

The Anthropocene; a formal stratigraphical unit, an informal concept, or an interval of Holocene time?

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In recent years 'Anthropocene' has been proposed as an informal stratigraphic term to denote the current interval of anthropogenic global environmental change. A case is also been made for its consideration as a formal series/epoch, based on the recognition of a suitable marker horizon or event, such as the start of the Industrial Revolution in northern Europe. In order for the Anthropocene to merit designation as a formal stratigraphic unit, however, such an event would need to leave a global signature consistently distinct from that of the Holocene or of previous interglacials of the Pleistocene, and be marked by novel biotic (i.e. biostratigraphical), sedimentary and geochemical change. Although there is clear evidence in recent geological records of anthropogenic effects on the natural environment (atmospheric trace gas increase, sea-level rise, accelerated erosion, etc), it is far from certain that the stratigraphic signature of these trends is sufficiently distinct, consistent, and adequately dated at the global scale, for the proposal for a Holocene/Anthropocene boundary to be substantiated on stratigraphic grounds. As a consequence, there is a view within the Earth-science community that, if the term is to be employed, it should remain an informal label. Here the Anthropocene will be considered in the context of the formal definition of geological time-scale units, particularly of the requirement for relating such units to unequivocal Global Stratigraphic Section and Point ('golden spike') localities, and that adoption of the term 'Anthropocene' will ultimately depend on whether such an event layer or horizon can be identified globally. In the absence of such a marker, it will be concluded that there is no justification for decoupling the Anthropocene from the Holocene, and that if the term Anthropocene is deemed to have utility, it should be as an informal historical designation rather than a formally-defined stratigraphic unit (of whatever status) within the Geological Time Scale.

References:

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