



Photo by Natasha Burr

Adaptive Urbanism

Tybee Island, Georgia

By Natasha Burr, BLA 2017

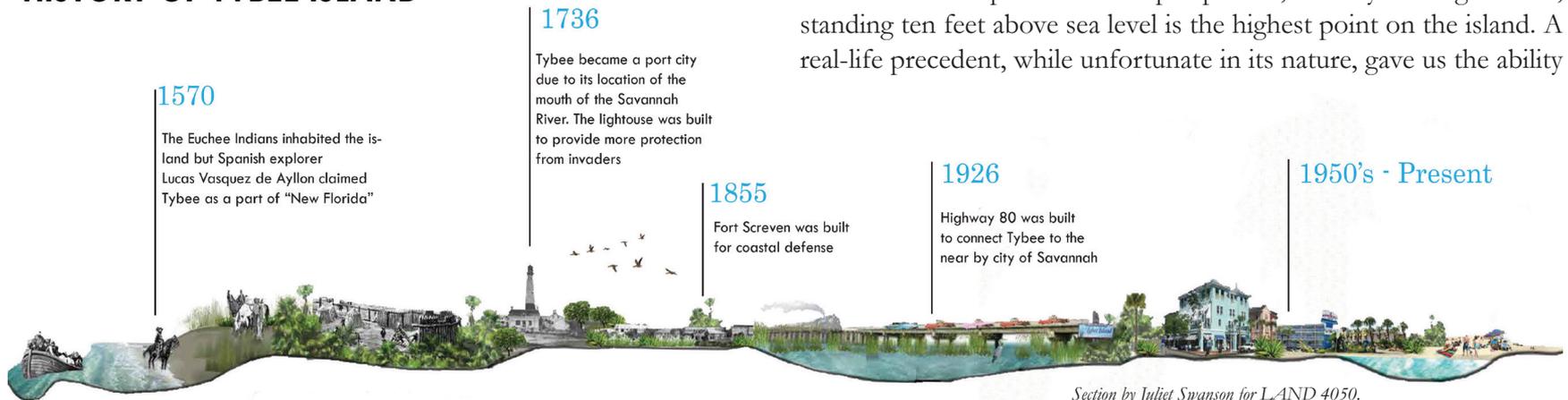
Tybee Island, Savannah's beachside retreat, is known for its coastal history, tranquil scenery, and remarkable ecology. Located approximately 20 miles east of Savannah, this 3.21 square mile barrier island is a vacation destination. However, the island is facing an uncertain future in which it must actively adapt to climate change, ecological depletion, overdevelopment, and increased tourism.

During the fall of 2016, the students in Professor Alison Smith's LAND 4050 Studio: Region, Site, and Place were tasked with creating a general master plan and a site-scale design for Tybee Island. The project sought to create a sustainable, resilient landscape in the face of climate, development, and tourism challenges – a solution that balanced conservation, recreation, and development. Tybee Island already has a Sea Level Rise Adaptation Plan in place, the first of its kind. This, in addition to an existing conditions inventory, and a GIS suitability analysis for various forms of conservation and development informed the master plan. This included ecological protection, dune restoration, living shorelines and marshland conservation, residential development, commercial development, historical preservation, and bicycle and pedestrian circulation.



In early October, a mere week after we visited Tybee Island, our impending concerns became a reality—Hurricane Matthew struck. It caused catastrophic damage throughout the Atlantic Ocean and severely impacted the Florida and Georgia coasts. A tidal gauge at Fort Pulaski, just off the coast of Tybee, measured a record-breaking 12.56 feet.¹ To put this into perspective, the Tybee Lighthouse, standing ten feet above sea level is the highest point on the island. A real-life precedent, while unfortunate in its nature, gave us the ability

HISTORY OF TYBEE ISLAND



Section by Juliet Swanson for LAND 4050.

*Professor Pardue's
class critique of
"protect, adapt,
retreat" Maps, photo
by Qiao He.*



to visualize how critical it was to generate resilient designs able to withstand the increased storm surge due to sea level rise.

The semester-long project required collaboration with island stakeholders including residents, developers, city officials, city engineers, and marine and ecological specialists. Intended to present Tybee Island as a model of adaptive urbanism in coastal cities, the project would contribute to the Georgia Conservancy's mission to protect and conserve Georgia's natural resources through advocacy, engagement, and collaboration. At the conclusion of the semester, the students presented their work to Paul Wolff, Councilman for the City of Tybee, and Charles McMillan, Coastal Director of the Georgia Conservancy.

The following spring, the Tybee Island Master Plan was reassessed in a different light. Professor Doug Pardue's LAND 4060 Studio: Urban Design took the analysis developed during the previous semester and applied an "adapt, retreat, protect" strategy in response to sea-level rise. Adapted areas emphasize human intervention to adjust to the changing ecological processes while retreated areas call for the reduction of human development at these high risk locations. Protected areas require long-term human involvement and regulation to withstand inevitable environmental casualties. This method addresses the shifting terrains caused by sea level rise and storm surge while simultaneously taking into consideration critical infrastructure in anticipation of climate change. We further developed our analysis



by reconsidering sectors of the island—its water, cultural resources, built environment—in terms of this dynamic landscape’s future coastal resiliency.

We focused heavily on the triple bottom line (ecological, economic, and social impact) to facilitate our designs. We also considered changes over time and potential outcomes if another large-scale hurricane swept across the island. We hope to provide useful design proposals for an archetypal coastal town that will inform future policy, programming, and site planning. ■



¹Chapman, Dan. “Hurricane Matthew ravages Tybee on Georgia coast.” *The Atlanta Journal-Constitution*. October 11, 2016.

Tybee Island lighthouse (left), by Natasha Burr.

