SOUTH EFFORD MARSH MONITORING

Location: South Efford, Plymouth, UK
Project Dates: 2012 – 2016
Clients: Environment Agency

Scope of Work:
- Regular terrestrial laser scanning of entire salt marsh
- Annual Laser total station surveys of salt marsh transects
- Analysis of sediment and seed deposition
- Marsh surface samples for foraminiferal analysis.

PROJECT DESCRIPTION

Around 1760 South Efford marsh was reclaimed and converted to pasture through the construction of a surrounding embankment. In 2011, the Environment Agency installed a self-regulating tidal gate (SRT) at the southern end of the marsh to allow the tide to, once more, flood the area. In 2012, Plymouth University entered into a partnership with the EA to collaborate on the environmental monitoring of the Marsh restoration. This included morphological, ecological, sediment, hydrodynamic, and water quality monitoring, all using a shared measurement framework. The effects of altering the tidal prism (through adjustment of the SRT) on sediment deposition, drainage, and the colonisation of salt marsh flora and fauna will continue to be assessed until 2016.

Above: Spatial pattern of tidal inundation in South Efford restored area in average hours per month during: (a) Phase I (Sep 2011 – May 2012); (b) Phase II (Oct 2012 – May 2013); and (c) Phase III (Sep 2013 – May 2014). LiDAR data courtesy of Channel Coastal Observatory (www.channelcoast.org).

Right: Salt marsh restoration site at South Efford with morphological transects and location of ecological quadrants (blue and green squares).