

January/February 2013

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### 2012 in review

The NGS Ecosystem and Climate Operations Team (ECO) had a very busy year in 2012. Our count shows that we worked on 2 guideline documents, attended 5 conferences or workshops, gave 4 various multi-day trainings, and went into the field 6 times for 4 different projects. ECO also engaged in many multi-office initiatives. ECO took a lead role in the beginning of the NOAA Sentinel Site Program and continues to be very engaged with the Chesapeake Bay Sentinel Site Cooperative (CBSSC). The team continued its engagement in the Chesapeake Bay Executive Order, furthering the President's goal of a healthier Bay.

### 2013 looking forward

In 2013 ECO will continue to increase engagement with many coastal partners, strengthening relationships formed in the last few years. For example, ECO is planning to continue working on projects with the Smithsonian Institution, the US Geological Survey, a number of university partners, the US National Park Service, the US Fish and Wildlife Service, and with the National Estuarine Research Reserve System. The overarching goal is to bring *geodesy to the water's edge* and to help expand the concept of long term sea level change sentinel sites in 2013.

Surface Elevation Table (SET) research will be a major focus this year; specifically documenting errors in the field and comparing SETs to other high precision surveying techniques that may increase the spatial density of repeated measurements of wetland sediment surface elevation. We will also investigate the ability to detect vertical change in local geodetic control networks using GPS-based technology, assist in efforts to determine vertical rates on published bench marks, and otherwise help coastal partners obtain high precision positional data. Finally, this year marks the return of a team member who has been at the University of Rhode Island working towards his PhD!

### ECO in Cape Cod

In December, NGS ECO partnered with the Waquoit Bay National Estuarine Research Reserve (WB NERR) staff to complete the first year of a study monitoring the stability of different types of wetland-based local geodetic control networks set in the deep wetland peats found at Cape Cod. As part of the [NERRS Sentinel Site Program](#), local geodetic control networks are required to connect vertically-based field observations, such as local water levels and wetland elevation changes. However, the remote locations of many of these sites mean that traditional upland geodetic control networks are unavailable.

One purpose of this study has been to document the relative stability of positional reference marks established in wetland sediments. Furthermore, at the conclusion of this first year, all 12 experimental wetland rod marks established at WB NERR were converted into dual-purpose SET marks, representing an important milestone in the completion of the required infrastructure for sea-level change sentinel sites as part of the NERRS Sentinel Site Program.

### **ECO in Gulf of Mexico**

NGS Geodetic Advisor to Florida, David Newcomer, presented a poster and a talk at the 2013 Gulf of Mexico Oil Spill and Ecosystem Science Conference (January 21-23) in New Orleans, LA. Both presentations highlighted the important role of high accuracy elevations in low-lying coastal areas, especially in regions of high subsidence and restricted tidal range. Dave also presented information on the latest improvements to the NSRS, and our collaboration on sentinel site initiatives.

### **Northeast Roundtable**

NGS Geodetic Advisor to Vermont, Dan Martin, joined a roundtable in Portsmouth, New Hampshire (Feb 13) aimed at increasing partner access to NOAA's regional resources and increasing NOAA's understanding of partner needs. The NH Climate Adaptation Workgroup identified marsh migration as a priority concern, and NGS ECO can help provide resources for the study and evaluation of marsh health relative to land elevation and water levels.

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