A Compilation of Phanerozoic Sea-Level Change, Coastal Onlaps and Recommended Sequence Designations*

Compiled by John W. Snedden[1] and Chengjie Liu[2]

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[1]ExxonMobil Production Deutschland GmbH (john.w.snedden@exxonmobil.com)
[2]ExxonMobil Exploration (chengjie.liu@exxonmobil.com)

Introduction

Following is a compilation of published information on Phanerozic sea-level change and coastal onlaps. Coastal onlap curves for the Paleozoic are derived from Haq and Schutter (2008) and that for the Mesozoic-Cenozoic are from Hardenbol et al. (1998), with minor revisions to accommodate absolute age revision and redefinition of stages. We also made age recalibrations for the Mesozoic-Cenozoic interval to the 2004/2008 timescale. The sea level trends are derived from Haq et al. (1987).

The time scale used here is from 2008; it is the current consensus time scale, but we expect future revisions with improved age data. The magnitudes of sea-level change in this chart follow the estimation of Haq and Schutter (2008) and Hardenbol et al. (1998). However, there is little consensus on the range of sea-level changes, though most believe that the sea-level position during most of the Phanerozoic was within ±100 meters of the present-day level.

The sequence designations are derived from a combination of abbreviated stage names and a sequential numerical appendix similar to the sequence boundary names of Hardenbol et al. (1998)*. A sequence is designated by the sequence boundary name at its base. These are useful for chronostratigraphic designations of both depositional sequences and sequence stratigraphic surfaces.

We thank Jim Ogg and Gabi Ogg at the Purdue University and the International Commission on Stratigraphy for their assistance in age recalibration of the Mesozoic-Cenozoic depositional sequences of Hardenbol et al. (1998) into the 2004/2008 time scale.

* Sequence names for 19 Cambrian sequences are temporary because six stages containing these sequences have not yet been ratified by the International Commission on Stratigraphy.

References

Haq, B.U. and S.R. Shutter, 2008, A chronology of Paleozoic sea-level changes: Science, v. 322, October 2008, p. 64-68.

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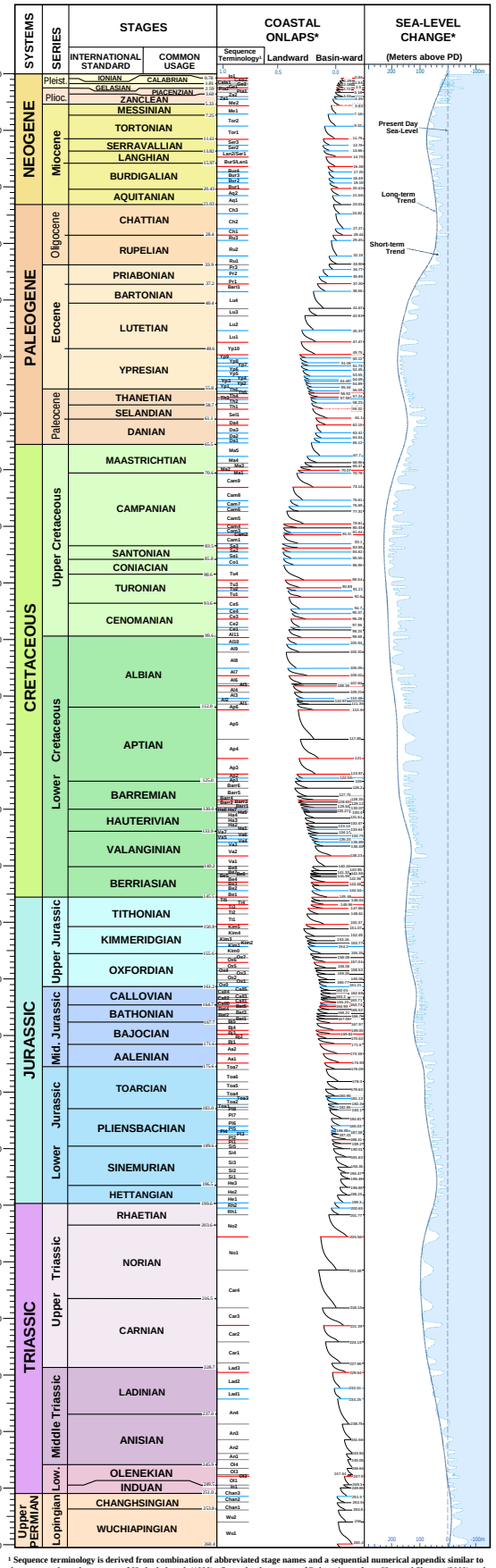
Hardenbol, J., J. Thierry, M.B. Farley, T. Jacquin, P.C. de Graciansky, and P. Vail, 1998, Mesozoic and Cenozoic sequence chronostratigraphic framework of European basins, *in* P.C. Graciansky, et al. (eds) Mesozoic and Cenozoic Sequence Stratigraphy of European Basins: SEPM Special Publication 60, p. 3-13, charts 1-8.

MESOZOIC-CENOZOIC SEA-LEVEL CHANGE AND COASTAL ONLAPS



¹ Sequence terminology is derived from combination of abbreviated stage names and a sequential numerical appendix similar to the sequence boundary names of Hadenbol et al. (1998). Coastal onlap curves of Paleozoic are from Haq and Shutter (2008) and that for the Mesozoic-Cenozoic are from Hardenbol et al. (1998) with minor revision.

Major relative sea-level change* (>75 m)
Medium relative sea-level change (25-75 m)
Minor relative sea-level change (<25 m)

** The magnitudes of sea-level change in this chart follow the estimation of Haq and Shutter (2008), and Hardenbol and others (1998). However, there is little consensus on the range of sea-level changes though it is a general belief that the sea-level during most of the Phanerozoic has been less than ±100 meters of the present day level.*

REFERENCES

Haq, B. U. and Shutter, S. R., 2008. A chronology of Paleozoic sea-level changes. *Science*, Vol. 322, October 2008, p. 64-68.

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Contact information for this file:
John W. Snedden, Ph.D. ExxonMobil Production Deutschland GmbH (john.w.snedden@exxonmobil.com
Chengjie Liu, Ph.D., ExxonMobil Exploration (chengjie.liu@exxonmobil.com)

PALEOZOIC SEA-LEVEL CHANGE AND COASTAL ONLAPS