

Future Research at the Toolik Field Station

Perspectives from Breck Bowden

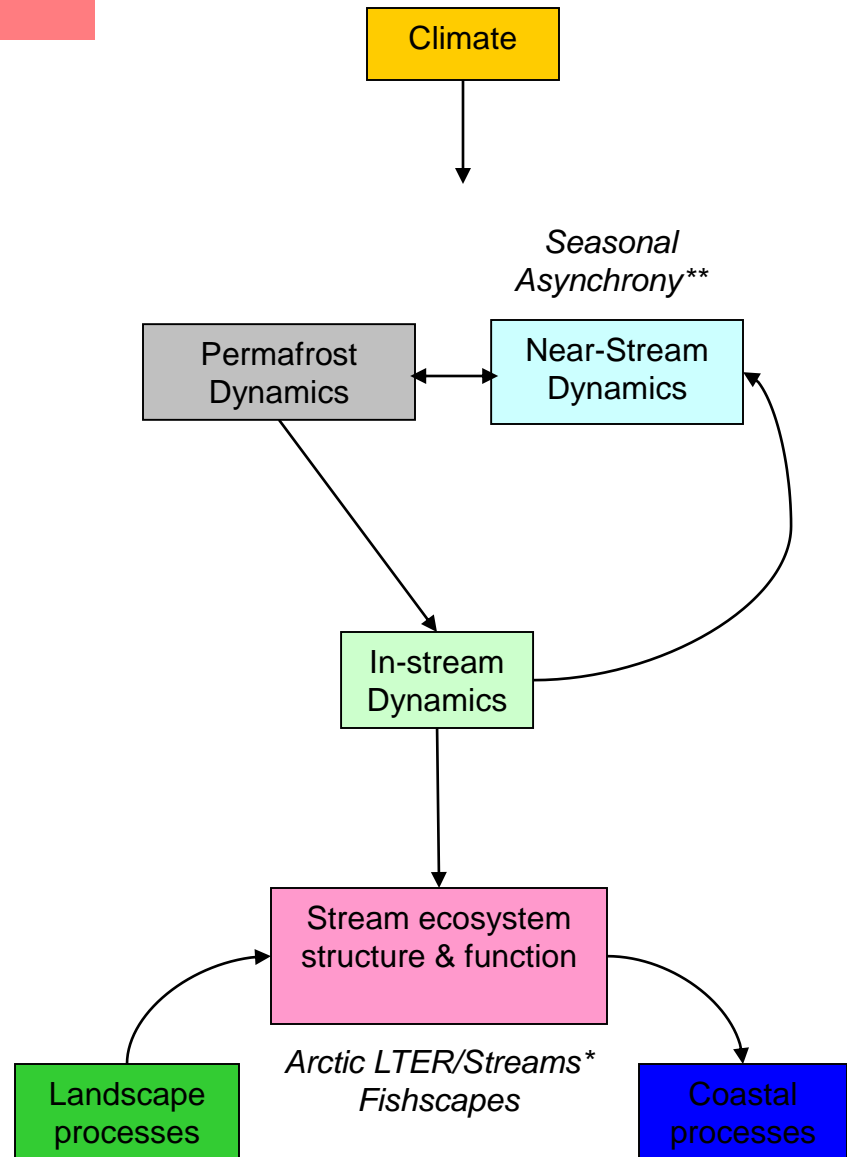
Science Support Visioning Workshop

Portland, Oregon

2-4 August 2012

How will change in the arctic system affect integrated land-water dynamics?

A streams perspective



Strategic Rationale

DOE/NGEE: Develop a process-rich ecosystem model, extending from bedrock to the top of the vegetative canopy, in which the evolution of Arctic ecosystems in a changing climate can be modeled at the scale of a high resolution Earth System Model (ESM) grid cell

NASA/ABOVE: Focus on key process associated with the land surface, and on key interfaces between the land and the coastal ocean and atmospheric boundary layer as they interact with climate-
m4D rat

Required Science Support

Logistics and residential support are covered well

Resources for larger meetings and classes (outreach and broader impacts) are adequate but could grow

Extended environmental monitoring

Technical instrument and sensor support

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Space to stage complex field installations

Space to process large numbers of samples

TFS as a field research operations hub

Strong partnership between TFS scientists, staff, and management to develop TFS science resources with NSF