Anna Petrasova · Brendan Harmon
Vaclav Petras · Helena Mitasova

# Tangible Modeling with Open Source GIS

Springer

## Resources

**Tangible Landscape**

tangible-landscape.github.io

**GRASS GIS**

grass.osgeo.org

**Blender**

blender.org

**NCSU Center for Geospatial Analytics**

geospatial.ncsu.edu

**TANGIBLE** LANDSCAPE



# TANGIBLE
## LANDSCAPE

powered by

**GRASS** GIS

on GitHub



TANGIBLE LANDSCAPE

# TANGIBLE
## LANDSCAPE

powered by

**GRASS** GIS

# NCSU GeoForAll Lab
## North Carolina State University
### Center for Geospatial Analytics

geospatial.ncsu.edu/osgeorel

## Tangible Landscape

We present Tangible Landscape, an open source tangible interface for 3D sketching powered by GRASS GIS and Blender. Tangible Landscape physically, interactively manifests geospatial data so that you can naturally feel it, see it, and shape it.
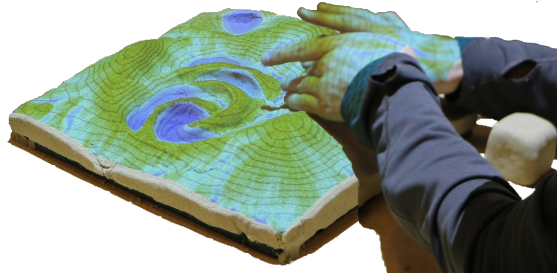


**3D sketching by sculpting:** by sculpting the terrain you can control the simulated flow of water and other environmental processes.



**Planting with colored felt:** by placing pieces of felt representing patches of trees you can visualize different designs of the landscape.

## Applications

With this novel technology you can intuitively interact with processes like water flow, erosion, solar radiation, flooding, fire spread, disease spread, and urban growth in order to experimentally test interventions.
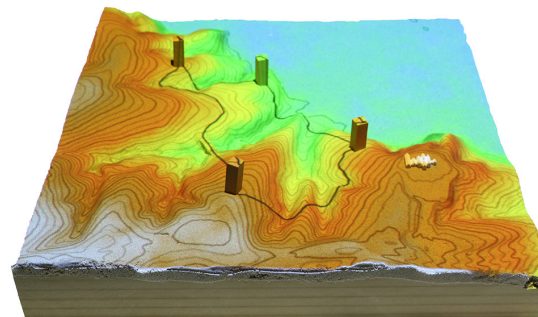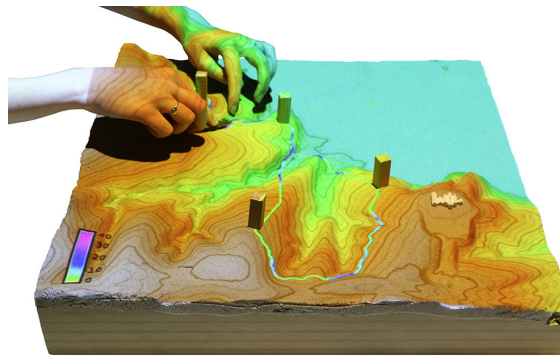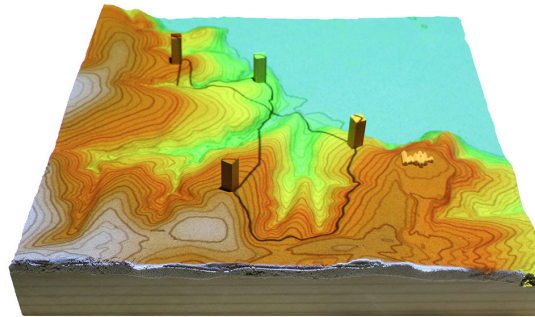


**3D sketching with object recognition**: you can place markers to digitize waypoints and Tangible Landscape will compute the optimal route.

research by

# NCSU GeoForAll Lab

## North Carolina State University

### Center for Geospatial Analytics
geospatial.ncsu.edu/osgeorel

## Team
Anna Petrasova, Payam Tabrizian, Brendan Harmon, Vaclav Petras, Garrett Millar, and Helena Mitasova

## How it works

Tangible Landscape is a technology that links a physical model with a geographic information system and 3D modeling platform through a real-time cycle of interaction, 3D scanning, geospatial computation, projection, and 3D rendering.



blender
3D modeling and rendering

GRASS GIS
geospatial computation

3D scanning
projection