



Land Use and Climate Impacts on Fluvial Systems (LUCIFS): A PAGES – Focus 4 (PHAROS) research activity

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LUCIFS is a global research program which is concerned with understanding past interactions between climate, human activity and fluvial systems. Its focus is on evaluating the geomorphic impact of humans on landscapes, with a strong emphasis on geomorphological and sedimentological perspectives on mid- to long-term man-landscape interactions. Of particular relevance are aspects of sediment redistribution systems such as non-linear behaviour, the role of system configuration, scale effects, and emergent properties

Over the last decade the LUCIFS program has been investigating both contemporary and long-term river response to global change with the principal aims of i)quantifying land use and climate change impacts of river-borne fluxes of water, sediment, C, N and P; ii) identification of key controls on these fluxes at the catchment scale; and iii) identification of the feedback on both human society and biogeochemical cycles of long-term changes in the fluxes of these materials

The major scientific tasks of the LUCIFS-program are:

- synthesising results of regional case studies
- identify regional gaps and encouraging new case studies
- addressing research gaps and formulating new research questions
- organising workshops and conferences

In this paper we present the LUCIFS program within the new PAGES structure. LUCIFS is located in the Focus 4 (PHAROS) dealing with how a knowledge of human-climate-ecosystem interactions in the past can help inform understanding and management today. In conjunction with the other working groups HITE (Human Impacts on Terrestrial Ecosystems), LIMPACS (Human Impacts on Lake Ecosystems) and IHOPE (Integrated History of People on Earth) PHAROS aims to compare regional-scale reconstructions of environmental and climatic processes using natural archives, documentary and instrumental data, with evidence of past human activity obtained from historical, paleoecological and archaeological records.