

Participatory modeling for Pointe-aux-Chenes

Coastal Sustainability Studio | Community Project Proposal

Brendan Harmon

baharmon@lsu.edu

Project description I propose running a participatory modeling studio with the 3rd year graduate landscape architecture class to collaboratively model and visualize alternative futures for Pointe-aux-Chenes in Terrebonne Parish, Louisiana. The studio would address the impact of coastal change – of flooding, saltwater intrusion, coastal erosion, and land-loss – on Pointe-aux-Chenes, the home of the Pointe-au-Chien Indian Tribe. We would hold a series of participatory workshops in the community. Using geospatial modeling, tangible interaction, and virtual reality the students would work with community members to develop their own plans for adapting to and living with coastal change. As a thesis project another landscape architecture graduate student would use cognitive mapping to study the community's relationship with their environment and the impacts of displacement by coastal change. The goal of this studio and research would be to help community members map and document their cultural heritage, model coastal change scenarios, and develop and visualize plans for adaptation, relocation, and heritage conservation. At the end of the studio we will showcase the process and results in an exhibition and website.

Methods As research the aim of this project is to study how tangible interfaces for geospatial modeling can be used for participatory modeling, planning, and design. We will use Tangible Landscape – an open source system that interactively



Figure 1: Tangible Landscape: a real-time cycle of 3D scanning, geospatial computation and 3D modeling, and projection and 3D rendering.

couples a physical model and digital model of a landscape in real-time – in participatory modeling workshops so that students and community members can intuitively, collaboratively model new landforms, planting, routes, and structures and see how these change geospatial analyses and simulations like water flow, erosion, and flooding in real-time (Fig. 1). See <http://tangible-landscape.github.io/> and <https://youtu.be/pYbpEMjME1Y> to learn more about Tangible Landscape. We will also use digitally fabricated models, 360 degree photography and video, and virtual reality as tools to help the community visualize how their dynamic environment may change. Our objectives are to *a*) intuitively visualize scientific analyses and models of coastal change, *b*) engage community stakeholders in modeling and planning through tangible interaction and immersive visualization, and *c*) develop a case study for participatory modeling with Tangible Landscape.

Team

Role	Name
PI & Instructor	Brendan Harmon
MLA Thesis Student	Philip Fernberg
Visiting researchers	Anna Petrasova & Payam Tabrizian
Potential collaborators	from geography, anthropology, & architecture

Deliverables

Deliverable	Topic
Paper	Participatory modeling with Tangible Landscape
Thesis & report	Cognitive mapping of Pointe-aux-Chenes
Website & video	Record of the participatory process
Exhibition	Showcase the participatory process and its results

Budget

Category	Item	Cost
Tangible Landscape	Parts & materials	\$1500
Digital fabrication	Materials	\$1300
360 Photography	Ricoh Theta V	\$500
Printing	Publication	\$750
Exhibition	Materials & setup	\$500
Travel	Van rental	\$450
	Airfare for visiting researchers	\$500
	Total	\$5,500