Aquatic ecosystem development: Does function follow form?

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Aquatic ecosystems constitute a network of interactions transferring matter and energy between organisms. Environmental conditions determine distribution and performance of organisms, thereby network's structure and capabilities to deliver a particular function. Organic matter and nutrients supply and maintain trophic interactions in organism assemblages, thus any changes in biogeochemical cycles (e.g., carbon, nutrients) driven by environmental disturbances may cause alterations in network structure, energy flow patterns and consequently the delivery of ecosystem services. Despite the growing research on 'environmental change', there is still gap in knowledge related to the dynamics of ecosystem services under changing aquatic systems.

This session will primarily focus on potential changes in services delivered by aquatic ecosystem beyond gross biogeochemical cycles. The aim of this session is to shed light on a number of open questions: Are there general patterns of such changes or a set of distinct scenarios? Is there any suitable conceptual framework available for such studies or do we need to develop one? Could such studies gain value from the inclusion of the human factor i.e. social dynamics? Will there be any functional changes in storage and fluxes of carbon due to complexity in ecosystem services under a changing environment?

We invite both case studies and theoretical analysis on how multiple environmental drivers can induce multiple responses at different organizational levels and how such effects translate into changes of a significant ecosystem service.