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Socio-hydrology and integrated water resources management in northern Australia

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Australia's tropical rivers account for more than half of the nation's freshwater resources. Nearly all of these rivers flow freely to the sea, with less than 0. 01% of river flows diverted for human use, but there is increasing interest in developing the region's water resources for irrigated agriculture. Interdisciplinary research conducted over the past decade has demonstrated the reliance of biodiversity on free-flowing rivers and has also identified a broad range of benefits that people derive from these river systems including irrigated agriculture, tourism, commercial and recreational fishing and Indigenous subsistence harvesting. This has revealed the highly coupled nature of the socio-hydrological system in northern Australia's catchments and the trade-offs among different water users. This paper provides an overview of past and current research with a focus on how socio-hydrology may assist in undertaking integrated water resource management in this region.