Geophysical Research Abstracts, Vol. 7, 07155, 2005 SRef-ID: 1607-7962/gra/EGU05-A-07155 © European Geosciences Union 2005



The ups and downs of biogenic silica records in lacustrine and marine sediments

D.J. Conley

Department of Marine Ecology, National Environmental Research Institute, Roskilde, Denmark (dco@dmu.dk/+45 46301114)

Biogenic silica (BSi) is a chemically determined proxy of the amorphous silica content of sediments. In aquatic ecosystems BSi principally comes from diatoms, although other siliceous organisms such as chrysophytes, radiolarians and sponge spicules can contribute to the BSi pool, as can terrestrially-derived phytoliths. BSi and the Si cycle in general have been greatly modified by man's activities, especially nutrient enrichment, allowing for BSi to be widely used as an indicator of eutrophication. The other major use of BSi is as a productivity proxy, especially in paleo-climate studies. This talk will examine the methodological developments in the measurement of BSi in aquatic sediments. I will address the where, why and when BSi doesn't work well as a proxy due to physical, chemical and biological processes that enhance dissolution. Numerous examples of freshwater and marine studies that have achieved great successes with using BSi as a proxy of diatom production will be provided.