Title:	Distribution and sources of organic matter from a freshwater aquatic system in Kashmir Himalaya
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Abstract:	The distribution and sources of organic matter (OM) in aquatic systems is crucial for understanding the biogeochemical cycling of carbon in terrestrial environments. In this study, we intend to evaluate quantitative contributions of OM sources and their distribution in Wular lake present in Kashmir Himalaya through n-alkane indexes and source specific biomarkers. The principal sources of OM in the sediments were aquatic plants and secondary contribution from terrestrial plants and microbial community, which varied from littoral to central part of the lake. The river system flowing through the lake covered a significant portion of the lake with a single outlet point in the western part and several inlet points in the eastern part of the lake. This river system was considered to be the major contributor of the terrestrial inputs which served as nutrient supply for other life forms residing in the lake system. As suggested by the high CPI and ACL values, the littoral parts of the lake under the influence of the river were dominated by organic matter supply from terrestrial sources. The regions influenced by river were also regions of high P aq (primary productivity) because of high nutrient supply. Another crucial component of the distribution of sedimentary organic matter is the particle size parameter. Clay sized particles tend to preserve more organic matter due to their sheet-like structure which facilitates adsorption of OM to their surfaces. Hence, the regions of the lake where the nutrient supply was limited also has high productivity owing to smaller particle size. However, certain parts of the lake still tend to preserve subsequent amount of organic matter in the absence of both the above mentioned controlling factors. This is due to small water depth which facilitates growth of emergent/submergent macrophytes.
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