

Welcome speech

## **Past Carbon Isotopic Events and Future Ecologies**

Geological Society of London: 2 November 2010

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This is the first day of a well-timed event. It happily brings together the Geological Society of London and the British Ecological Society. More than ever before people have become aware of the critical importance of carbon isotopic events in climate change, and the related problems of biodiversity in the history of the Earth. We have just seen the positive results of the Nagoya conference on the Convention of Biological Diversity, and next month there will be the Cancun conference on Climate Change.

Looking first at the long past, the history of the Earth is a story of the development and survival of life through all circumstances and disasters. Change has come about either from beyond the Earth system (for example hits from space and the varying relationship between the Earth and the Sun); or from within the Earth system (for example the movement of tectonic plates, earthquakes, and volcanic eruptions); or from the activities of the small but destructive animal species which is ourselves (for example the gathering consequences of the industrial revolution during the last 250 years, human proliferation, degradation of resources, destruction of biodiversity and accelerating climate change). Geologists are now discussing the idea of establishing a new epoch named the Anthropocene to succeed the Holocene as the Holocene succeeded the Pleistocene.

Looking now at the future, the degree of human responsibility is critical. It is worth recalling the Amsterdam Declaration, published by some 1500 scientists from the four main global research programmes at Amsterdam in July 2001:

“Human activities have the potential to switch the Earth’s System to alternative modes of operation that may prove irreversible and less hospitable to humans and other life ... The Earth’s System has moved well outside the range of The natural variability exhibited over the last half million years at least. The nature of changes now occurring simultaneously in the Earth’s System, their magnitudes and rates of change, are unprecedented.”

This situation was fully recognized at the biodiversity conference last month when representatives of around 190 countries agreed on the Nagoya Protocol to cut the current extinction rate of species by half or more by 2020. They agreed to set up a committee, comparable to the Intergovernmental Panel on Climate Change, entitled the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services to cover the complexities of biodiversity in the years to come. They also agreed to look into the implications of small scale geo-engineering.

In short we have the beginnings of a fundamental change of mind representing change in our values system. A system which gives primacy to market forces, exploitation of resources, economic growth, and ever-rising consumption must now be recognized as unworkable. Somehow we have to bring in the factor of true, in particular environmental costs in its many aspects.

How should we now proceed? We will be hearing about ways of responding to if not managing present and future carbon isotopic events, and all they mean for climate change. On the tightly linked issues of biodiversity, a group of leading biologists within Diversitas has proposed three practical aims for society: first to set red targets to protect human safety (this to include conserving mangroves to shield coastlines against storms, the maintenance of coral reefs to prevent loss of fisheries and to prevent deforestation with its many effects including landslides); secondly to set green targets to protect organisms to which human society attaches particular value for cultural reasons; and thirdly to set blue targets to protect key ecosystem services such as those rendered by carbon sinks in forest and soils, and permafrost generally.

The vital need is to see things as a whole. As was recently said in Nicholas Carr's book *The Shallows*, "We don't see the forest when we search the Web. We don't even see the trees. We see twigs and leaves." We now have to look wider and further, and this conference, looking back as well as forward, is designed to help us to do so.