



Erosion

(Resource ID: 103)

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This teaching resource is allocated to following University:

BOKU - University of Natural Resources and Life Sciences Vienna

Institution:

Institute for Hydraulics and Rural Water Management

<http://www.sustainicum.at/en/modules/view/103.Erosion>



Group work



Independent of
the number of
students



Up to 3 lecture
units



Internet
connection
necessary



English, German

This building block deals with the topic of erosion, specifically soil erosion through water. A laboratory "mini-flume" trial demonstrates the broad input of expert knowledge on the topic of erosion (presentation). The trial can be conducted in the IHLW laboratory upon request. Alternatively, or as an extension to the experiment, an instructional film is also available. A calculation example and template have been prepared for the analysis of the experiment. In a concluding discussion open questions can be discussed and the relationship to sustainability considered. The combination of theory and application allows students a broad insight into the topic of erosion, fostering an awareness for the importance and

possibilities of erosion control. This understanding is essential to the sustainable protection of soil as a resource.

Please note:

This English translation of the „Baustein Erosion“ is a service provided by the *Sustainicum team*. Currently, it has not been approved by the authors.

Basic idea of the building block

This building block deals with the topic of erosion, specifically soil erosion through water.

It is comprised of the following elements:

Instructional video: Mini Flume

Optional: Execution of mini flume trial at IHLW upon request

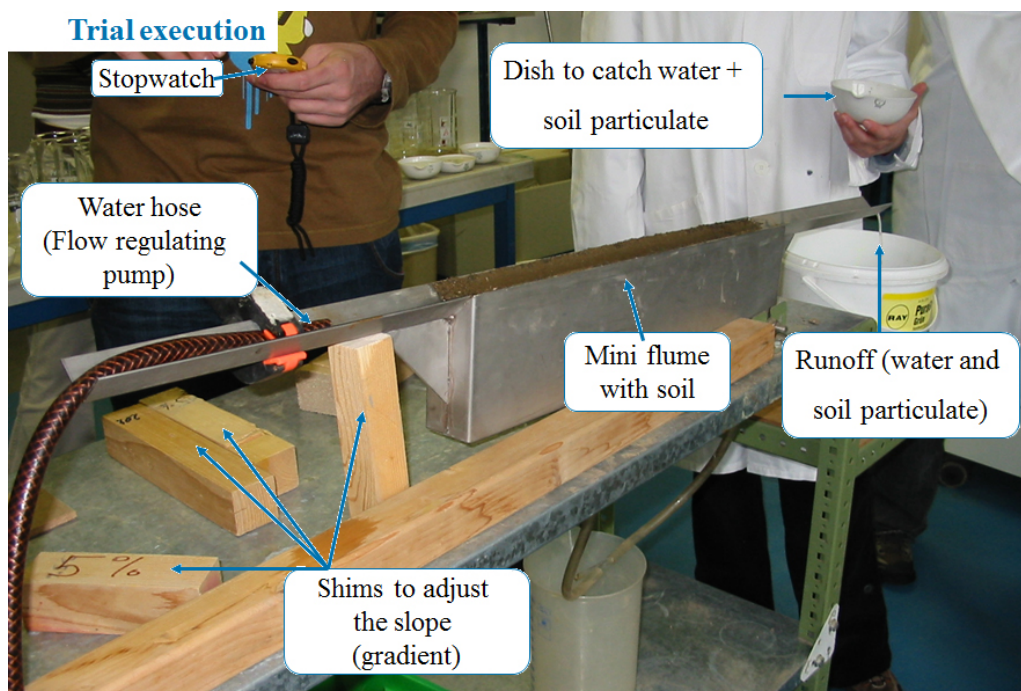
Calculation template for analyzing the mini flume trial

Accompanying material: Presentation documents and instructions for implementation

Description of the building block

Laboratory experiment “Mini Flume”

The physical model serves to emulate striation erosion on incline surfaces with bare soil. Slope and drainage can be varied. The experiment illustrates the relations between soil degradation and various influencing variables.



Instructional video

The preparatory instructional video can be shown as an introduction or in place of the trial.

Evaluation "Mini Flume" – Calculation template

A calculation example and a template are available for the analysis of the experiment.

Provided material

Complete presentation documents (available as PowerPoint Presentation and pdf file) for the presenter

Instructions for implementing the building block into the course

Application during the course

The use of this building block is explained in the instructions for implementation and can be individually adjusted to the course.

The following agenda is recommended (see presentation documents):

Introduction to the topic of erosion

Introduction to the mini flume experiment, including picture series

Laboratory experiment "Mini Flume"

Showing of film and/or trial (max. group size 10 Persons)

Analysis of mini flume

Conclusion and discussion

Aha-effect for students

The combination of theory and application allows students a broad insight into the topic. Achieved through this is awareness for the significance and possibilities of erosion control. This understanding is essential to the sustainable protection of soil as a resource.

Teaching Tools & Methods



Mini-project



Written material



Video



formteaching_experiment

Contact details for borrowing physical devices

IHLW:
+43-1-47654-5450
ihlw-office(at)boku.ac.at

Learning Outcomes

- Acquisition of knowledge (soil erosion through water, erosion protection measures)
- Fostering awareness (sustainable handling of soil as a resource)

Relevance for Sustainability

Soil erosion is a natural process, which is intensified by human activities and impacts nearly all soil functions. As a consequence of climate change the danger of soil erosion through water will increase in around 80% of arable land in the EU by 2050 (EEA, 2002). The productivity of soil should therefore be protected and as to the extent possible, restored, insuring that the use rate of this resource should not overtake its regeneration rate.

Related Teaching Resources

No specific previous knowledge / related resources required

Preparation Efforts

Medium

Access

Free

Sources and Links

Instructional video [Mini Flume](#)

Other Links:

[Thematic Strategy for Soil Protection SUMMARY OF THE IMPACT ASSESSMENT \(COM, 2006\)](#)

[Assessment and reporting on soil erosion. Background and workshop report \(EEA, 2002\)](#)

[LfL-Infoblatt „Bodenerosion“ \(german\)](#)

Erosionsversuche in NÖ:

- Moderne Bodenbearbeitungsmethoden und Erosionsschutz (german)
- Konservierende Bodenbearbeitung (german)
- Minimalbodenbearbeitung und Erosionsschutz (german)

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