

Risk Management Center Training

DLS-213

Paleoflood Training



US Army Corps
of Engineers®
Dam and Levee
Safety Programs

Course Overview

Paleoflood analysis is the application of the science of paleohydrology for characterizing flood hazards on rivers to critical infrastructure such as dams, levees, and other flood protection works. Characterizing the magnitude and timing of large floods that occurred prior to systematic streamflow gage records can reduce uncertainties in flood frequency estimates for dam and levee safety risk assessments.

Learn how to apply the scientific principles of paleohydrology to flood-frequency analyses. The course includes classroom introduction to basic and intermediate concepts for incorporating paleoflood information into hydrologic loading assessments. The course also includes field data collection as input for analysis and application to hydrologic characterizations. Participants will learn how paleoflood results can improve flow-frequency analyses and thus provide greater confidence in dam and levee safety assessments.

Learning Objectives

By the end of this training course, participants will have the ability to:

- Explain the importance of interdisciplinary paleoflood analyses to improve flow-frequency analyses for dam and levee safety.
- Understand what data to collect, how to do it, and – most importantly – why to collect these data rather than those data.
- Analyze field-based data and develop interpretations and conclusions about the paleoflood chronology.
- Integrate results from relative, correlative, and numerical dating techniques for flood age estimation.
- Estimate flood discharges based on geomorphic and hydraulic analyses.
- Understand the limits and uncertainties of paleoflood analysis, and how to capture uncertainties to better constrain results, interpretations, and conclusions.
- Communicate and defend the results of a paleoflood analysis.
- Apply these results and conclusions to improve long-term hydrologic loading as input to risk analyses.

FEATURES

- Training with USACE experts
- Extensive experiential learning through field-based data collection and guided exercises
- Real-world examples and practical application through hands-on exercises
- Best practices related to paleoflood analysis
- Scholarly literature review

Target Audience

The primary target audience includes geologists, hydrologists, hydraulic engineers, archeologists, risk-assessment leaders, and other technical personnel who are involved or will be involved in performing, reviewing, and utilizing paleoflood analyses for dam and levee safety risk analyses.

Format

This is a three and half day (8 a.m. – 5 p.m.), in-person training course that will include multi-discipline lectures and demonstrations from USACE instructors as well as pre-learning, homework, field-based learning, hands-on individual and group exercises, group discussions, and a final assessment. Students should expect to devote 1 hour of out-of-classroom work before the course and after each day. This is a pilot delivery of this course, so feedback on the course will be encouraged during select discussion times.

Contact & Registration



Lead Instructors

Keith I. Kelson, C.E.G. and Amy LeFebvre, C.E.G.
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Level

Intermediate (200 series)

Courses at this level are devoted to a particular discipline or area of practice. Intermediate courses may require a prerequisite at the fundamental level.



Professional Development Hours (PDH)

34 PDHs



Prerequisites

DLS-213 does not have prerequisite training. However, participants will benefit from attending DLS-104 Best Practices in Dam and Levee Safety Risk Analysis and some graduate-level study in their primary discipline prior to attending.



Course Completion

Participants will receive full PDH credit and certificate of completion if they attend all sessions, actively participate, complete all homework assignments and accompanying questions, pass the final assessment with a score of 70% or higher, and complete the course evaluation.



Registration & More Information

(registration subject to availability of seating and is not guaranteed)

www.rmc.usace.army.mil/training/