EPSP Connects

Virtual Science Talk with

Prof. Stephen Tooth

Aberystwyth University, Wales, UK

AGU ADVANCING EARTH AND SPACE SCIENCE

08:00 San Francisco
11:00 New York
17:00 Berlin
21:30 New Delhi

Feb 15, 2023

The geomorphology of wetlands in drylands: whither science and management in an Anthropocene?

The Anthropocene is a proposed new geological time interval that accounts for human domination of Earth system functioning. While still contested in formal geological terms, the Anthropocene concept provides an increasingly prevalent framework for debate in wider academic, cultural, and policy circles. What are the implications of a putative Anthropocene for wetland science, especially geomorphology and Quaternary studies, and for application of the science? Does it now make sense to talk of 'natural' wetlands free from human influences? If not, what targets can we realistically set for wetland restoration or rehabilitation projects? Can Quaternary wetland reconstructions (e.g., for time periods before significant human influences) still provide useful insights to guide 21st century wetland management? The presentation will consider these and other questions, focusing especially on wetlands in drylands. Global examples illustrate rising awareness of the need for enhanced science and management of wetlands in drylands, but many challenges remain and can be broadly grouped as:

1) **Scientific:** e.g., lack of comprehensive inventories, limited role of geomorphology in research and application, underappreciation of the distinctiveness of wetlands in drylands, limited understanding of the role of wetlands in drylands in long-term carbon sequestration, and critical data gaps including a paucity of late Quaternary chronologies

2) **Environmental:** e.g., vulnerability of some wetlands in drylands to regional and global climate changes, land use changes, and population growth

3) **Sociopolitical:** e.g., lack of parity with better-publicised humid-region wetlands work, and limited prioritisation of ecosystem services provided by wetlands in drylands

4) **Institutional:** e.g., lack of a critical mass of researchers, and barriers to inter- and trans-disciplinary working). Across some global drylands, some strides towards addressing these challenges have been made but more are necessary if we are to provide the critical scientific underpinning, management expertise, and public and political goodwill necessary to support the 'wise' or 'sustainable' use of wetlands in drylands

Register here

Prof. Tooth is a drylands geomorphologist. He works on - anabranching rivers, floodplains and floodouts, wetlands in drylands, channel-vegetation interactions, bedrock-influenced rivers, controls on gully erosion, long-term fluvial landscape development, palaeoenvironmental change, and the use of drylands on Earth as analogues for Martian surface environments.

More information and registration at:
https://connect.agu.org/epsp/discussion/epsp-connects

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