



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

Swept Away - Mozilla Firefox

2019 - HCI - Team 5 - G... x Swept Away x +

https://hci-dev.cs.mtu.edu:81 67% Search

WEPP Mobile

Climate Region [?]

Select Climate Region

Soil Type [?]

Select Soil Type

Slope Length: [?]

Slope Gradient: [?]

Cover Percentage: [?]

Select method of location input:

Use GPS Location

Manual Coordinate Input

Calculate

Climate Region [?]

Select Climate Region

- Birmingham WB AP AL
- Charleston KAN AP WV
- Denver WB AP CO
- Flagstaff WB AP AZ
- Moscow Uofl ID
- Mount Shasta CA
- Sexton Summit WB OR

Soil Type [?]

Select Soil Type

- clay loam
- silt loam
- sandy loam
- loam

WEPP

Climate Region [?]

Select Climate Region

Slope Length: [?]

Slope Gradient: [?]

Cover Percentage: [?]

Calculate

Slope Length:

Slope length is the distance from the point of origin of overland flow to the point where the slope decreases sufficiently for deposition to occur.

Please enter a numerical digit for this value.

Press the question mark again to close.

<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:

VEI The suggested cover value for each treatment is:

Click

Select

- 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.

Please the question mark again to close.

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