



United States  
Department of  
Agriculture

Soil  
Conservation  
Service

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NATIONAL ENGINEERING HANDBOOK, SECTION 3 (Second Edition)  
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SUBJECT: ENG - SECTION 3, SEDIMENTATION

Purpose. To replace Section 3.

Effective Date. Effective when received.

Explanation. All the old chapters have been revised, some chapters renumbered, and some new chapters added.

Filing Instructions. Remove and discard existing Section 3 and replace with enclosed Section 3, Second Edition.

Ordering Instructions. Additional copies may be ordered from Central Supply using order number NEH-003, Second Edition.

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Enclosure

DIST: NEH-003



The Soil Conservation Service  
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# National Engineering Handbook

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Section 3

# Sedimentation

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Chapter 1

# Introduction



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# Chapter 1

## Introduction

### Purpose and Scope

This section of the National Engineering Handbook presents in brief and usable form applications of the principles of geology and hydraulic engineering to the solution of sedimentation problems encountered in programs of the Soil Conservation Service (SCS). These programs and the sedimentation investigations that serve them require a versatile approach.

Section 3 is necessarily limited to aspects of sedimentation that pertain directly to SCS programs. Emphasis is, therefore, given to problems affecting the evaluation of erosion and sediment-storage damages, formulation of programs for reducing these damages, and sediment-storage design criteria for structural works of improvement for the beneficial use, control, and conservation of soil and water resources. References at the end of each chapter list some of the more important literature related to the topic of that chapter.

To help geologists acquire a complete understanding of a problem and make the investigations and computations necessary for a technically sound solution, this section describes typical problems arising in sedimentation investigations and outlines basic considerations and step-by-step procedures for solving them. These examples will help

in training SCS geologists and in maintaining uniform procedures and standards for SCS work.

Knowledge of sedimentation and its application to the planning and operation of SCS programs is relatively new. Insufficient research contributes to uncertainty about approaches to some problems. Although specific examples are not included, possible approaches to these problems are outlined to assist geologists in reaching reasonable solutions. Procedures found to be adequate for use nationally are outlined in detail and can be considered standard for SCS work.

## Responsibilities of SCS Geologists

The primary responsibilities of geologists in SCS programs are sedimentation investigations, damsite explorations, and ground-water investigations. General information, methods, and procedures to be used by geologists are presented in three sections of the *National Engineering Handbook*: Section 3, Sedimentation; Section 8, Engineering Geology; and Section 18, Ground Water.

Section 3 is designed to help geologists select and follow procedures for making sedimentation investigations. Geologists are responsible for making the required investigations in enough detail to provide sound and factual information that supports their recommendations. Depending on the seriousness of the problem, the degree of investigation can range from a brief reconnaissance of the area to detailed measurements of erosion and the effects of sediment.

The objective of this section is to provide general guidance for making sedimentation investigations. Geologists must assemble information through observation, experience, and comparison with similar areas in the vicinity. No fixed method of investigation should be substituted for thinking. When there is doubt about the proper methods of solving sedimentation problems, the advice of the national technical center (NTC) sedimentation geologist should be sought.