

Undergraduate researcher opportunity

Design, construct, and test two versions of a manometer for quantification of vertical hydraulic gradients and groundwater fluxes and nutrients across the sediment-water interface

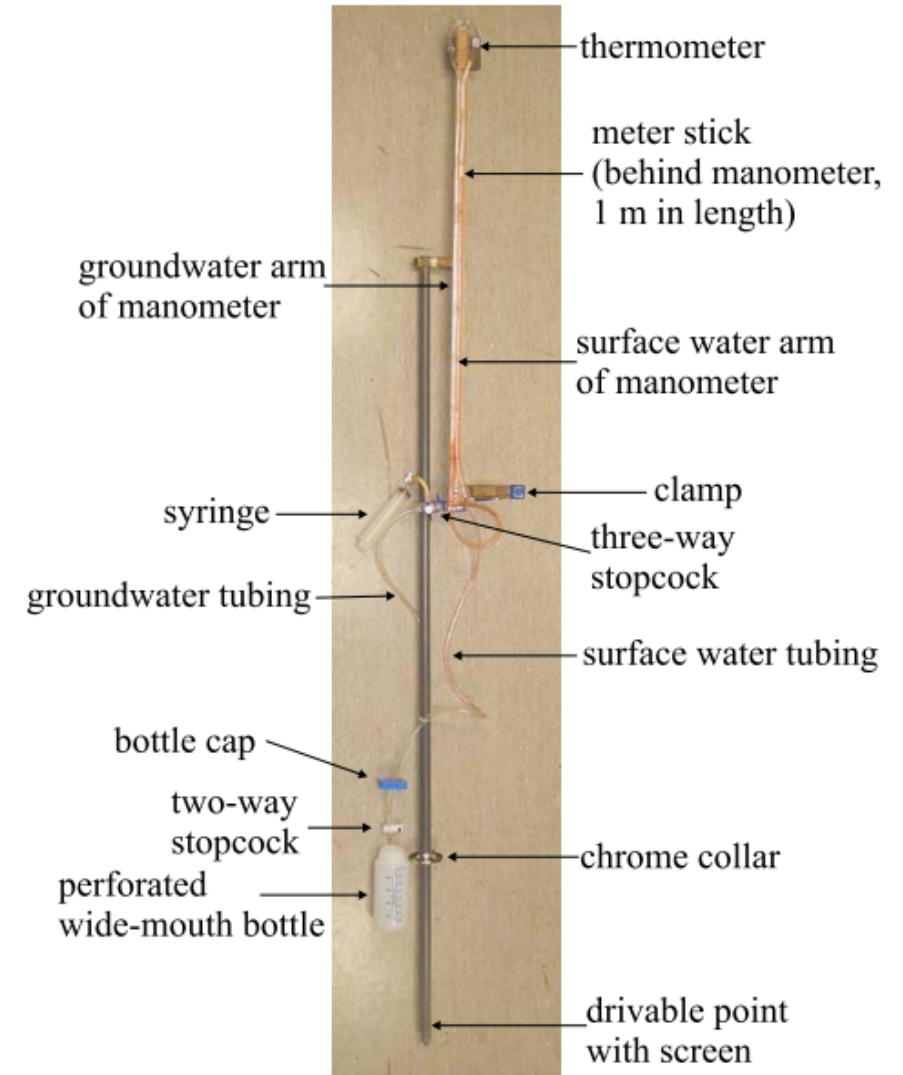


Figure 1. Photograph of the piezomanometer with critical components labeled. The wide-mouth bottle and cap are optional components that may be useful in areas with high stream water velocity (see text).

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Figure 5. Hydraulic potentiometer showing drive probe inserted into lakebed and manometer indicating a very small vertical hydraulic-head gradient (blue arrows indicate water levels on manometer). (Photograph by Donald Rosenberry, U.S. Geological Survey.)

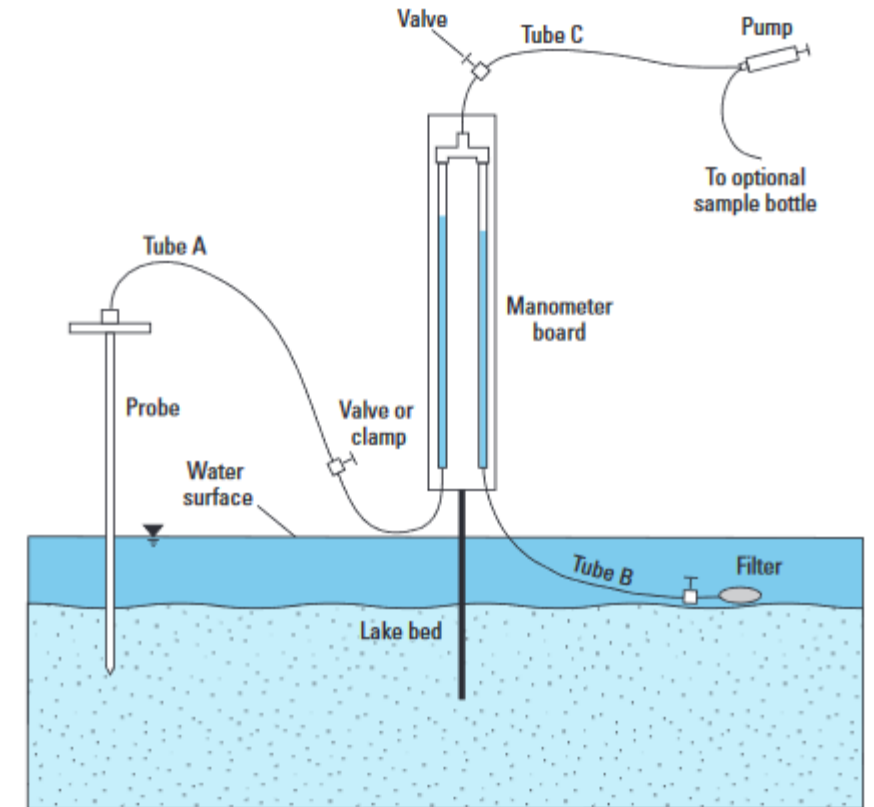
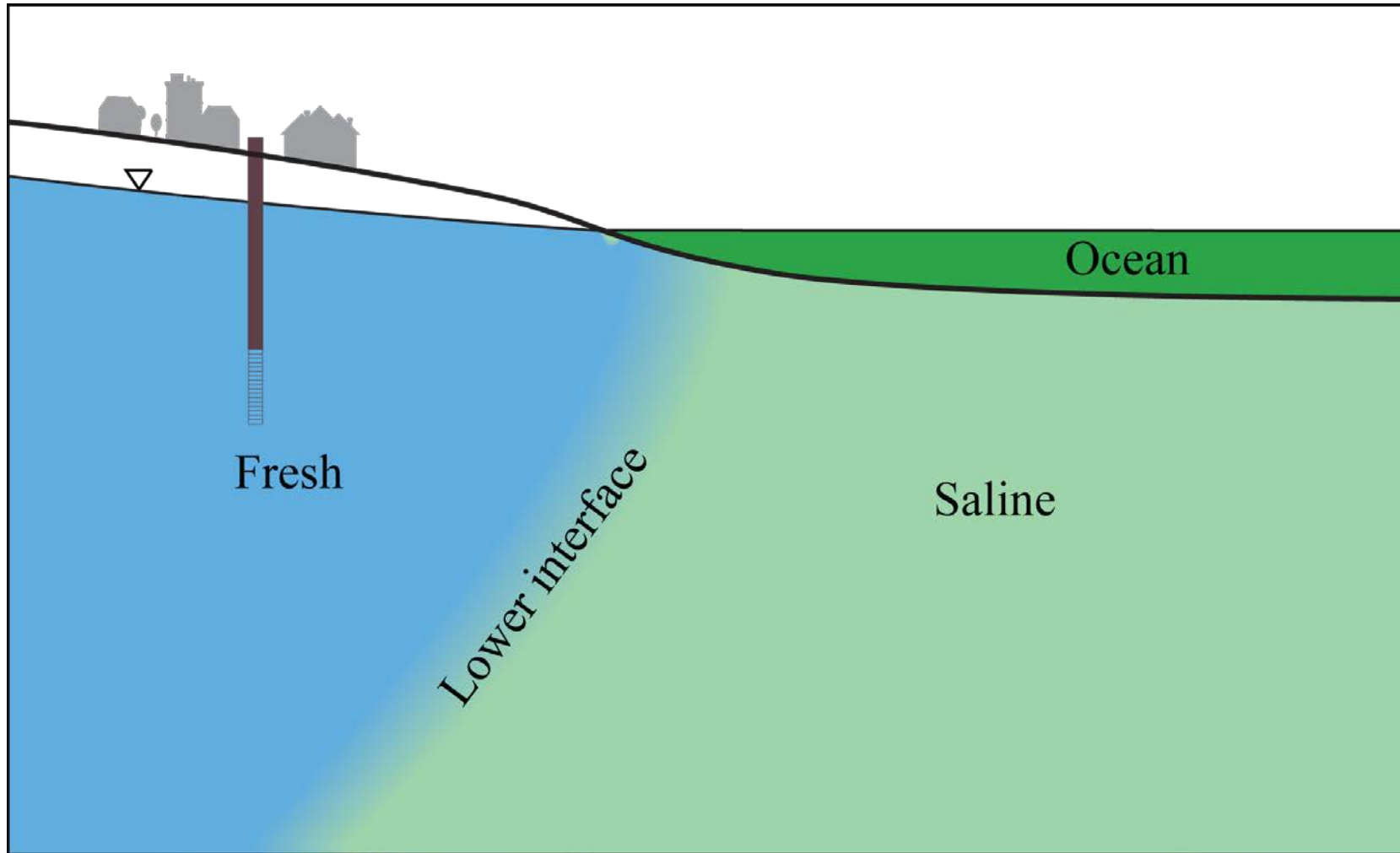


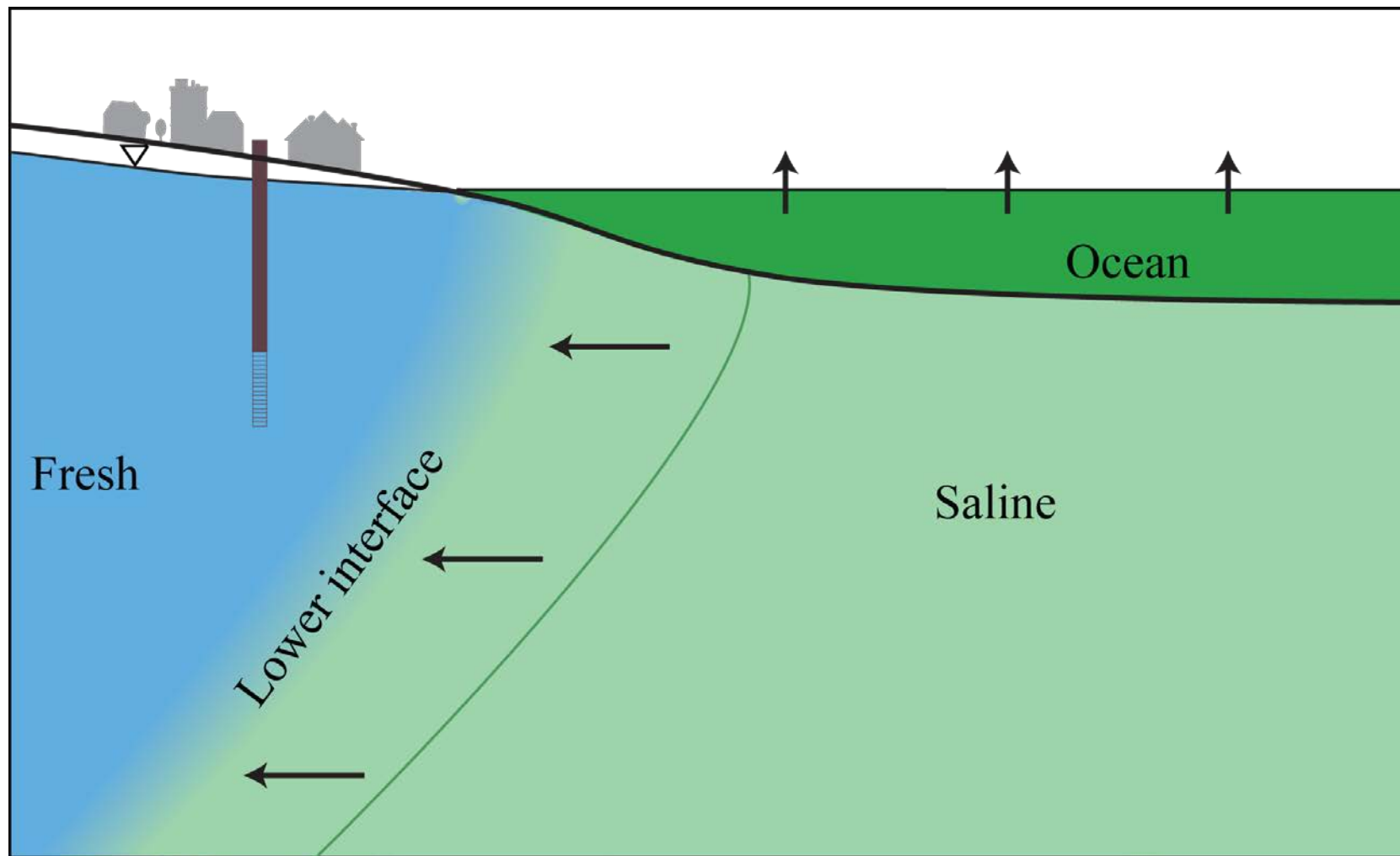
Figure 6. Components of the hydraulic potentiometer system. (Modified from Winter and others, 1988; copyright 1988 by the American Society of Limnology and Oceanography, Inc., used with permission.)

Salinization at the coast

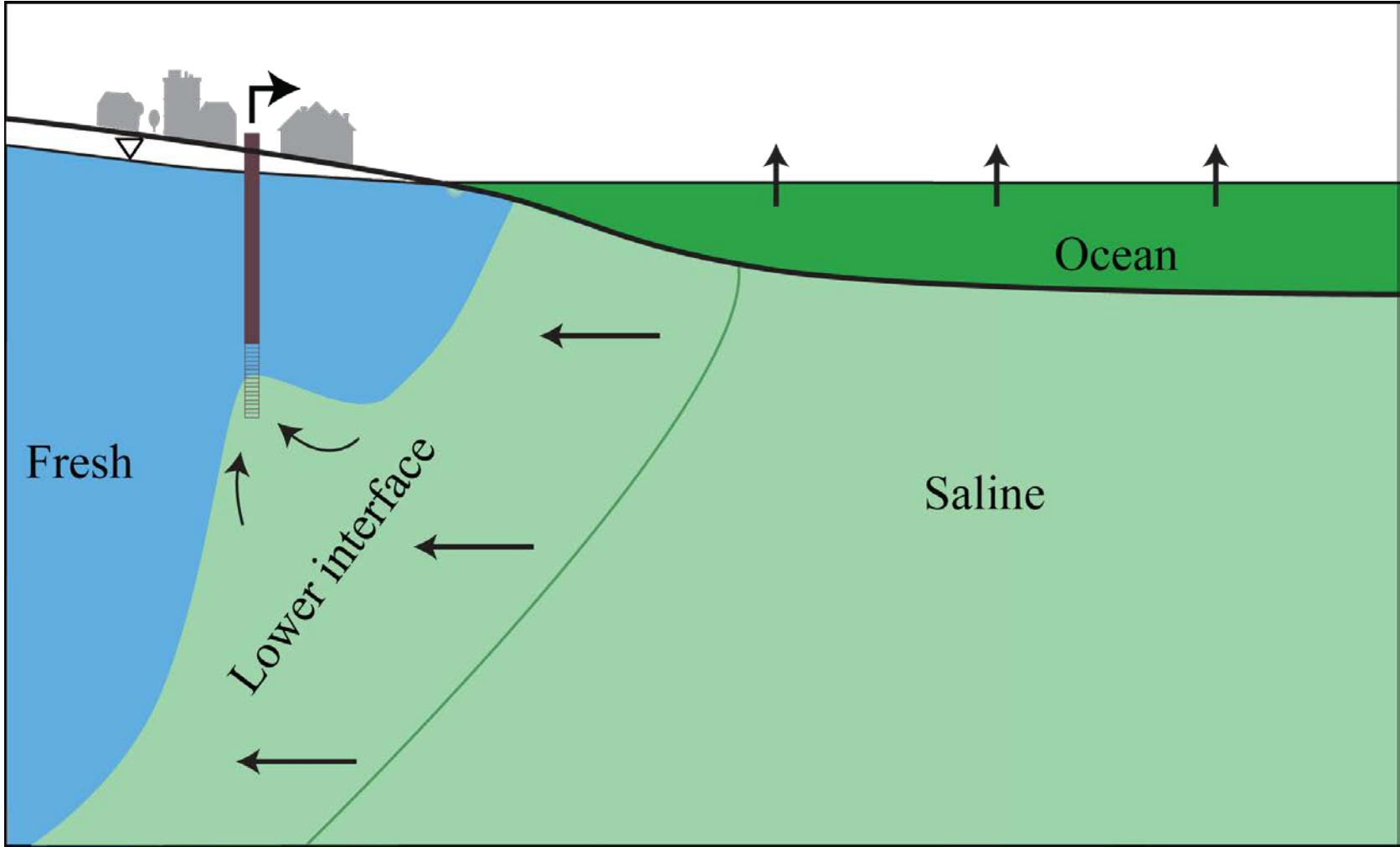




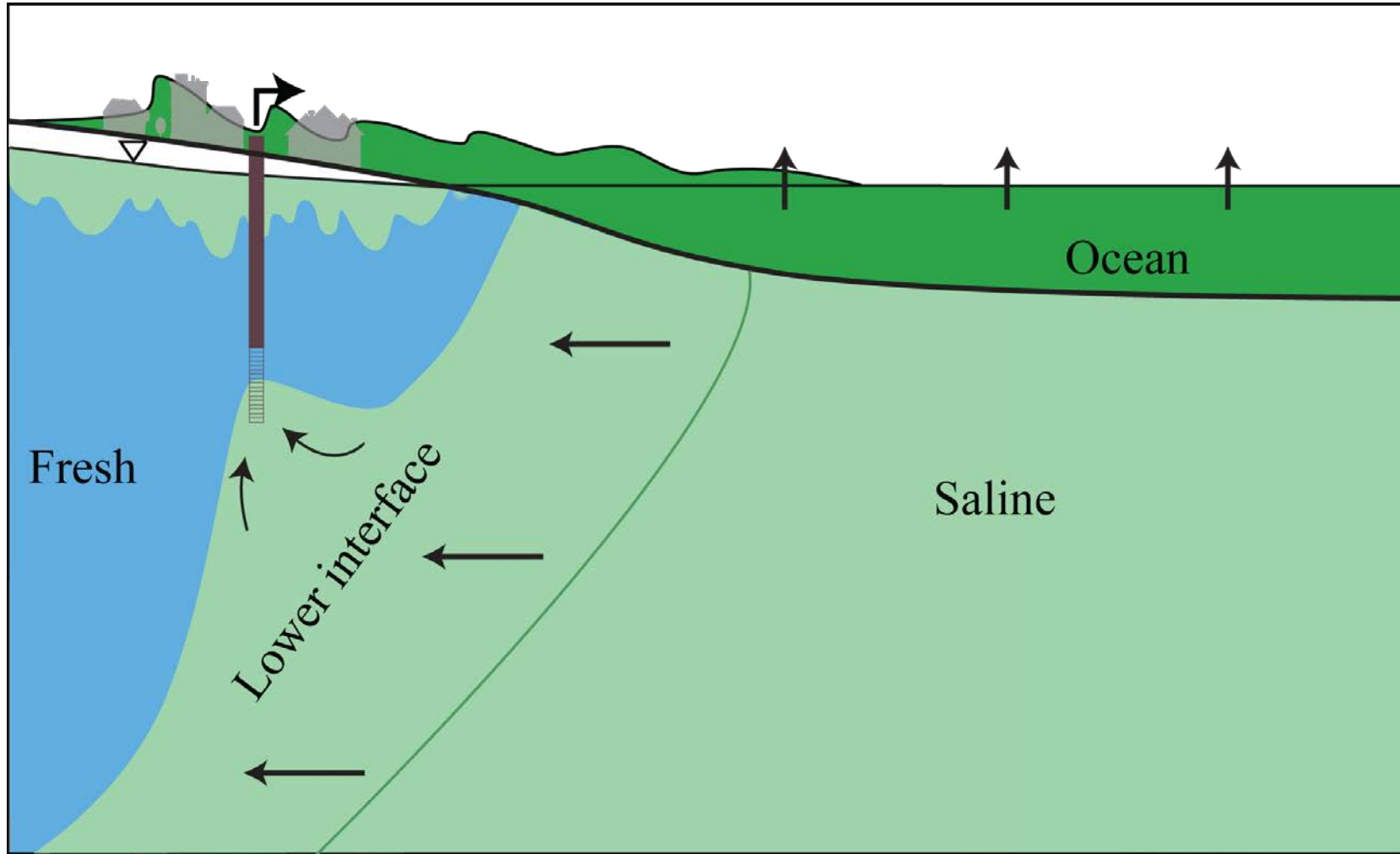
Sea level rise



The diagram illustrates a coastal aquifer system. On the left, a blue area represents 'Fresh' groundwater. On the right, a green area represents 'Saline' groundwater. A black line separates the two, labeled 'Lower interface'. A well is shown extracting fresh water from the aquifer. Arrows indicate the flow of water from the ocean into the aquifer and from the well into the surface water body.



Storm surge and coastal flooding salinization



Aquifer salinization on islands

