

Evaluation Assignment 1
Website and Stakeholders, Goals and Task Analysis

App: Allow Citizen Scientists to utilize the Water Erosion Prediction Project (WEPP) model for predicting hillslope scale erosion

Team #5: Swept Away

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System Description:

The undergraduate students in team 5 are developing an app to facilitate the use of WEPP (Water Erosion Prediction Project) model. They will combine two existing tools: online erosion modeling database and existing disturbed WEPP which has been developed for forest managers and has land cover for mature and young forests, skid trails, shrubs, good and poor grass communities, and low and high soil burn severity fires. The main goal is to help land managers and scientists in the field and can put advanced erosion modeling capabilities into the hands of citizen scientists. Also, it will help to educate students on the effects of landcover in soil erosion.

Stakeholder Onion Diagram: Figure 1 below shows the primary users, secondary stakeholders and tertiary stakeholders of the WEPP app in an onion diagram.

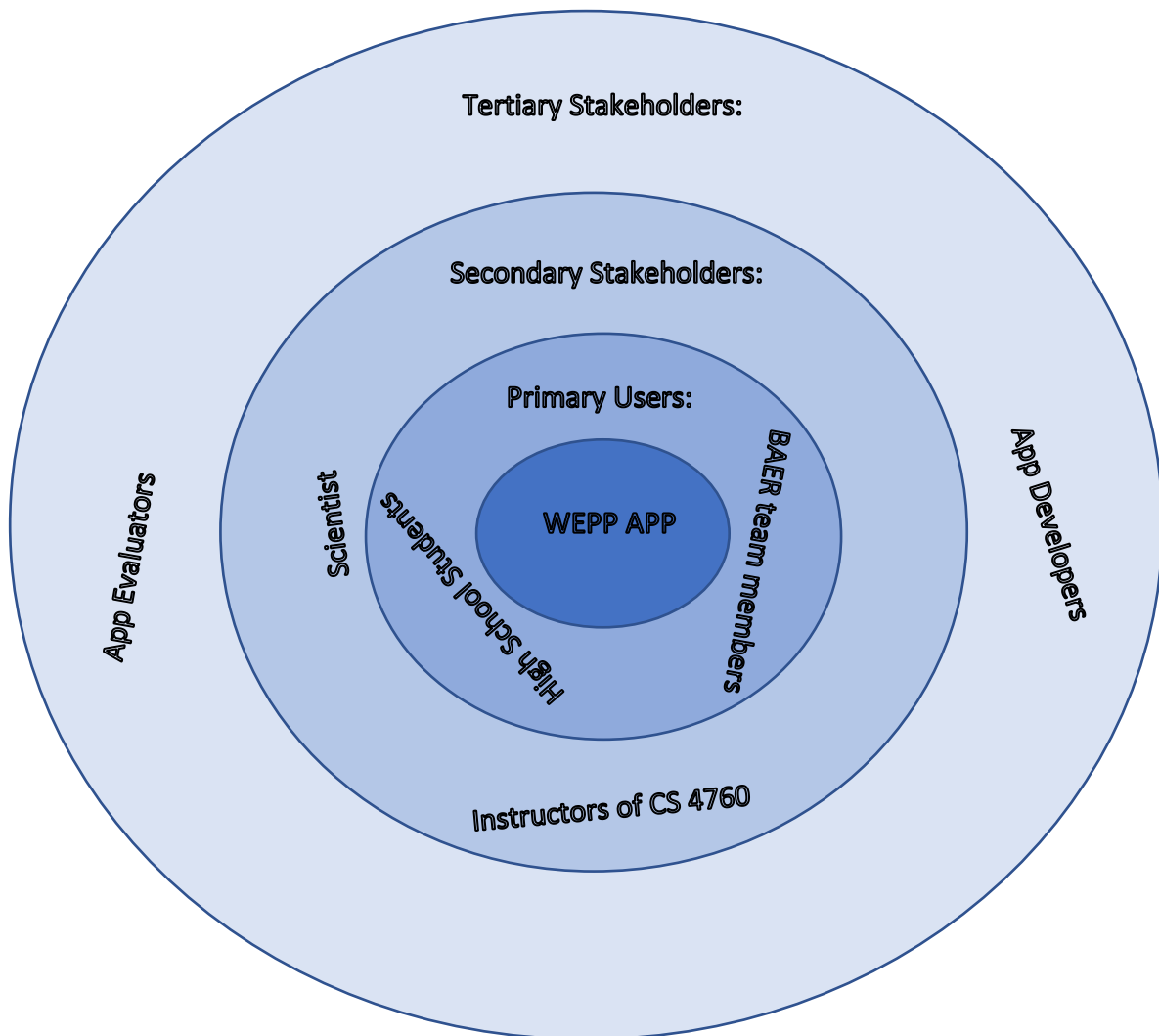


Figure 1: Stakeholder Onion Diagram

Stakeholder Description:

Primary Users:

High School Students: The primary users are high school students who can learn the effects of landcover in soil erosion.

BAER Team Members: Burned Area Emergency Response (BAER) team members such as hydrologist, engineer, forester etc. can use this app for research purpose.

Secondary Stakeholder:

Scientist: The scientist of this app Mary Miller will not be directly related to the app. However, she can use the app for the data collected by the primary users to carry on further research on the intended subject.

Instructors of CS 4760: The course instructors of CS 4760 are classified as a secondary stakeholder here as he/she can test the results of the app or provide input to evaluate the team of the students. The success of the app is beneficial both for his/her students and his/her course.

Tertiary Stakeholders:

App Developers: The undergraduate students are developing the app. The app developers will implement the WEPP app to meet the needs of secondary stakeholders and primary users and hence they are classified as tertiary stakeholders.

App Evaluators: The graduate students will act as app evaluators. They will test the app during the design process. After each phase of user testing, the app evaluators will provide feedback to the app developers.

Stakeholder Goal Influence Table:

Stakeholders	Stakeholder Goal(s)	Associated Influence(s)
High school students	To understand how landcover affects erosion probabilities and how cover plants are important for soil conditions	Influence updating the app by reporting interface errors.
BAER team members	To collect data for research purpose	Influences the overall quality of research with appropriate data
Scientist	To help finding the requirements of the app	Contributes to design the app by checking if all requirements are met.
Instructor	To help students learn about basics of app design and development.	Influences the grades and evaluation of students.
App Developers	To develop a working application.	Influence the creation of a better application.

App Evaluators	To help the development team with consultations about the usability of the application	Influence the design of the application by providing feedback.
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Personas:

Primary User Personas:

Persona one: Environmental Science Student

Name: Anthony

Age: 22

Description: Anthony is a senior in Michigan Technological University. His areas of interest include the GPS based vegetation tracking system. He uses a lot of applications on his cell phone to stay up to date with the technology.

Persona two: Forestry Expert

Name: Keith

Age: 37

Description: Keith has been working in the forest service. He is quite familiar with the effects of soil erosion. He is interested in using a tool that will help him making a decision in his field efficiently.

Secondary Stakeholder Personas:

Persona one: Scientist

Name: Olivia

Age: 35

Description: Olivia is an environmental scientist in Michigan tech research institute. She is interested in analyzing the data collected from primary users in Michigan.

Persona two: Instructor of Forestry

Name: Charles

Age: 45

Description: Charles has been teaching in the forestry department for four years. He is interested in teaching his students how to use tools to learn the effects of soil erosion.

Simplified Hierarchical Task Analysis:

- Input user data such as GPS coordinates
- Input WEPP model Parameters from dropdown menu such as
 - Vegetation Type (User Input)
 - Slope and length of plane (User Input)
 - Cover percentage (User input)
 - Climate file (selected from list)
- Search in the database
- Display the results to the users

Interview Notes:

Date: 01/24/2019

Goal

- Understanding how landcover affects erosion probabilities
- Educate students on the effects of landcover in soil erosion in specific location
- How landcover plants are important for soil conditions

Potential Users:

- BAER (Burned Area Emergency Response) Team Members
- High School Students in Michigan Area

Overall App Idea

- User Interface:
 - Should be easy to use and fun to appeal students
 - Efficient enough for researchers
- Parameters:
- GPS coordinates
 - May request users about their GPS location
 - There can be option for users if they want to share location or not.

Implementation

- The app will be a combination of existing disturbed WEPP tool and online modeling of erosion database.

Materials:

Mary gave a presentation slide of WEPP and showed the existing disturbed WEPP tool