLY

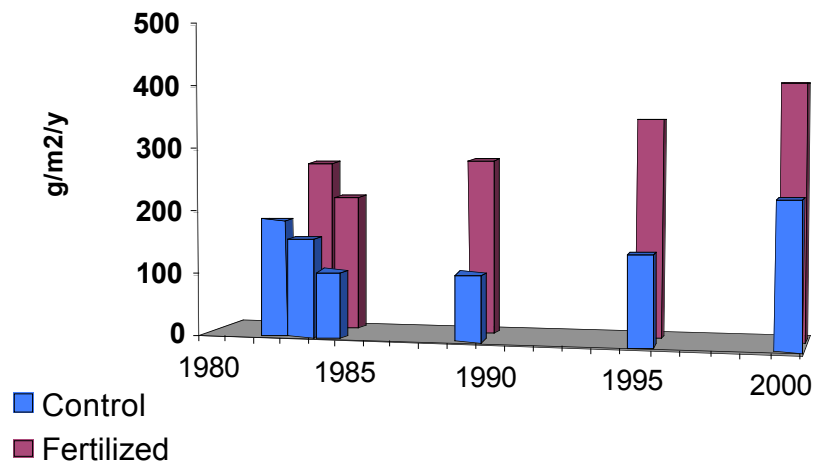


**GREENHOUSE
PLUS NP
FERTILIZER**

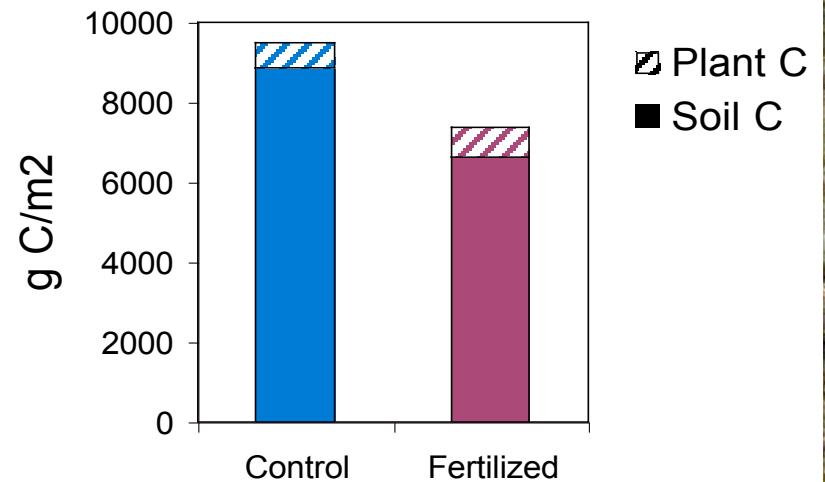


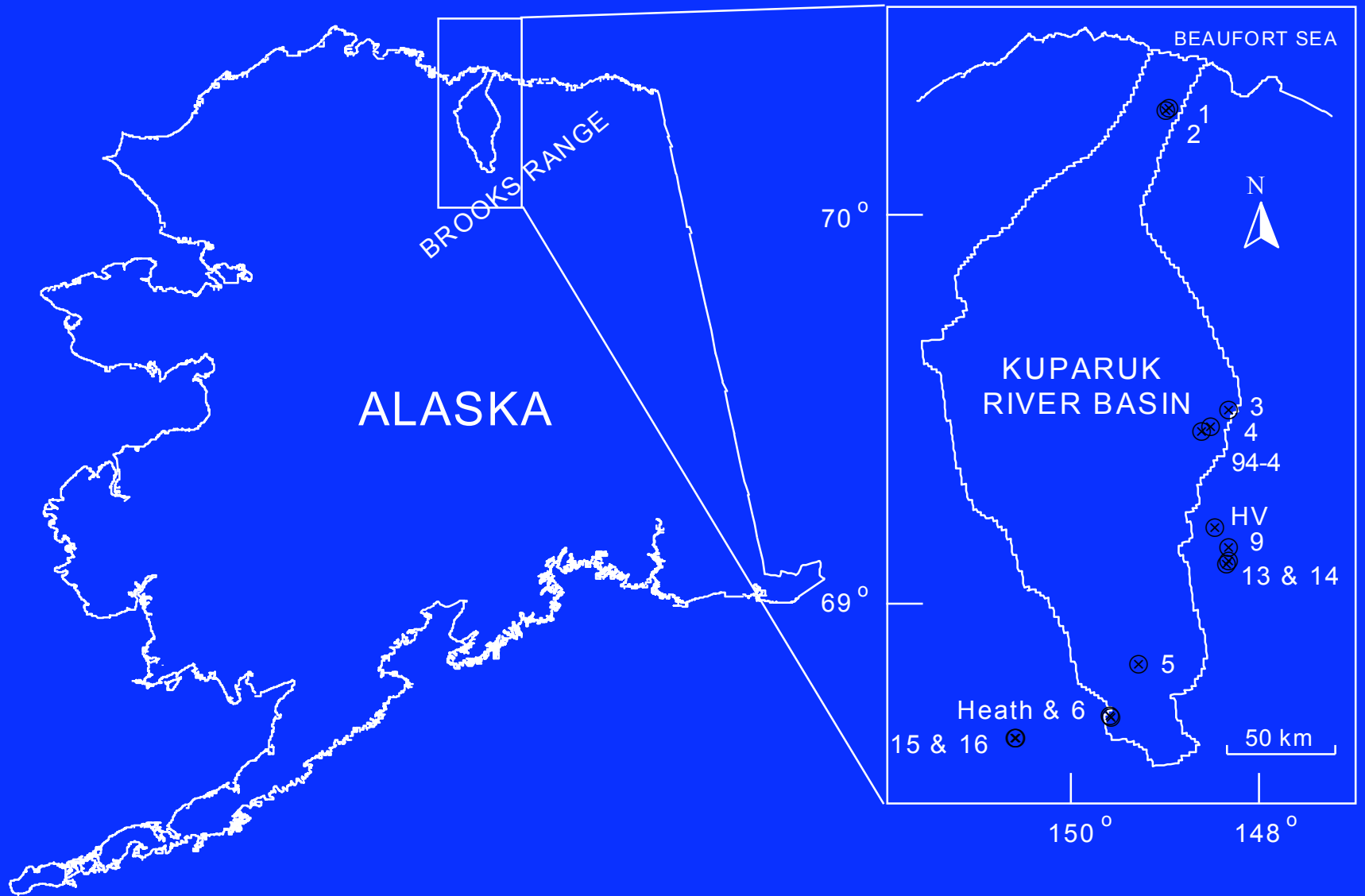
Long term experiments suggest tundra ecosystems may lose, not gain, C in a warmer, nutrient-rich future world

Productivity of moist tundra
1980-2000

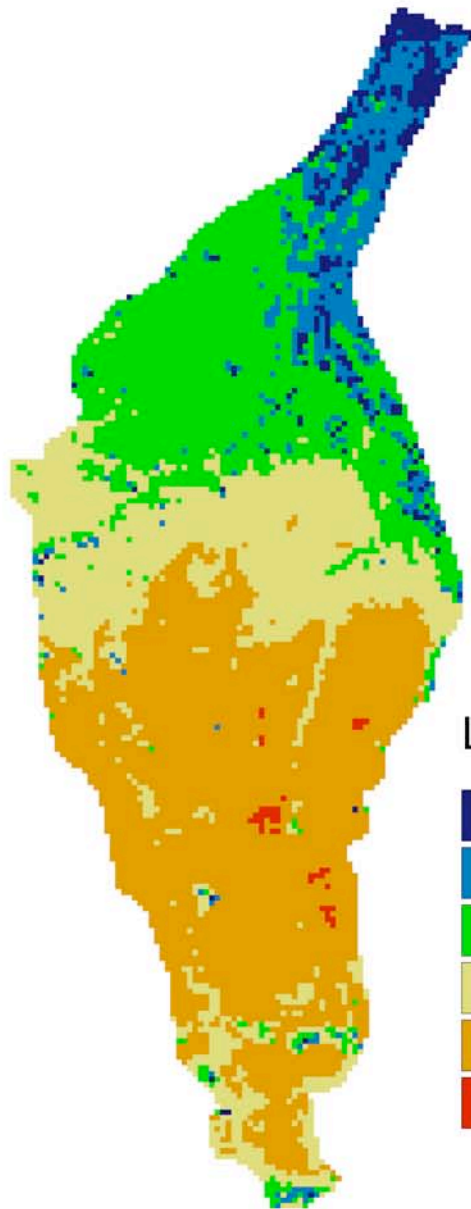


Total Carbon Mass in 2000

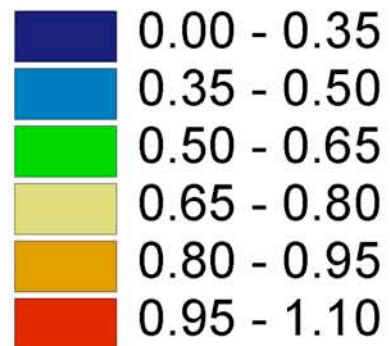




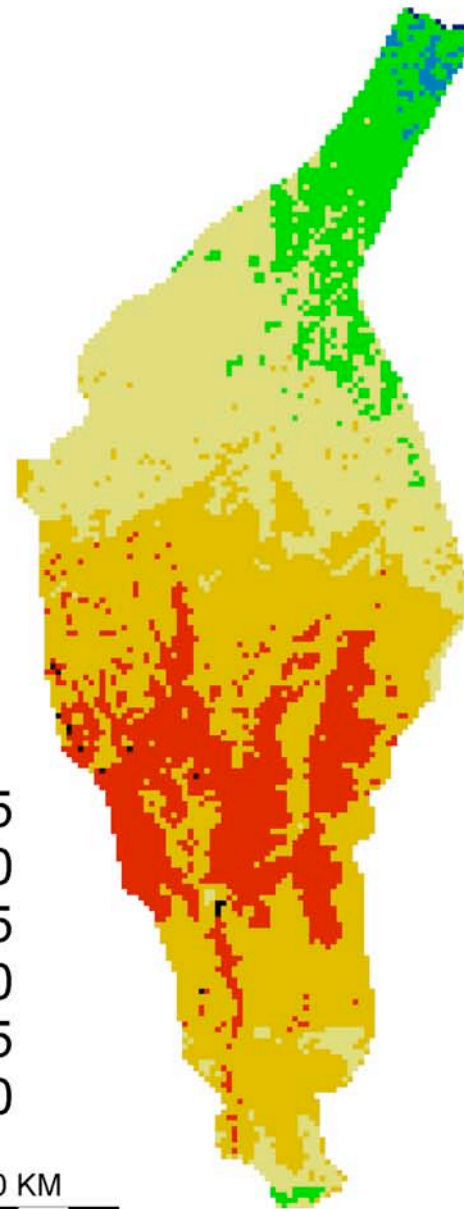
Peak Leaf Area Index
(July 22 - August 4, 1995)



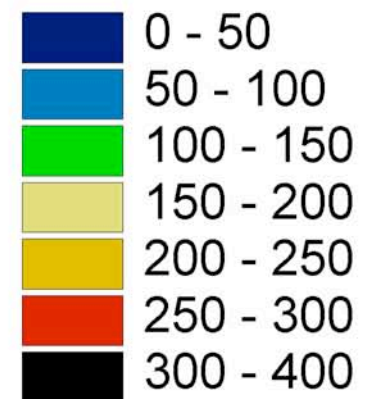
Leaf Area Index



1995 Annual
Gross Primary Productivity



Gross
Primary Productivity
(Mg C km⁻² year⁻¹)

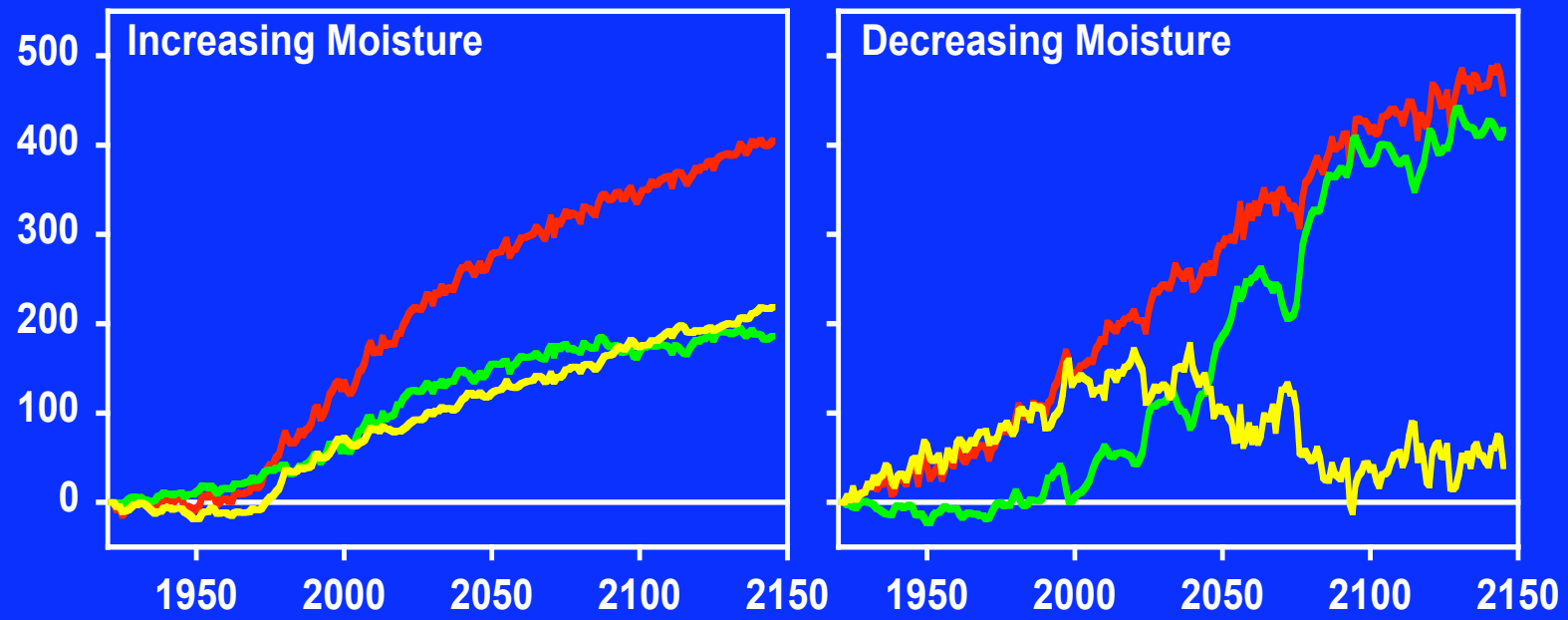


30 KM



Change in carbon stocks of tussock tundra in the Kuparuk River Basin in response to simulated climate change

) -2

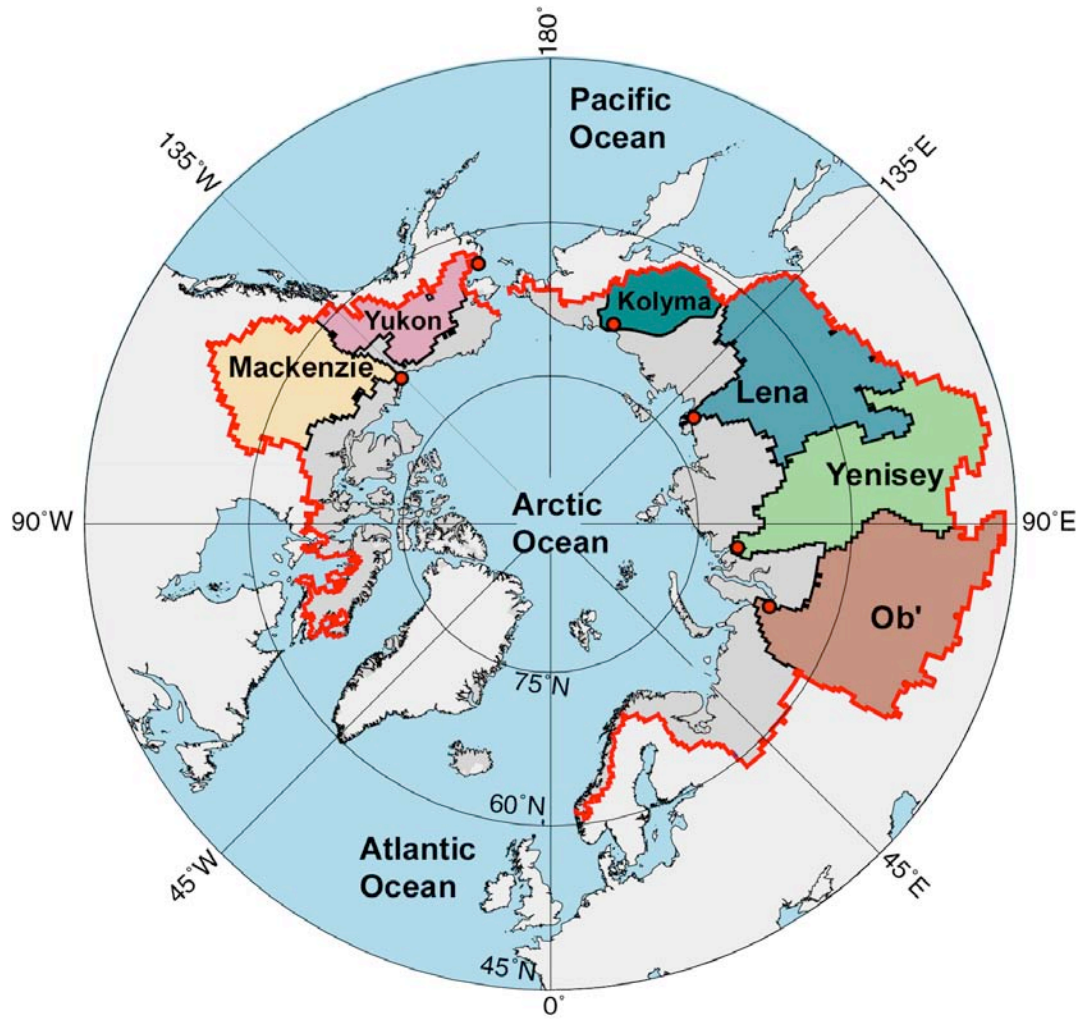


Change in Car

— Ecosystem — Vegetation — Soil

The PARTNERS Project

Our overall objective is to use river water chemistry to study the origins and fates of continental runoff in the Arctic



<http://ecosystems.mbl.edu/partners>

Combined Discharge of Yenisey, Lena, Ob', Mackenzie, Yukon, and Kolyma Rivers

