

## **Utilizing Groundwater Models for a Seepage Intercomparison Experiment in West Neck Bay, Shelter Island, NY**

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In May 2002, an intercomparison experiment involving the Scientific Committee on Oceanic Research (SCOR) Working Group 112 will take place in West Neck Bay, Shelter Island, NY. The experiment will be the third experiment conducted by the group in an attempt to evaluate various methodologies to quantify submarine groundwater discharge (SGD). Some of the tools that will be used for this experiment are three dimensional groundwater models that have been constructed for Shelter Island. Both finite difference (MODFLOW) and dual density finite element models (DYNSWIM) have been developed and will be used to provide estimates of groundwater flux into West Neck Bay. Preliminary results using MODFLOW are consistent with field SGD measured by an ultrasonic groundwater seepage meter, averaging approximately 60-120 cm/d within the deployment area of the meter. DYNSWIM is currently being tested in an attempt to numerically simulate the inverse relationship between specific discharge and tidal stage resulting from the cyclic head changes that overlie the seepage zone.