

North Atlantic carbon cycle variability on multidecadal timescales

Galen A. McKinley and Amanda Fay

Atmospheric and Oceanic Sciences and Center for Climatic Research
University of Wisconsin – Madison
gamckinley@wisc.edu

We review the state of understanding regarding variability in the North Atlantic carbon cycle on interannual to multidecadal timescales. We focus on analysis of trends estimated from *in situ* pCO₂ observations over the three major North Atlantic biomes (subtropical, subpolar, intergyre), and compliment this with analysis of models. Physical variability has been the dominant driver for change, for example, variability in vertical mixing of remineralized carbon in the subpolar biome. In addition, CO₂ solubility is being suppressed by warming in both the subpolar and subtropical biomes. We explain these and other mechanisms of impact on the carbon cycle.