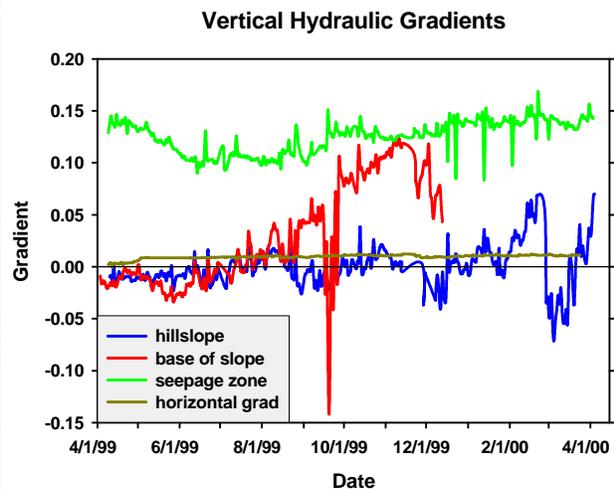


EVALUATING GROUNDWATER QUALITY AND MOVEMENT IN THE RIPARIAN ZONE

Subsurface groundwater flow and behavior in a riparian system largely determine the fate of groundwater-borne agrochemicals in the larger ecosystem. Certain conditions typically found in riparian wetlands should theoretically remove many contaminants from the groundwater, before they are discharged into the stream channel. However, other conditions can act to lessen riparian mitigation function, so it is important to monitor groundwater both spatially and temporally.



The photo on the left is a transect of nested piezometers (clusters at varying depths), instrumented with pressure transducers for real-time monitoring of groundwater levels and gradients. The graph on the right shows hydraulic gradients for one of these transects, from April 1999 to April 2000. Vertical gradients in the seepage zone (area of active groundwater upwelling to the surface) were continually positive. Gradients at the base of the hillslope were strongly negative only when there was substantial flooding (from hurricane Floyd). There are 170 piezometers throughout the riparian zone. Samples are also obtained from these piezometers, and analyzed for chemical composition.

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