Hydrology of a temperate coastal salt-marsh: An assessment integrating surface water and groundwater monitoring, geophysics and modelling

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Estuarine saltmarshes are subject to numerous hydrological forcings, including tides, storm surge, river flows, stormwater and groundwater. To inform the conservation of the largest remaining saltmarsh in the Swan-Canning estuary a hydrological study was conducted to evaluate the various contributions from these processes and their interactions to inform conservation. In this talk, aspects of the surface water and groundwater dynamics are presented, interrogated through data and modelling. Aquifer properties were evaluated from various methods including water quality, Fourier analysis of aquifer tides, and two geophysics technique, Loupe TEM and electrical resistivity tomography. Based on a conceptual hydrological model, developed from these analyses, future climate scenarios were simulated and key knowledge gaps identified to predict the stability of this threatened ecological community in the face of sea-level rise.