Water Erosion Prediction Project

Team 5
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Team 5 - Swept Away

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Our Application

- A mobile interface for the WEPP erosion model for use by high school students and teachers
- Allows users to easily see the effects of factors like slope length, slope gradient, soil type, and plant ground coverage on the amount of precipitate expected from erosion
- Currently have limited the implementation of the applications location-of-use to Michigan
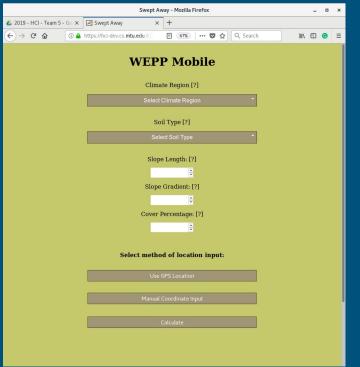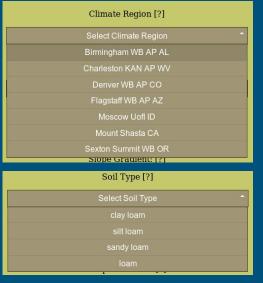
Users

- High school students
- High school teachers
- Soil erosion enthusiasts
- Citizen scientists
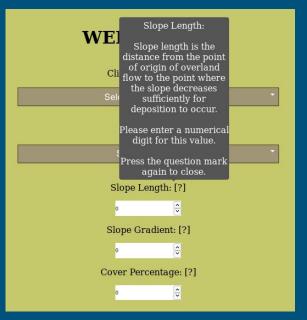- Our scientist's team
- Our development team

How to Use Our Application

- Enter data in the labelled fields
  - Two methods of calculating the user's location
    - GPS of the device
    - Manual entering of latitude and longitude
- click the calculate button
- result fields will appear on the page
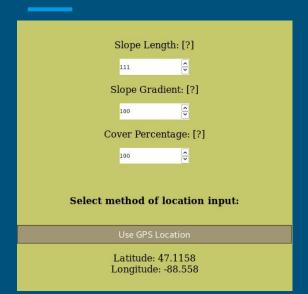- change any values and click the calculate button again to view the effects
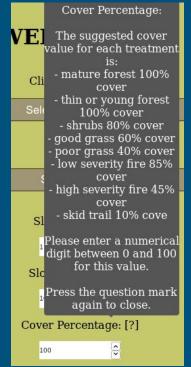
Our User Interface

https://hci-dev.cs.mtu.edu:8132/WEPP/

Slope Length: [?]

`111`

Slope Gradient: [?]

`100`

Cover Percentage: [?]

`100`

Select method of location input:

Use GPS Location

Latitude: 47.1158
Longitude: -88.558

Cover Percentage:

The suggested cover value for each treatment is:
- mature forest 100% cover
- thin or young forest 100% cover
- shrubs 80% cover
- good grass 60% cover
- poor grass 40% cover
- low severity fire 85% cover
- high severity fire 45% cover
- skid trail 10% cove

Please enter a numerical digit between 0 and 100 for this value.

Press the question mark again to close.

WEI

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Slo

Cover Percentage: [?]

`100`

Re-calculate

Probabilities of occurrence first year following disturbance based on 10 years of climate:

Probability of Runoff	50%
Probability of Erosion	60%
Probability of Delivery	70%

Potential Usability Concerns

- The many parameters may result in a busy or confusing layout
- The color choices may cause eye strain for the user
- The color choices may prevent color-blind users from using our application
- Font choices may be hard to read for those with Dyslexia

What We Have Finished

- The data entry view
  - Data field for slope length, bounded to positive integers
  - Data field for slope gradient, bounded to values between 0 - 100
  - Data field for ground cover, bounded to values between 0 - 100
  - Method to view user's latitude and longitude

What We Need to Implement

- Map interface for GPS coordinates used to run request to RRED
- Results display after calculation
- Final design considerations discovered during the usability testing phase