



Timescales, Sequence Stratigraphy & Sea-Level Change

Michael Simmons

Neftex Petroleum Consultants Ltd, Abingdon, United Kingdom (mike.simmons@neftex.com)

The history of correlation and the subdivision of geological time have long been associated with understanding changes in sea-level. Sequence stratigraphy can be summarised as an attempt to subdivide sedimentary successions (either at the local basinal scale or at the global scale) into packages relating to changes in relative sea-level. Such sequences, being rooted in time-stratigraphy, can, for example, be the basis for correlation and mapping of facies. There are a growing set of observations that demonstrate the synchronicity of some sea-level changes globally, leading to the establishment of global eustatic models. These, in turn, require an explanation for the driving mechanisms of eustatic change. Growing direct and proxy evidence suggests a link between climatic change and eustasy and hence the presence of glacio-eustasy, even in “greenhouse” times. There are strong links between sequence stratigraphy and the geological timescale. Sequence stratigraphic surfaces, especially correlative conformities, may form “natural boundaries” to stages and are associated with biostratigraphic events. Such an approach would mark a return to the criteria upon which stages were originally defined.