

# AWM106 Agricultural Sediment Fundamentals

---

Name	Date	Grade
------	------	-------

## Lab Exercise #4– WEPP Model

### Lab Objective (3-5 bullets):

- Learn about the use of the WEPP Model
- Understand how the WEPP model is use to predict erosion losses.
- Use practice runs of the model to determine the sensitivity of the model to the different values of some of the major terms of the model.
- Explore the use of the WEPP model on a field in your area.
- Be able to explain the importance of the results in making better-informed management decisions.

### Lab Introduction Narrative (3-5 sentences):

The model developed by the USDA National Soil Erosion Research Lab, West Lafayette, Indiana, Water Erosion Prediction Project, **WEPP**, provides needed technology to better assess how much erosion occurs and how much sediment is deposited on cropland, rangeland and forest land.

WEPP predicts rill and inter-rill erosion separately, which other prediction tools are not designed to accommodate. Rill erosion is caused by water running over the soil, while inter-rill erosion is caused by raindrop impact and splash.

This lab is designed to provide exposure to the WEPP Model, an important tool used by NRCS staff to estimate the potential for erosion in farm fields. By reviewing the overview and working through the tutorial, students will get an idea of the use of the WEPP model. Then they can work through an example from their own watershed, to gain some personal experience with it.

### Text References:

- <http://www.ars.usda.gov/Research/docs.htm?docid=10621>
- [Overview of Soil Erosion](#)  
[WEPP Model v2012.8 Release Notes](#)  
[WEPP Model Documentation](#)  
[WEPP Publications Bibliography List](#)  
[Agricultural Research magazine article on WEPP](#)
- [WEPP Windows Frequently Asked Questions](#)  
[WEPP Windows Interface Tutorial](#) (PDF 5mb)

# AWM106 Agricultural Sediment Fundamentals

---

[WEPP Windows Frequently Asked Questions](#)  
[WEPP Windows Interface Tutorial](#) (PDF 5mb)

## Tools and Materials:

- PC Computer for running the WEPP Model
- Downloaded WEPP Model from the USDA website:
  - <http://www.ars.usda.gov/Research/docs.htm?docid=10621>

## Safety Precautions:

## Procedures:

- Study the Overview document and the Agricultural Research magazine article.
- Download the WEPP Windows Interface Tutorial and work through it.
- Download and install the WEPP model and try a test run with a field from your local watershed.
- Practice with the WEPP Model and determine how changing the values of 3 selected factors affects the results.
- Be prepared to describe your sensitivity analysis and explain the significance of the results in understanding erosion from a field.

## Maintenance of Workstation and Tools:

## Summary Statement:

The WEPP model provides a scientifically sound means of predicting soil erosion and evaluating various factors affect the erosion from a field. Such information is critical to decisions and strategies to reduce soil loss by water erosion.

## Lab-covered Questions (15-points):

## AWM106 Agricultural Sediment Fundamentals

---

Element	Excellent	Proficient	Partially Proficient	Below Proficient	Unsatisfactory	Points
Student Lab Participation	5 points The student is engaging thoroughly, with well thought out questions and answers.	4 points For the student to answer (or ask a question) to engage in the discussion, he/she is engaging, but sometimes is not fully explained or developed.	3 points The student's question/answer was somewhat proficient but could have been expanded upon	2 points- 1 pt. The student's answers was minimal and did not address much of the issues or topics in order to be engaging.	0 points Engagement was neither attempted nor completed	__/5
Student Lab Performance	5 points The student's actions, feedback and comments were thought-provoking and had substance	4 points The student's actions, feedback, and comments were good but could be expanded upon	3 points The student's actions, feedback, and comments made were minimal and did not provide much depth	2 points- 1 pt. The student's actions, feedback, and comments were one sentence that did not expand upon the lab topic	0 points No responses or feedback were given by student	__/5
Total points						__/ 10

**Lab Participation (10-points):**