Tidal wetland restoration is of key interest for improving wildlife habitat as well as mitigating carbon pollution by sequestering carbon in soil/sediments. My recent work on marsh soil formation processes has yielded insights that could inform restoration decision-making. In a field study at the landward end of the San Francisco Estuary of California (the Delta), peat cores from tidal freshwater marshes were analyzed for bulk density, organic carbon, sediment content, and 14C and 210Pb for dating purposes. Results showed that vertical accretion relied more on organic accumulation in marshes along low-energy tributaries and more on inorganic sediment deposition in marshes situated along the main channels. In addition, these studies demonstrated that organic accumulation alone may be enough to sustain tidal freshwater marshes through the millennia. In addition to field studies, I also used a one-dimensional marsh surface elevation model, the Wetland Accretion Rate Model of Ecosystem Resilience (WARMER), to explore the conditions under which Delta marshes remained sustainable under a broad suite of sea-level rise scenarios. WARMER results showed that rates of sea-level rise and inorganic sedimentation were the key factors in determining marsh sustainability over the next 100 years. However, the lack of an important role for organic accumulation showed that the parameterization of this variable in WARMER may not be adequate for all marsh settings. In order to have the highest likelihood of long-term success in wetland restoration, practitioners must have a good understanding of the hydrogeomorphic setting and the historic rates of vertical accretion in the project area.