



Spring Hydrology Determines Summer Net Carbon Uptake in Northern Ecosystems

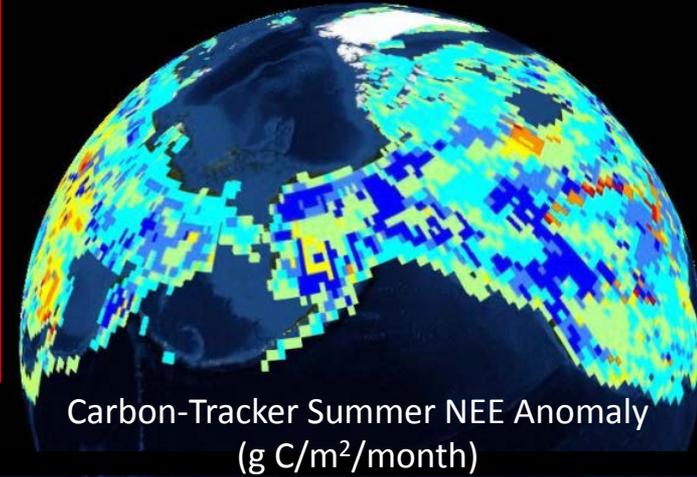
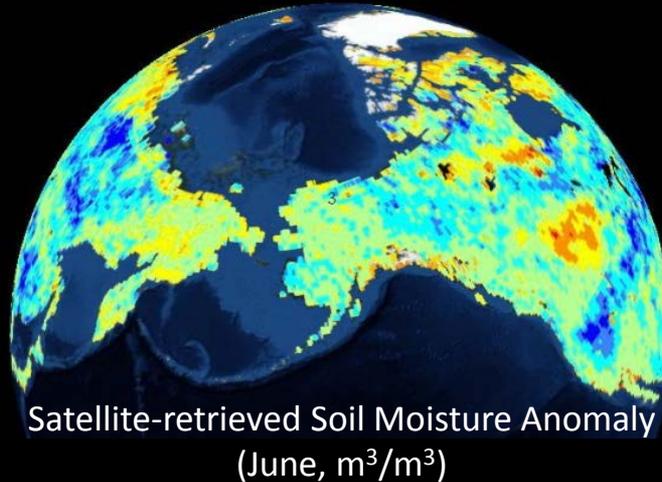
Global Modeling and Assimilation Office



Major Findings:

- Wetter springs promote summer net carbon uptake independent of temperature effects;
- Warming still promotes widespread greening (as observed by NDVI), but with less net carbon uptake in warmer, drier years;
- Stronger coupling of northern carbon & water cycles with continued climate warming.

Surface soil moisture anomaly for June, 2009 from AMSR-E satellite observations; positive values denote wetter-than-normal conditions from the mean (2002-2011).



Summer (JJA) Net Ecosystem CO_2 Exchange (NEE) anomaly for 2009 from CarbonTracker; NEE +/- signs denote ecosystem carbon gain/loss.