STREAM SYSTEMS TECHNOLOGY C

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To Aid in Securing Favorable C

October 1997

Stream Systems Technology Center Launches Internet Website

The Stream Systems Technology Center recently activated a website on the Internet at URL address:

http://www.stream.fs.fed.us

The major purpose of the website is to assist in the timely and efficient access to stream and watershed related information and tools. The site currently contains information about the Stream Systems Technology Center, copies of past issues of ***Stream Notes***, links to water-related websites, and a convenient way to e-mail the staff of the Stream Systems Technology Center. Additional features, including the ability to directly download the latest issue of ***Stream Notes*** and computer software, will be added in the future.

About the Stream Team

One part of the STREAM website explains the purpose of the Stream Team and briefly summarizes major activities, including:

- Improving knowledge of stream systems and processes
- Developing operational tools
- Providing training and technical support to National Forests
- Identifying research needs and priorities.

Specific activities conducted under each of these categories are described in greater detail on the website.

Stream Notes: Quarterly Newsletter

The STREAM website presently gives anyone the ability to browse or download past issues of ***Stream Notes*** published from January 1995 through July 1997. Back issues can be viewed in four modes:
(1) a full graphics version,
(2) thumbnail graphics linked to full graphics,
(3) a text only version, and
(4) a portable document format (PDF) version.

The PDF version allows users to download and print the newsletter in the exact format with which it is printed. Accessing the PDF format requires the Adobe Acrobat Reader which can be downloaded for free from the website. Forest Service users at sites where the new IBM 615 technology is installed are also able to access and print past issues of ***Stream Notes*** using this format. The website includes an index by subject to back issues of ***Stream Notes***. Major

STREAM NOTES *is produced quarterly by the Stream Systems Technology Center, Rocky Mountain Research Station, Fort Collins, Colorado.*

The PRIMARY AIM *is to exchange technical ideas and transfer technology among scientists working with wildland stream systems.*

CONTRIBUTIONS *are voluntary and will be accepted at any time. They should be typewritten, single-spaced, and limited to two pages. Graphics and tables are encouraged.*

Ideas and opinions expressed are not necessarily Forest Service policy. Citations, reviews, and use of trade names does not constitute endorsement by the USDA Forest Service.

Phone: (970) 498-1731
FAX: (970) 498-1660
DG: STREAM:S28A
E-Mail: /s=stream/ou1=s28a@mhs-fswa.attmail.com

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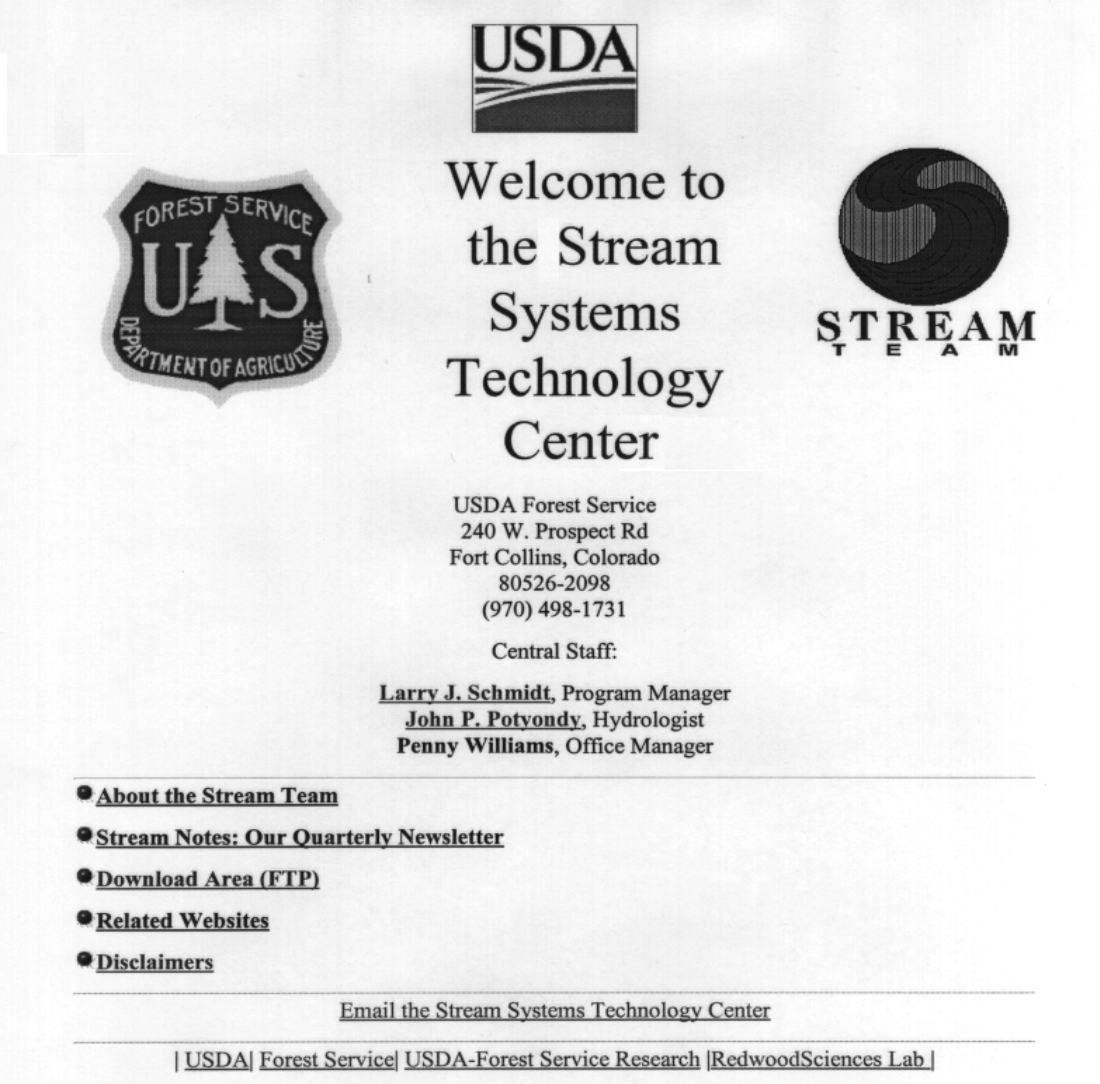


USDA

Welcome to the Stream Systems Technology Center

STREAM TEAM

USDA Forest Service
240 W. Prospect Rd
Fort Collins, Colorado
80526-2098
(970) 498-1731

Central Staff:

Larry J. Schmidt, Program Manager
John P. Potyondy, Hydrologist
Penny Williams, Office Manager

- About the Stream Team
- Stream Notes: Our Quarterly Newsletter
- Download Area (FTP)
- Related Websites
- Disclaimers

Email the Stream Systems Technology Center

| USDA| Forest Service| USDA-Forest Service Research |RedwoodSciences Lab |

subject categories include Ask Doc Hydro, pebble counts, fluvial processes, surveying, and miscellaneous articles.

Related Websites

The STREAM website contains numerous links to related websites. Major categories of links are:

- Hydrology
- Instream Flow and Riparian Issues
- Stream Monitoring
- Fluvial Geomorphology and Fluvial Processes
- Shareware, Freeware and Demo Software.

The Pacific Southwest Research Station's Redwood Science Laboratory is host to the Stream Team website. STREAM worked cooperatively with **Bob Ziemer**, PSW Research Hydrologist, and **Mike Furniss**,

Six Rivers National Forest, Forest Hydrologist, to make the site possible.

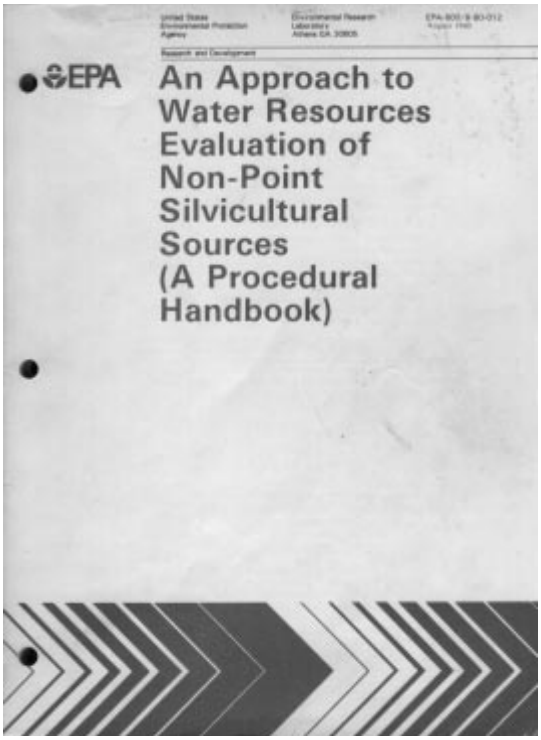
We will strive to update the website and the list of links on a regular basis to serve the needs of our readers. If you know of specific links related to hydrology, streams, geomorphology, hydraulics, riparian management, watershed management, or other water-related issues that you would like to see added to the STREAM website, send us an e-mail using the address at the bottom of the home page. In your message, include the site's URL address and a brief description of the proposed site's content. We reserve the right to make the final judgment regarding whether we think the suggested link provides value and is compatible with the objectives of the STREAM website.

Please check out the website and let us know what you think of it.

WRENSS Procedural Handbook Available on the Internet

Due to the efforts of the Stream Team and Mike Furniss of the Six Rivers National Forest, an out of print EPA document authored by the Forest Service is now available on the World Wide Web. The document is titled ***An Approach to Water Resources Evaluation of Non-Point Silvicultural Sources (WRENSS)***. The WRENSS Handbook provides an analysis methodology that can be used to describe and evaluate changes to the water resource resulting from non-point silvicultural activities. The handbook covers only the pollutant generation and transport processes and does not consider the economic, social, and political aspects of pollution control.

The approach for analysis and prediction of pollution from non-point silvicultural activities is a rational estimation procedure that is useful in making comparative analyses of management alternatives. These comparisons are used in selecting preventive and mitigative controls and require site-specific data.



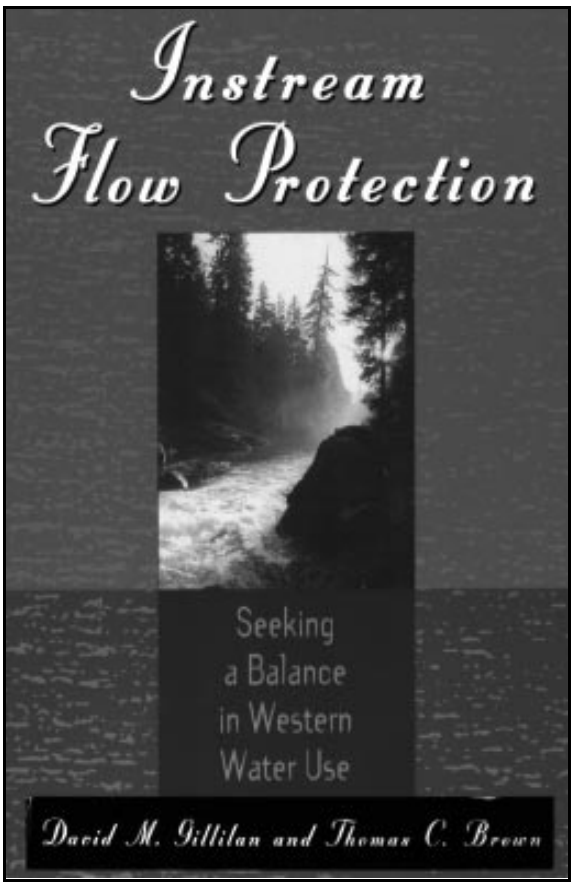
The handbook also contains quantitative techniques for estimating potential changes in streamflow, surface erosion, soil mass movement, total potential sediment discharge, and temperature. Qualitative discussions of the impacts of silvicultural activities on dissolved oxygen, organic matter, nutrients, and introduced chemicals are included.

The handbook is part of the UC Berkeley Digital Library Project. Point your browser to: **"http://elib.cs.berkeley.edu/docs/query.shtml"**. When the fill-in form appears, enter the number "**1790**" where it says "ID _____ UCB Digital Library ID number" and click the Search button.

Instream Flow Protection: Seeking a Balance in Western Water Use

Many people consider instream flow protection a critically important environmental, economic, and quality of life issue. A recently published book, ***Instream Flow Protection, Seeking a Balance in Western Water Use***, describes what is happening with instream flow protection in the exciting, ever-changing world of river management in the West. Co-authored by David Gillilan, a law student at the University of Colorado and former research associate at Colorado State University, and Thomas Brown, an economist with the Rocky Mountain Research Station, the book discusses the multifaceted issue of instream flows in its full complexity.

Gillilan and Brown acknowledge that streamflows in a vast number of the West's rivers and streams have been severely diminished, even extinguished, as water has been diverted for offstream uses. They trace the history of development in the West, noting that the use and development of water has in fact been the foundation of the region's economic and population growth. In the course of that development, legal systems were developed to protect the offwater uses of cities, farms, and industry at the expense of instream water uses for fish and wildlife, recreation, aesthetics, and other environmental purposes. As conditions, needs, and values changed over time, water for instream flows is increasingly valued by a shifting population that is increasingly urban, is mobile, and has a higher standard of living than the traditional rural population. To keep up with this change, legal systems and institutions need to change to deal with a reallocation of water use between instream and offstream uses.



Granted with permission from ***Instream Flow Protection***, David M. Gillilan and Thomas C. Brown, Copyright 1997 Island Press. Published by Island Press, Washington, DC and Covelo, CA.

Gillilan and Brown seek to provide readers with a comprehensive understanding of the many issues surrounding instream flows, and to shed new light on a poorly understood but very important natural resource topic. In their view, conflicts occur not only because of differences in values, but also due to basic misperceptions and confusion over the fundamental facts of instream flow protection. This book is not an impassioned plea arguing for instream flow protection. Instead, the book emphasizes the complex choices that must be weighed in seeking a balance among competing values and interests and provides essential background for a reasoned understanding of the issue.

Each chapter of ***Instream Flow Protection*** focuses on a particular aspect of the instream flow debate. The book provides a short history of water use in the West, the development of water law, and common instream uses of water.

Summaries of quantification methods for determining instream flow needs include the standard approaches for fisheries and recreation as well as those appropriate for riparian vegetation and channel maintenance flow needs.

In discussing the general topic of how much water should be left in streams, the authors go to great lengths to point out that the conflict over instream flow is not just between instream and offstream uses, but that instream uses often conflict with each other. They point out that leaving enough water in streams to meet some instream needs will not automatically meet other instream flow needs.

> "The law is a mechanism for getting things done, for accomplishing the purposes of society, for requiring some things and forbidding others. If the people of the United States or of a state desire to keep water in a stream or to put it back in a stream a law can be framed that will do the job."
>
> *- Frank Trelease, 1976*

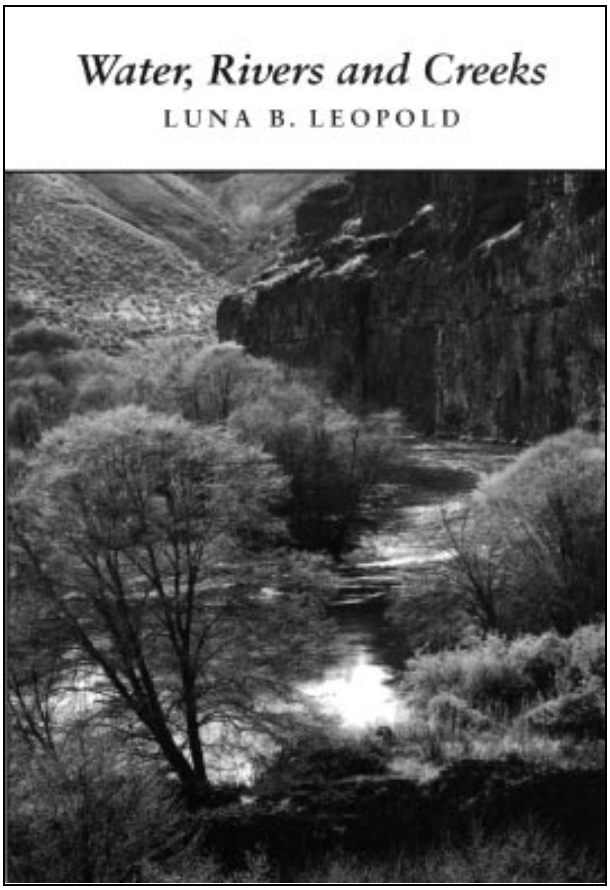
Much of the book covers various legal, physical, contractual, and administrative methods available to keep water in streams. The book contains excellent reviews and up-to-date summaries of state instream flow laws, policies, and administrative procedures as well as the diverse federal authorities and approaches for protecting instream flows. Especially useful are discussions of federal reserved and nonreserved water rights, the administrative programs of various agencies, and the role of major environmental legislation pertaining to hydropower, endangered species, clean water, wild and scenic rivers, and wilderness as they pertain to instream flow protection.

The book contains an excellent chronology and explanations of attempts by the Forest Service to obtain instream flows for channel maintenance purposes on the national forests. In addition to discussing this issue in the context of federal reserved water rights, Gillilan and Brown provide interesting analysis and discussion of the Forest Service's special use permitting process and the current debate over this approach as an alternative way to assure instream water for national forest purposes.

This book is a timely analysis of the instream flow issue and a reservoir of current and background information of value to anyone interested in understanding the instream flow debate. It discusses the values that are at odds and educates the reader about various legal, administrative and other tools available to assure instream flow protection. The book provides both an easy to read survey of instream flow issues as well as a richly annotated and footnoted research work for those interested in more detail about any of the issues. Anyone wanting an up-to-date understanding of instream flow protection, where we are, how we got there, and how society might achieve balance among competing water uses in the future is encouraged to read this book.

Instream Flow Protection ($30 paper; $50 cloth) is available from Island Press, a nonprofit organization whose principle purpose is the publication of books on environmental issues. For more information or to purchase a copy of the book, contact Island Press directly at 1-800-828-1302, info@islandpress.org (e-mail), or www.islandpress.org (website).

Water, Rivers and Creeks



Luna Leopold has brought together more than 40 years of experience in his latest book, ***Water, Rivers and Creeks***. The book, a nontechnical primer on hydrology and water resources, is an expanded and reorganized version of an earlier book, ***Water-A Primer***, originally published in 1974, that has been out of print for many years.

The newly revised edition of ***Water, Rivers and Creeks*** is intended for the general public, students of environmental studies, legislators, policy makers, and others interested in the use, control and management of water. However, even technical specialists, including hydrologists, should find the book an excellent review of the subject. If you are looking for a concise, well written review of what you learned in your college hydrology and geomorphology classes, this 185 page book is for you.

Leopold's writing style makes for easy reading and he has a knack for explaining complicated subjects in an understandable manner. Professor David Freyberg of Stanford University aptly describes the book as a "delightful little book. I found myself marveling at Dr. Leopold's ability to pull so much together so succinctly."

Water, Rivers and Creeks is divided into two parts. Part 1, "Hydrology and Morphology" is the technical part of the book. It contains chapters on precipitation, infiltration, groundwater, surface water, formation and maintenance of the river channel, and the relationship between rivers and vegetation. Part 2, "The Water Resource and Its Management," discusses various aspects of water management, including water supply, water use, water availability and quality, water treatment, and the relation between land management and water.

Water, Rivers and Creeks ($30 hard cover) is published by University Sciences Books, 55D Gate Five Road, Sausalito, CA 94965. For more information or to purchase a copy of the book, contact University Science Books directly at (415) 332-5390 (telephone) or (415) 332-5393 (FAX).

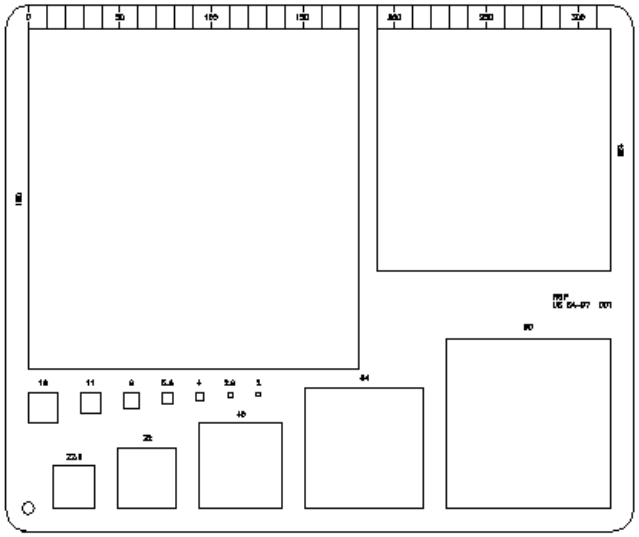
Purchasing A Gravelometer

The US SAH-97 is a hand-held device used to grade or measure gravel and small cobble size bed sediments in the field. Generic names are gravelometers, gravel templates, and pebblemeters.

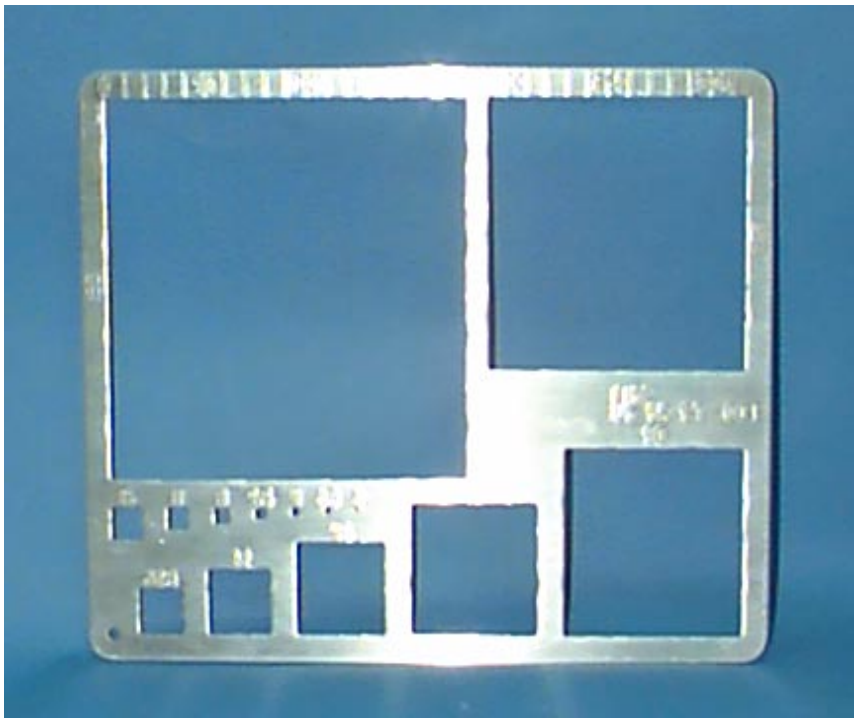
The unit is constructed from 1/8 inch thick 6061 aluminum alloy and has overall dimensions of 11 by 13.5 inches. The US SAH-97 has 14 square holes of common sieve sizes (1/2-phi unit classes) ranging from 2 mm to 180 mm. Specific sieve sizes are 2, 2.8, 4, 5.6, 8, 11, 16, 22.6, 32, 45, 64, 90, 128, and 188 millimeters in size.

There is also a scale along one side that can be used to measure up to 310 mm. The scale is in 10 mm increments.

The hand-held size analyzer effectively produces the same results as sieving.



Drawing of the US SAH-97 Sediment Size Analyzer
Federal Interagency Sedimentation Project



Photograph of the US SAH-97 Sediment Size Analyzer

The US SAH-97 (part number 011000) sells for $30.00 plus a shipping and handling charge of $5 for individual units.

The US SAH-97 can be ordered from the Federal Interagency Sedimentation Project (FISP) by calling (601) 634-2721. Federal offices may use the Government VISA card for payment. FISP will accept purchase orders from State and Local government offices (this includes State schools).

Contributed by:
Wayne O'Neal, Chief,
Federal Interagency
Sedimentation Project

STREAM NOTES

STREAM SYSTEMS TECHNOLOGY CENTER
USDA Forest Service
Rocky Mountain Station
240 West Prospect
Fort Collins, CO 80525

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October 1997

IN THIS ISSUE

STREAM NOTES

Editorial Policy

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items of general interest. YO
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