Tidal marshes, those uber-productive wetlands that connect the shore and sea, are changing. They are eroding away in many parts of Connecticut’s coast due to rapidly rising sea levels in the Northeast, but in some instances are migrating landward. Marshes support a vast array of wildlife and vegetation, improve water quality, and protect communities from storm impacts. What most people don’t realize, however, is the host of complicated questions that arise as marshes try to migrate inland; for example, how fast are marshes changing? Does salty water coming in kill trees? Sediments brought by incoming tides are deposited as always at ebb tide, but in places where accumulation exceeds erosion and new marsh is able to form, the process runs smack into what was the marsh upland. In the upland areas, which were at a higher elevation, shrubs and trees grow.

Shimon Anisfeld, a Sea-Grant sponsored researcher at Yale, wondered how the transformation process would go. Would trees die off from the intrusion of salty water coming in, allowing the establishment of marsh grasses, or would the upland trees and shrubs remain, hindering the formation of new low and high marshes? He and his team are sampling and watching Sherwood Island, Barn Island, Hammonassett, and other marshes over time. So far, they believe that the trees are in fact slowly dying off, which is considered a good sign for new marsh.

Yale researcher Shimon Anisfeld and his research team collect upland marsh sediment samples at Hammonassett State Park in Madison.