WATER@MICHIGAN –SUMMARY & BIOGRAPHY
MARK LINDQUIST

PRESENTATION SUMMARY

Co-designing Multifunctional Landscapes

Subtheme: *Water Quality and Inequality*

Involving residents in green infrastructure (GI) planning and design can lead to more successful and resilient outcomes. Integrating the concept of ecosystem services (ES) into public participation processes can enhance outcomes but requires robust decision support systems (DSS) that can more effectively incorporate community needs.

To this end we've co-designed an interactive decision support system based on the Unity video-game platform that makes tradeoffs of different decisions explicit. The DSS is being applied and evaluated in the context of Green Infrastructure and Greenway planning and design in the City of Detroit and is being extended in terms of: (i) the scale of enquiry beyond a site; (ii) types of stakeholders; and (iii) the included metrics. Future research in this area will benefit from intergenerational approaches and community leadership development to empower residents in decision making around multifunctional landscapes.

BIOGRAPHICAL INFORMATION

Mark Lindquist, Assistant Professor, Landscape Architecture, SEAS

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Mark's research and teaching focus on the design and evaluation of high performance landscapes with an emphasis on multifunctional green infrastructure in urban areas. He is particularly interested in understanding how engaging with computation and data can transform the design process as well as inform decision making by stakeholders.

Past co-production projects include:

U3D-DSS: A Novel Video Game Decision Support System for Community Directed Green Infrastructure Design
Collaborator: Victoria Campbell-Arvai, UM SEAS
Partners: Alliance for the Great Lakes, Eastside Community Network (Detroit)

The project focused on the co-design with stakeholders a prototype decision support system and evaluated its effectiveness in the context of green infrastructure and greenway planning in Detroit (Figure 1 and 2).

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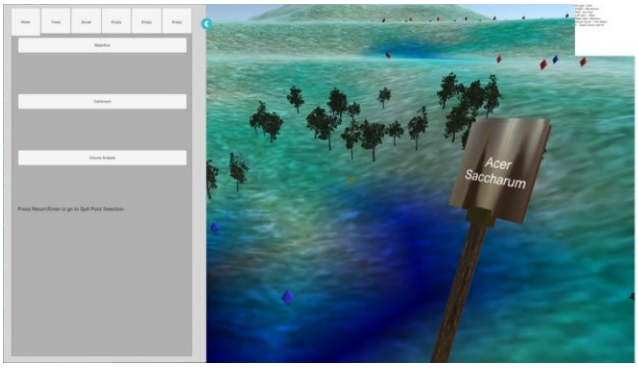

Fig. 1: Visualization of stormwater behavior 'painted' on terrain

Fig. 2: Stormwater behavior of a few drops of water

Ngati Kahu: Culture & Ecology Under Pressure
Partners: Ngati Kahu Māori iwi, Northland, New Zealand

For this project we collaborated with the Ngati Kahu Māori iwi to conduct a cultural and ecological inventory of the tribal lands to create alternative future scenarios that emphasized cultural, ecological and economic development. The project resulted in a series of student proposals that has informed future development.