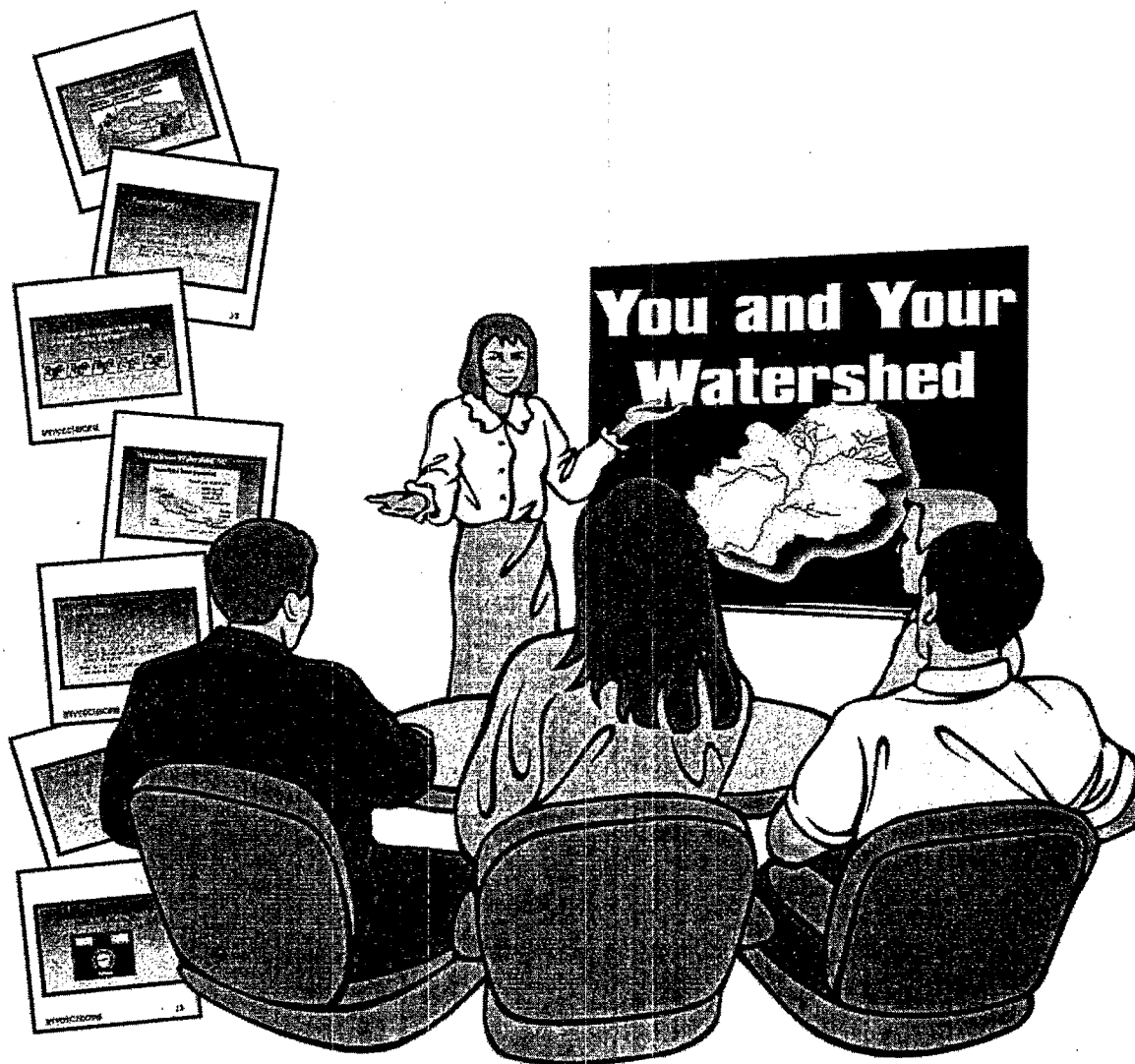
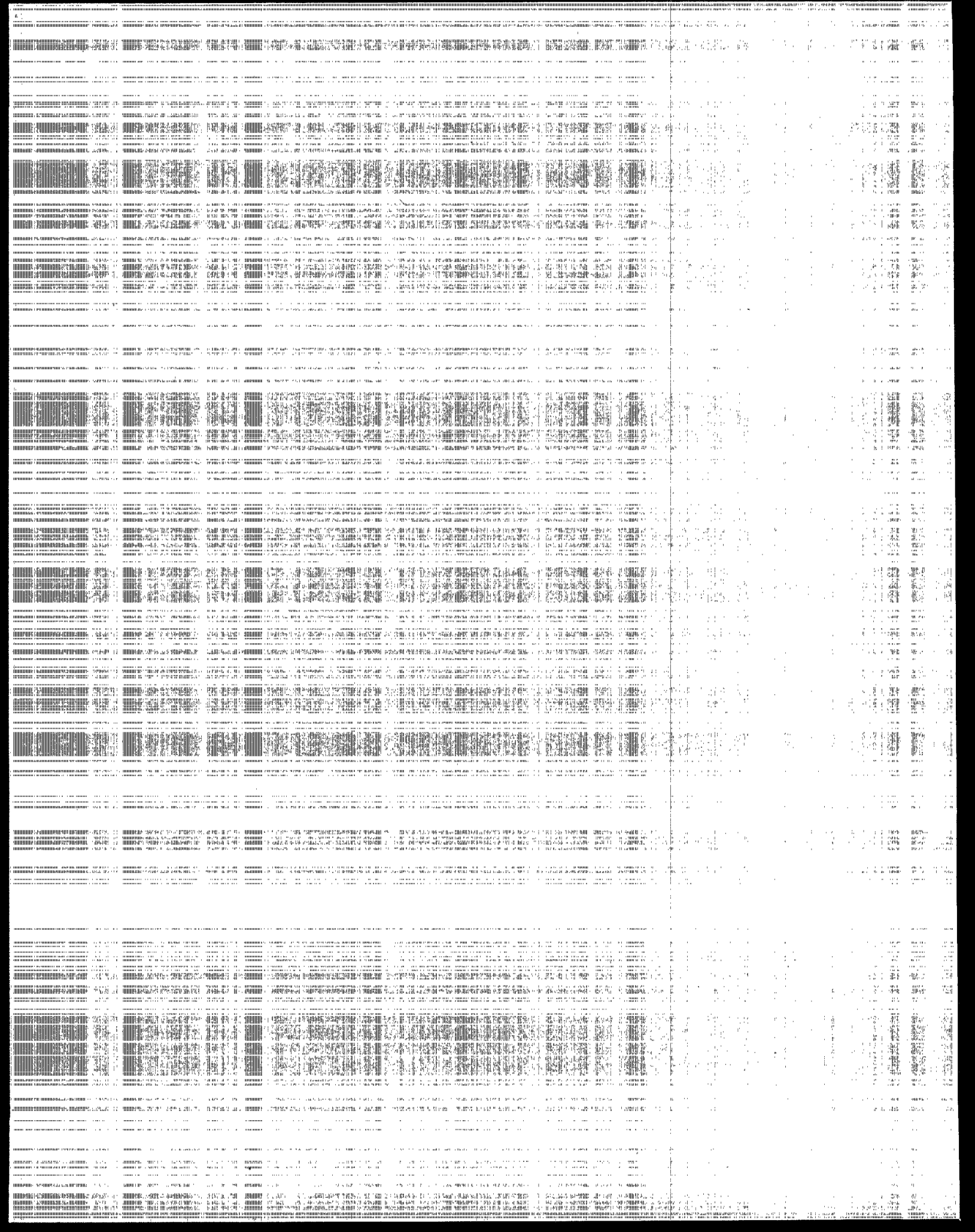




Inventory of Watershed Training Courses





The Watershed Academy



• *Information Transfer Series, No. 7* •

Inventory of Watershed Training Courses



Assessment and Watershed Protection Division
Office of Wetlands, Oceans and Watersheds
U.S. Environmental Protection Agency (4503F)
401 M Street, SW
Washington, DC 20460

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Notice:

This document has been extensively reviewed by individuals responsible for training programs, but its contents do not necessarily reflect the views or policies of the U.S. Environmental Protection Agency or any other organization mentioned within. Mention of trade names or commercial products or events does not constitute endorsement or recommendation for use.

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To obtain a copy free of charge, contact:

National Center for Environmental Publications and Information (NCEPI)

Phone: 513-489-8190

Fax: 513-489-8695

This EPA report is available on the Internet at:

<http://www.epa.gov/owow/watershed/wacademy/its.html>

Preface

More and more environmental programs in recent years have structured themselves around watersheds. The U.S. Environmental Protection Agency (EPA) Office of Water is among the many that have promoted watershed approaches and witnessed their successes all around the country. Watershed approaches provide a flexible coordinating framework that focus resources on targeted problems within specific drainage basins. The guiding principles of watershed approaches include stakeholder partnerships, a geographic focus, and sound science.

On February 14, 1998, the President released the Clean Water Action Plan, a document that outlines actions to protect public health and restore our nation's precious waterways by setting strong goals and providing states, communities, farmers, and landowners the tools and resources to meet them. It charts a new course emphasizing collaborative strategies built around watersheds and the communities that sustain them. Specifically, the Plan proposes increased protection from public health threats posed by water pollution; more effective control of polluted runoff; and promotion of water quality protection on a watershed basis.

EPA's Watershed Academy, located in the Office of Water, was formed to assist in the protection of water quality on a watershed basis by offering training courses and developing educational materials. The Academy provides training on watershed processes, functions, and management techniques, as well as publicizes watershed-related training programs developed by others. In addition, the Academy prepares watershed-related documents through its Information Transfer Series, provides watershed management facilitation services to help states and tribes implement watershed approaches, and has developed the Academy 2000 Internet-based training modules.

The Watershed Academy was identified in one of the key action items in the Clean Water Action Plan to serve as a focal point to promote watershed-related training courses. This key action item states that "federal agencies will complete an inventory of watershed training programs. Relevant offerings will be promoted through the Watershed Academy and through other means as appropriate." The *Inventory of Watershed Training Courses* was developed in response to this action item.

This Inventory has a number of purposes:

- to help readers find training/educational opportunities on watershed protection
- to provide summaries and contact information for training sources consistent with the main principles of watershed approaches
- to inform watershed managers about federal and non-federal courses that are consistent with the above mentioned watershed approaches
- to be presented in a format that is easily updated, or able to be stored on electronic bulletin boards or home pages.

This document is part of the Watershed Academy's Information Transfer Series. Other documents included in the Information Transfer Series include:

- no. 1: *Watershed protection: a project focus* (EPA841-R-95-003)
- no. 2: *Watershed protection: a statewide approach* (EPA841-R-95-004)
- no. 3: *Monitoring consortiums: a cost-effective means to enhancing watershed data collection and analysis* (EPA841-R-97-006)
- no. 4: *Land cover digital data directory for the United States* (EPA841-B-97-005)
- no. 5: *Designing an information management system for watersheds* (EPA841-R-97-005)
- no. 6: *Information management for the watershed approach in the Pacific Northwest* (EPA841-R-97-004)
- no. 7: *Inventory of watershed training courses* (EPA841-D-98-001)
- no. 8: *Statewide watershed management facilitation* (EPA841-R-97-011)
- no. 9: *Watershed approach framework* (EPA840-S-96-001)
- no. 10: *Top 10 watershed lessons learned* (EPA840-F-97-001)
- no. 11: *Catalog of Federal funding sources for watershed protection* (EPA841-B-97-008)
- no. 12: *Catalog of watershed training opportunities* (EPA841-B-98-001)

We would like to thank everyone who contributed to the success of this document. We received much support and assistance from several interagency training workgroups, an EPA training workgroup, the private sector, and others. Their time and effort were invaluable in assuring the accuracy of the information presented.

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Appendix A Course Submittal Forms A1

Introduction

This document provides one-page summaries of 180 watershed-related training courses offered by federal and state agencies, as well as resource professionals in the private sector. It was developed in response to a key action item listed in the Clean Water Action Plan that states "federal agencies will complete an inventory of watershed training programs. Relevant offerings will be promoted through the Watershed Academy and through other means as appropriate." The inventory includes short courses (1 day-2 weeks) offered for resource professionals. It does not include courses offered by universities as part of their curricula. Also, the courses listed include on-site training as well as several distance learning modules available on the Internet.

This Inventory has a number of purposes:

- to help readers find training/educational opportunities on watershed protection
- to provide summaries and contact information for training sources consistent with the main principles of watershed approaches
- to inform watershed managers about federal and non-federal courses that are consistent with watershed approaches
- to be presented in a format that is easily updated, or able to be stored on electronic bulletin boards or home pages.

The Inventory contains course summaries that provide the reader with enough information to determine their level of interest and who to contact for further information—much like a college course catalogue. To develop the Inventory, we surveyed available watershed training courses within and outside federal government. The complete document is located on the Watershed Academy website at <http://www.epa.gov/owow/watershed/wacademy/its.html>. If you have information on a watershed-related training course not included in this Inventory, please submit it to the Inventory by filling out a submittal form located in Appendix A.

How To Use This Document

To develop the course summaries listed in this document, the EPA Office of Water researched available training courses within and outside of the EPA, including state, private, and other federal organizations. This Inventory presents general course and contact information.

Each course summary includes a brief description of the course, contact information for follow up, sponsoring organization and general guidelines on schedules and recommended target audiences.

Training courses are first separated by the sponsoring agency or organization. Under each of these headings the courses are further divided into the following four categories:

- General Watershed Courses (includes general survey or overview courses)
- Water Quality Courses (includes physical, chemical, geological processes)
- Ecosystem Management Courses (includes biological and habitat issues)
- Regulatory Courses (includes training to satisfy various regulatory needs)

- Data Collection and Management Courses (includes GIS and field sampling procedures)
- Outreach and Public Involvement Courses (includes outreach, stakeholder, partnership issues)

Please refer to the Table of Contents or the Index to scan the categories you are interested in and then turn to the relevant page.

Characterization of Abandoned Mine (1703-14)



Sponsoring Organization Bureau of Land Management

Target Audience Hazardous materials coordinators and environmental specialists involved in site evaluations.

Attendance Restrictions Priority to BLM & USFS employees.

Generally When/Where Offered Denver, CO.

Duration 5 days

Cost to Attend \$400 for non-BLM enrollment.

Contact Name Bob Sykes

Phone/Fax 602-906-5556/602-906-5577

E-mail rsykes@tc.blm.gov

Mailing Address BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517

Internet Information None

Brief Description Course is being designed to focus on abandoned mine lands. Participants will be able to perform in-house, low cost, environmental characterizations using state-of-the-art field techniques and interpretative tools. Prerequisite: Current OSHA/HAZWOPER 40 hours training or current HAZWOPER 8 hours refresher.

Key Words reclamation, contaminants, sampling, groundwater, BLM

Professional Resource Management (7000-01)



Sponsoring Organization	Bureau of Land Management
Target Audience	Personnel who routinely work with vegetative, wildlife, soil, water and air resources or deal with livestock or wildlife issues. Individuals who require a familiarity with soil, water, air, wildlife, vegetation and watershed resources.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	National Training Center, Phoenix, AZ.
Duration	3 weeks
Cost to Attend	To be determined.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrampf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	The focus will be on the integration of rangeland, wildlife, and soil, water and air resource activities within an interdisciplinary, ecosystem base management atmosphere. Students will learn how to identify critical data needs and then collect, analyze and interpret the data. The course teaches various styles of data presentation for technical uses, briefing papers and public awareness.
Key Words	watershed, monitoring, inventory, standards and guidelines, management actions, soil, water, air, rangeland management, BLM, NTC

Placer Reclamation for Wetlands & Environment (3000-62)



Sponsoring Organization	Bureau of Land Management
Target Audience	BLM, USFS, and NPS geologists, mining engineers, hydrologists, civil engineers, and other technical personnel working in rehabilitation of watersheds and streams.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	Missoula, MT.
Duration	2 weeks
Cost to Attend	TBD
Contact Name	Matt Shumaker
Phone/Fax	602-906-5526/602-906-5577
E-mail	mshumaker@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Placer Reclamation will cover topics essential to successful placer-mined stream channel restoration, without excessive duplication of other courses. There will be advance reading assignments, field trips, and the internal Saturday will be a work day. Topics covered include: (1) channel morphology and sedimentation, (2) placer geology highlights, (3) placer mining and reclamation concurrent with mining, (4) pre-site assessment, (5) restoration and elevation of water table, (6) re-establishment of wetlands, (7) dirtwork planning, (8) restoration planning, (9) bank stabilization, (10) methodology, (11) subsurface dams, (12) sand pumps, (13) natural vs. synthetic geotextiles, (14) compaction, (15) grading plans, and (16) cost estimation.
Key Words	reclamation, placer, restoration planning, bank stabilization, channel morphology, sedimentation, natural vs. synthetic geotextiles, BLM

Riparian Management (1737-01)



Sponsoring Organization Bureau of Land Management

Target Audience Employees involved in riparian assessment and management.

Attendance Restrictions Priority to BLM & USFS employees.

Generally When/Where Offered As needed.

Duration 7 days

Cost to Attend \$700 for non-BLM enrollment.

Contact Name Russ Krapf

Phone/Fax 602-906-5503/602-906-5577

E-mail rkrapf@tc.blm.gov

Mailing Address BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517

Internet Information None

Brief Description Recognition of the natural processes, functions, and values needed to protect and restore riparian/wetland systems. Course provides: objectives for planning documents, resource-related management strategies and actions, monitoring and evaluation methods, and an interdisciplinary approach to developing a plan for riparian management.

Key Words habitat, wetlands, surface water, riparian, monitoring, management, planning federal, BLM, USFS, NTC

Watershed Components and Processes (1730-24)



Sponsoring Organization	Bureau of Land Management
Target Audience	Resource specialists with related ecosystems responsibilities.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	As needed.
Duration	9 days
Cost to Attend	\$700 for non-BLM enrollment.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	An overview of the components and processes of watershed management. Includes discussion of case studies of selected watersheds, integration of natural and human resources in watershed descriptions, contributions of soil/water/air specialists to interdisciplinary teams, and the benefits and limitations of watershed data sources.
Key Words	ecosystem and watershed management, land use, watershed characterization, data, planning, federal, USFS, BLM, NTC

Watershed Rehabilitation I - Uplands (7000-08)



Sponsoring Organization	Bureau of Land Management
Target Audience	Resource specialists from any natural resource management agencies.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	As needed.
Duration	5 days
Cost to Attend	\$700 for non-BLM enrollment.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	An introduction to the basic philosophies, principles, and techniques of upland watershed protection and rehabilitation. Students conduct a watershed evaluation and prepare a watershed rehabilitation plan.
Key words	watershed, restoration, management, planning, federal, BLM, NTC, USFS

Stream Dynamics and Channel Design for Reclamation and Restoration (7000-11)



Sponsoring Organization Bureau of Land Management

Target Audience Individuals who will be responsible for designing, implementing, managing, and reviewing stream restoration (channel rehabilitation) projects.

Attendance Restrictions Priority to BLM, NRCS & USFS employees.

Generally When/Where Offered As needed.

Duration 9 days

Cost to Attend \$700 for non-BLM enrollment.

Contact Name Russ Krapf

Phone/Fax 602-906-5503/602-906-5577

E-mail rkrapf@tc.blm.gov

Mailing Address BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517

Internet Information None

Brief Description An introduction to the basic philosophies, principles, and techniques of stream channel protection and rehabilitation. Prepare designs that repair or maintain stream dynamics to sustain stream corridor ecosystems based on an understanding of the function of stream corridor ecosystems and recognizing existing or potential problems.

Key words surface water, channel restoration, watershed restoration, management, planning, federal, BLM, NTC, USFS

Erosion Prediction: Revised Universal Soil Loss Equation (7000-14)



Sponsoring Organization	Bureau of Land Management
Target Audience	Soil scientists, hydrologists, GIS specialists.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	As needed.
Duration	5 days
Cost to Attend	\$700 for non-BLM attendees.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Examine erosion processes and their relationships to prediction modeling. Students will become familiar with RUSLE automated prediction systems, will build a database to fit specific situations, interpret soil, vegetation, and hydrologic type data, and review techniques for resource collection and use.
Key Words	data analysis, modeling, watershed, nonpoint source pollution, federal, BLM, NTC, USFS

Ground Water Hydrology (7000-18)



Sponsoring Organization	Bureau of Land Management
Target Audience	Engineers, geologists, hydrologists, resource specialists involved in ground water resources.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	As needed.
Duration	8 days
Cost to Attend	\$1,000 for non-BLM attendees.
Contact Name	Russ Krapf or Steve Fechner
Phone/Fax	602-906-5503 or 602-906-5604/602-906-5577
E-mail	rkrampf@tc.blm.gov or sfechner@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Determine ground water environment and interpret data for resource action plans. Review composition and principles of ground water chemistry. Recognize impact on ground water of energy sources, minerals and hazardous materials. Use ground water prediction models. Design and construct water wells.
Key Words	groundwater, ground water prediction models, wells, BLM, NTC

Non-point Source Pollution Control on Federal Lands (7000-09)



Sponsoring Organization	Bureau of Land Management
Target Audience	Resource specialist teams; participation from the local community, colleges and other state or federal agencies.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	As needed.
Duration	5 days
Cost to Attend	\$500 to non-BLM enrollment.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	An interagency course that covers responsibilities for meeting water quality requirements. Impacts of the Clean Water Act on federal land management agencies. Successes of best management practices.
Key Words	BMP, Clean Water Act, water quality, planning, BLM, NTC

Rangeland Health Assessment (1730-37)



Sponsoring Organization	Bureau of Land Management
Target Audience	Resource specialist teams; participation from the local community, colleges and other state or federal agencies.
Attendance Restrictions	Priority to BLM & USFS.
Generally When/Where Offered	As needed.
Duration	2.5 days
Cost to Attend	None
Contact Name	Kelly Sparks, Julie Yocom, or Russ Krapf
Phone/Fax	602-906-5519, 602-906-5507, or 602-906-5503/602-906-5577
E-mail	ksparks@tc.blm.gov, jyocom@tc.blm.gov, or rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	N/A
Brief Description	<p>A visualization and communication process qualitatively assessing warning signs for rangeland health problems: (1) Biotic and abiotic indicators, (2) Rangeland thresholds and health concepts, (3) Assessments tools at the local level, (4) Selecting the appropriate ecological "reference area," and (5) Includes assessment exercises at two field sites.</p> <p>Course Objectives: (1) Learn how to use (or modify) existing monitoring/inventory data to assess rangeland health. (2) Learn a procedure to qualitatively assess rangeland health to be used to educate the public and fill in the information gaps or rangeland health that are not provided by existing monitoring and inventory data. (3) Improve understanding of the relationship between rangeland health assessment and the Standards for Rangeland Health and Guidelines for Grazing Management.</p>
Key Words	rangeland health, standard and guidelines, grazing management, BLM, NTC

Riparian/Wetland Ecological Site Inventory (1737-04)



Sponsoring Organization	Bureau of Land Management
Target Audience	Interdisciplinary teams consisting of a soil scientist, hydrologist, vegetation specialist, and wildlife biologist. Managers are encouraged to attend as part of their local team. Teams may have representatives from other agencies.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	When requested.
Duration	5 days
Cost to Attend	\$750 for non-BLM enrollment.
Contact Name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrampf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Use of the Ecological Site Inventory (ESI) method by interdisciplinary teams to evaluate riparian and upland sites. Team members learn roles and responsibilities in the ESI process. They learn to recognize, characterize, and interpret riparian and upland ecological sites using the ESI.
Key Words	riparian classification, inventory, interdisciplinary teams, and ecological site inventory, BLM, NTC

Role of Microbiotic Soil Crusts in Range Health (1730-41)



Sponsoring Organization	Bureau of Land Management
Target Audience	Ecologists, biologist, range specialists, and botanists.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	National Training Center, Phoenix, AZ.
Duration	5 days
Cost to Attend	\$500 for non-BLM enrollment.
Contact name	Russ Krapf
Phone/Fax	602-906-5503/602-906-5577
E-mail	rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Describes the types of soil crusts and their importance in maintaining rangeland and soil health. Identifying soil crusts, importance of soil crusts and effects of management actions on soil crusts will be covered.
Key Words	microbiotic soil crusts, management, ecological and hydrological roles of microbiotic crusts, BLM, NTC

Aquatic Resource Monitoring for Natural Resource Specialists



Sponsoring Organization	Bureau of Land Management and U.S. Forest Service
Target Audience	Water resource technical personnel.
Attendance Restrictions	Offered once a year; limited to 20 people. Additional courses will be scheduled on demand.
Generally When/Where Offered	Fall, Utah State University, Logan, UT.
Duration	1 week
Cost to Attend	\$675 per person
Contact Name	Mark Vinson
Phone/Fax	435-797-2038/435-797-1871
E-mail	Aqua@cc.usu.edu
Mailing Address	BLM Buglab, Fish and Wildlife Department, Utah State University, Logan, UT 84322-5210
Internet Information	http://www.zmariner.com/fs/ce/index.html and http://www.usu.edu/~buglab/main.htm
Brief Description	This course introduces the conceptual framework needed to design an aquatic monitoring program. Legal mandates requiring land management agencies to monitor the effects of their activities will be reviewed along with the ecology of aquatic biota (macroinvertebrates, warm and cold water fishes, algae/macrophytes), the dynamics of aquatic ecosystems, and the basic principles of hydrology, fluvial geomorphology, and limnology. The course combines lectures and field work to familiarize the students with sampling equipment and techniques, the analysis of biological and physical data. Attendees use the information to develop an aquatic monitoring program.
Key Words	surface water, limnology, aquatic ecology, monitoring, watershed, geomorphology, watershed characterization, sampling, data analysis, BLM, USFS

Ecological Approaches to Land Management (1730-17)



Sponsoring Organization	Bureau of Land Management and U.S. Forest Service
Target Audience	Resource specialists, interdisciplinary teams (50 percent USFS and other agency participation).
Attendance Restrictions	None
Generally When/Where Offered	Yearly, National Training Center, Phoenix, AZ.
Duration	5 days
Cost to Attend	\$600 for non-BLM enrollment.
Contact Name	Julie Yocom, Kelly Sparks, or Russ Krapf
Phone/Fax	602-906-5507, 602-906-5519, or 602-906-5503/602-906-5577
E-mail	Jyocom@tc.blm.gov, ksparks@tc.blm.gov, or rkrapf@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Fundamental ecological principles on the nature and distribution of rangeland ecosystems. Special emphasis on ecological assessments that integrate social, economics, biological and physical attributes at the watershed or other scales. Given a foundation of ecological principles and management strategies, the participant can work as a team member to: develop ecological assessments that integrate social, economic, biological and physical attributes at the watershed level and other scales. Integrate assessments into the planning process at various scales. And recommend monitoring methods that measure the success of management actions.
Key Words	watershed, ecological assessments, scales, planning, BLM, NTC

Environmental Site Characterization I (1703-03)



Sponsoring Organization	Bureau of Land Management
Target Audience	Hazardous materials coordinators and specialists with supporting roles in site screening and characterization and those personnel that are responsible for sampling the different environmental medias.
Attendance Restrictions	Priority to BLM & USFS employees.
Generally When/Where Offered	National Training Center, Phoenix, AZ.
Duration	2 weeks
Cost to Attend	\$700 for non-BLM enrollment.
Contact Name	Bob Sykes
Phone/Fax	602-906-5556/602-906-5577
E-mail	rsykes@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Hazardous material site screening and characterization and how best to measure, characterize, and predict contaminant movement. Information presented is applicable to the Phase I Environmental Site Assessment process. (1) Assessing physical and chemical parameter in potentially contaminated environmental media. (2) Determining sampling needs and site management plan. (3) Contaminant fate and transport. (4) Field chemical analysis—measurements, characterization, and prediction.
Key Words	contaminant transport, characterization, prediction, environmental assessment, BLM

Advanced Placers (3000-76)



Sponsoring Organization	Bureau of Land Management
Target Audience	BLM, USFS and NPS mineral examiners. Others as space is available, case by case.
Attendance Restrictions	None
Generally When/Where Offered	As needed.
Duration	2.5 weeks
Cost to Attend	Estimated at \$2,000 (this estimate is subject to change).
Contact Name	Matt Shumaker
Phone/Fax	602-906-5523/602-906-5577
E-mail	mshumaker@tc.blm.gov
Mailing Address	BLM-National Training Center, 9828 North 31st Ave, Phoenix, AZ 85051-2517
Internet Information	None
Brief Description	Upon completion of the class, students will be able to: (1) describe placer reclamation methods and evaluate their application, (2) apply current policy and case law to precious metal placer examinations, and (3) evaluate a precious metal placer deposit using modern equipment and applicable cost estimation methods. Intermediate to expert instruction in examination of precious metal placers, and review of reports that evaluate them. (1) Reclamation methods, (2) Mining law and case law developments, (3) Mining methods, (4) Avoiding pitfalls in mapping and sampling, (5) Cost estimation for operations and reclamation, (6) Placer re-mining as a method of watershed rehabilitation, (7) Sediment control and settling, and (8) Hands-on field exercises. Course will meet continuing education requirements for Certified Review Mineral Examiners (CRMEs).
Key Words	reclamation, placer examinations, certified review mineral examiners (CRMEs), mining methods, costs, BLM

PFC Training: Assessing Proper Functioning Condition of Riparian/Wetlands



Sponsoring Organization	Bureau of Land Management and Forest Service
Target Audience	No restrictions.
Attendance Restrictions	Limited to 40 participants per course.
Generally When/Where Offered	Locations and schedules are currently in development.
Duration	1 day classroom; 1 day field application.
Cost to Attend	None
Contact Name	Susan Holtzman
Phone/Fax	503-808-2987/503-808-2469
E-mail	None
Mailing Address	USDA Forest Service, P.O. Box 3523, Portland, Oregon 97208
Internet Information	None
Brief Description	This course presents a process that enables an interdisciplinary team to assess the functional condition, capability and potential of riparian-wetland areas. It is based on the physics of streams, riparian function being the interaction of soil, water and vegetation. Riparian function is indicative of watershed health. This course presents a method to gain site specific knowledge in order to determine realistic and achievable desired future conditions.
Key Words	wetlands, riparian function, Forest Service, USDA, NRCS, federal

Identifying and Controlling Runoff Pollution from Roads, Highways and Bridges (13445)

NHI

Sponsoring Organization National Highway Institute

Target Audience Personnel of federal agencies, contractors, and other individuals who manage erosion control devices on local projects that require basic site selection, design, construction, and maintenance of erosion and sediment control plans. Basic knowledge of design, construction, and maintenance of erosion and sediment control practices would be beneficial.

Attendance Restrictions Target of 30, maximum of 60 participants.

Generally When/Where Offered Determined when course is scheduled.

Duration 1 day (CEU: 0.6 Units).

Cost to Attend \$2,500 (cost to government agencies to host)/\$5,000 (cost to the private sector to host).

Contact Name Al Miller, Course Coordinator, Lynn Cadarr, Course Scheduling, Bill Dowd, Technical Information

Phone/Fax 703-235-0521/703-235-0528/703-366-1580

E-mail al.miller@fhwa.dot.gov, lynn.cadarr@fhwa.dot.gov, william.dowd@fhwa.dot.gov

Mailing Address National Highway Institute, 4600 N. Fairfax Drive, Suite 800, Arlington, VA 22203

Internet Information <http://www.nhi.fhwa.dot.gov>

Brief Description This elementary course teaches management practices to control erosion and sedimentation on highway construction and maintenance projects. Basic methods to identify erosion and sedimentation sources are shown, and then techniques are presented to plan, select, and install the appropriate controls. This course includes the following topics: project planning and site selection, erosion and sediment control devices and their uses, basic mechanism of erosion and sedimentation, development of an erosion and sediment control plan, stormwater and nonpoint source control, construction operations and erosion and sediment control plan implementation, maintenance and inspection of erosion and sediment control devices and regulatory requirements.

Key Words erosion and sediment control practices, nonpoint source control, NHI

Sponsoring Organization	National Highway Institute
Target Audience	Federal, state, local, and private contractor managers, designers, engineers, technicians, and inspectors who are involved with the basic selection, design, construction, and maintenance of erosion and sediment control plans. A knowledge of hydrology and drainage, and a basic understanding of design, construction, and maintenance of erosion and sediment control practices would be beneficial.
Attendance Restrictions	Target of 30, maximum of 60 participants.
Generally When/Where Offered	Determined when course is scheduled.
Duration	2 days (CEU: 1.2 Units).
Cost to Attend	\$3,500 (cost to government agencies to host)/\$7,000 (cost to the private sector to host).
Contact Name	Al Miller, Course Coordinator, Lynn Cadarr, Course Scheduling, Bill Dowd, Technical Information
Phone/Fax	703-235-0521/703-235-0528/703-366-1580
E-mail	al.miller@fhwa.dot.gov, lynn.cadarr@fhwa.dot.gov, william.dowd@fhwa.dot.gov
Mailing Address	National Highway Institute, 4600 N. Fairfax Drive, Suite 800, Arlington, VA 22203
Internet Information	http://www.nhi.fhwa.dot.gov
Brief Description	This course addresses management techniques for controlling erosion and sedimentation on highway construction projects during planning, design, construction, and maintenance. Methods to identify the source of the erosion and sedimentation are presented, including best management practices to insure the current legislative and regulatory requirements of FHWA, EPA, and local governments are met.
Key Words	erosion and sediment management techniques, BMPs, NHI

Sponsoring Organization	National Highway Institute
Target Audience	State DOT personnel who have professional/technical responsibilities relating to highway design, construction, operation, or maintenance activities affecting wetlands. Other federal, state, local government, and industry personnel with related responsibilities may be permitted to attend on a space available basis. A basic understanding of federal regulations concerning wetlands will be helpful. In addition, participants need at least one of the following: (1) experience in the highway project development process; (2) experience in highway project planning and design; (3) experience in natural resources regulation and management; or (4) experience in ecological assessment and mitigation design.
Attendance Restrictions	Limited to 30 participants.
Generally When/Where Offered	2, 3, or 4-day course versions. See Technical Information contact below.
Duration	2 days (CEU: 1.2 Units), 3 days (CEU: 1.8 Units), 4 days (CEU: 2.4 Units)
Cost to Attend	\$3,500 (cost to government agencies to host)/\$7,000 (cost to the private sector to host)-2 days, \$5,000 (cost to government agencies to host)/\$10,000 (cost to the private sector to host)-3 days, \$6,500 (cost to government agencies to host)/\$13,000 (cost to the private sector to host)-4 days.
Contact Name	Al Miller, Course Coordinator, Lynn Cadarr, Course Scheduling, Paul Garrett, Technical Information
Phone/Fax	703-235-0521/703-235-0528/703-366-2067
E-mail	al.miller@fhwa.dot.gov, lynn.cadarr@fhwa.dot.gov, paul.garrett@fhwa.dot.gov
Mailing Address	National Highway Institute, 4600 N. Fairfax Drive, Suite 800, Arlington, VA 22203
Internet Information	http://www.nhi.fhwa.dot.gov
Brief Description	This course provides an overview of wetland regulations and ecology, impact of highways on wetlands, mitigation projects, and methods of assessing wetland functional values. The course is available in three versions, either totally classroom or classroom and field exercises. The classroom only version is a two day presentation, with the emphasis on the HGM (hydrogeomorphic), WET II (Wetland Evaluation Technique), and EPW (Evaluation of Planned Wetland functional assessment techniques. The classroom and field option is available in three and four day versions.
Key Words	wetland regulations, NHI

Permitting Hydrology



Sponsoring Organization	Office of Surface Mining
Target audience	State, federal, tribes, industry, and private citizens concerned about effects of coal mining on the environment.
Attendance Restrictions	None
Generally When/Where Offered	Scheduled in various locations within those states that conduct coal mining.
Duration	3.5 days
Cost to Attend	States and tribes, no cost. Others, depends on meeting certain training criteria.
Contact Name	Sarah Donnelly
Phone/Fax	202-208-2826/202-219-3111
E-mail	None
Mailing Address	Office of Surface Mining, 1951 Constitution Ave, NW, Room #212, Washington, DC 20240
Internet Information	None
Brief Description	Provides information to participants as to data necessary to fulfill the requirements of the Surface Mining Control and Reclamation Act which pertains to the probable hydrologic consequences of mining and reclamation operations. The affects of probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability. This data is necessary for the regulatory authority to determine if mining can be conducted without major damage to the environment. The course also gives the participants a problem to solve which is done during the length of the course based on course data obtained.
Key Words	surface water quantity and quality, overburden/geology, probable hydrologic consequences, material damage standards, and cumulative hydrologic impact assessment, OSM

Interagency—Working at a Watershed Level



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Federal and non-federal partners actively involved in watershed planning and management activities under the auspices of the Corps of Engineers.
Attendance Restrictions	No prerequisites are necessary for this basic course, but environmental sciences course work or experience may significantly assist attendees.
Generally When/Where Offered	Not currently scheduled.
Duration	5 days
Cost to Attend	To be determined.
Contact Name	Joe Pickett
Phone/Fax	256-895-7445/ 256-895-7442
E-Mail	Joseph.C.Pickett@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, the Professional Development Support Center, Attn: CEHR-P-TO, P.O. BOX 1600, Huntsville, AL 35807-4301
Internet Information	None
Brief Description	Purpose of course is to introduce the use of the watershed approach to understanding issues, problems, and opportunities related to water and related land resources. The process of problem solving to allow for connectedness, choices, and change to working at a watershed level is part of the course. This course is an adaption of an interagency course offered through the EPA's Watershed Academy. Focus of this course is on the Corps of Engineers activities which are typically at a larger scale than most community-based watershed efforts. Although a number of the Corps watershed studies or activities are comprehensive in scope, Corps watershed studies frequently have a single or multiple focus involving the restoration of aquatic habitat or damaged environments, flood damage reduction and hazard mitigation, navigation, water allocation, federal land stewardship, and/or regulated activities within the context of the watershed.
Key Words	watershed, interagency, ecology, agents of change, analysis and planning, management measures, stakeholders, and social and organizational elements of watershed planning and management, USACE

Water and the Watershed



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Water control managers, hydrologists, hydraulic engineers, environmentalists, biologists, economists, sociologists, ecologists, or study managers.
Attendance Restrictions	Federal, state, and local government employees.
Generally When/Where Offered	July in Davis, CA.
Duration	5 days
Cost to Attend	FY99 tuition is \$1,310 per person.
Contact Name	John Buckley
Phone/Fax	256-895-7445/ 256-895-7442
E-Mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, the Professional Development Support Center, ATTN: CEHR-P-TO, P.O. BOX 1600, Huntsville, AL 35807-4301
Internet Information	None
Brief Description	The course covers the occurrence, movement, storage, and control of water, the processes and history of the natural development of the landscape, the concept of the watershed as a bioregion, the interrelationship of natural systems (watershed ecology), the role of the soil mantle as a natural filter, the effects of wastewater on stream and river water quality, the development of water for supply and irrigation, hydroelectric power, recreation, the protection of persons and property from flooding, the preservation, conservation and restoration of natural features such as wetlands; and the social, cultural, and institutional elements of water management.
Key Words	surface water and groundwater hydrology, geomorphology, watershed ecology, adaptive management, scenario development, stakeholders, geographic information systems, USACE, local and state organizations, watershed management

Engineering and Design of Constructed Wetlands for Water Quality Improvement



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers, hydrologists, soil scientists, biologists, and others involved in the planning, design, construction, and operation/maintenance of constructed wetlands.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	March in Orlando, FL.
Duration	36 hours
Cost to Attend	\$2,130
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course provides students with a working knowledge on how to construct wetlands for water quality improvement. Planning, design, engineering, construction, operations and maintenance, and monitoring for civil works projects will be stressed. This course will also introduce the latest proven technologies that can be applied to the construction and use of wetlands for surface and wastewater improvement. Case studies of important constructed wetlands with lessons learned will be discussed. The course will also include problem solving sessions as well as field trips to wetlands that are functioning for water quality improvement.
Key Words	water quality improvement, wastewater treatment, agricultural runoff, point/nonpoint source pollution, role of vegetation in constructed wetlands, USACE

Groundwater Hydrology



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers, geologists, hydrologists, and water resources planners.
Attendance Restrictions	Federal, state, and local government employees.
Generally When/Where Offered	August in Davis, CA.
Duration	5 days
Cost to Attend	\$1,190
Contact Name	John Buckley
Phone/Fax	256-895-7431/256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	The course focuses on applied groundwater hydrology for the purpose of planning and evaluation. Topics include the occurrence and movement of groundwater, well hydraulics, site characterization, surface water and groundwater interaction (and groundwater modeling). Hand methods and computer techniques are presented as methods of analysis.
Key Words	groundwater, data analysis, hydrogeology, USACE

Coastal Ecology



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers, scientists, and technicians with planning operations, or regulatory duty assignments involving marine and coastal systems.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	May in Charleston, SC.
Duration	36 hours
Cost to Attend	\$2,755
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	Students are introduced to the basic concepts of marine/estuarine ecology (including benthic ecosystems, fisheries, coastal marsh and seagrass ecology), sensitive resources, experimental design, and current marine ecological techniques such as the Benthic Resources Assessment Techniques (BRAT) and the Sediment Profiling (SP) camera. The role and importance of coastal ecosystems will be discussed. This course provides students with state-of-the-art knowledge and technology regarding marine and coastal ecology. Students are given an overview of the latest techniques in the field of coastal ecology.
Key Words	benthic ecology/ecosystems, coastal marsh, seagrass ecology, fisheries, BRAT, USACE

Ecological Resources: Identification, Analysis, and Evaluation



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers, scientists, and technicians involved in the management, analysis, identification or evaluation of ecological resources.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	April, May, June in Vicksburg, MS.
Duration	36 hours
Cost to Attend	\$1,470
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course provides students with a working knowledge of how to define, acquire, and appropriately report ecological resources data, information, and the analysis required to comply with federal laws, executive orders, Corps of Engineers policy and planning guidance. Students are taught state-of-the-art techniques and procedures for collecting, analyzing, and displaying ecological resource information used for planning reports and NEPA documents. Ecological resources include broadly defined fish and wildlife populations, habitats, and their relationship to each other and the environment/ecosystem.
Key Words	vegetation sampling, assessment techniques, ecosystem, watershed, flora/fauna, riparian zone, wetlands, uplands, biota, hydrology, geomorphology, USACE

Fundamentals of Wetlands Ecology



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers, hydrologists, soil scientists, biologists, and ecologists needing an overview of basic wetland ecological concepts and principles.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	June in Annapolis, MD and August in Olympia, WA.
Duration	36 hours
Cost to Attend	\$1,880
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course provides an introduction of basic wetland ecological concepts and principles in the context of planning and operating civil works environmental and mitigation projects. Students are provided a basic knowledge of wetland flora and fauna, hydrology, soils, and ecology. The course emphasizes wetlands functions and values in an ecosystem perspective. Both saltwater and freshwater wetlands will be addressed. The relationship of wetlands to adjacent terrestrial and deep water habitats, along with wetlands succession and dynamics are discussed.
Key Words	wetlands hydrology, wetland vegetation, faunal populations, plant and animal communities, ecosystem relationships, hydric soils, wetland classification systems, evaluation of wetland functions, wetlands restoration and constructed wetlands, USACE

Interdisciplinary Training for Ecosystem Restoration



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Engineers and scientists involved in the planning, operating, and managing of ecosystem restoration projects, including permits under the Clean Water Act that would involve ecosystem restoration.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	May in Vicksburg, MS.
Duration	36 hours
Cost to Attend	\$1,660
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course provides an interdisciplinary perspective on ecosystem restoration, protection, and management. Students will learn the principles of selected disciplines outside their own and will become familiar with relevant case studies and issues in planning and conducting ecosystem restoration. At the end of the course, the students will have a more holistic understanding of ecosystems and the requirements for successfully restoring, protecting, and managing them.
Key Words	ecology, hydrology, geology, soil types, biota, wetlands, uplands, riparian zone, geomorphology, ecosystem relationships, flora and fauna, USACE

Riparian Zone Ecology, Restoration, and Management



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Environmental protection specialists, physical scientists, hydrologists, and natural resource personnel involved in the management, analysis, identification, and evaluation of ecological and natural resources.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	April in Augusta, GA and June in Fresno, CA.
Duration	36 hours
Cost to Attend	\$2,280
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course addresses planning and management issues that pertain to riparian ecosystems in a variety of ecological and geographical settings. Emphasis is placed on the ecology, restoration, and stewardship of riparian habitats associated with civil works planning and operational projects. Students will be able to characterize riparian habitats, understand the function and values of these habitats and make appropriate decisions regarding their restoration, use, conservation, and management from an ecosystem perspective.
Key Words	riparian classification, ecology, hydrology, geomorphology, flora and fauna, inventory and monitor techniques, corridors, buffer strips, impacts (hydrologic changes, vegetation modification, exotic species, agricultural practices, bank erosion , nonpoint source pollution), USACE

Wetland Development and Restoration



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Biologists and engineers.
Attendance Restrictions	Preference given to staff from U.S. Army Corps of Engineers and Department of Defense. Other federal and state government employees may attend as space is available.
Generally When/Where Offered	Scheduled in various cities around the U.S.
Duration	5 days
Cost to Attend	\$2,040
Contact Name	Janie Hughes
Phone/Fax	256-895-7440
E-Mail	Janie.d.hughes@hnd01.usace.army.mil
Mailing Address	The United States Army Corps of Engineers, the Professional Development Support Center, Attn: CEHR-P-TO, P.O. BOX 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	Provides introductory training in the concepts and practices of wetlands restoration and development in both inland (freshwater) and coastal areas. The course is directed towards biologists and engineers concerned with wetlands and seagrass development on dredged material, restoration of disturbed wetlands and seagrass beds, and techniques for reducing engineering impacts. Practical, hands-on field application of state-of-the-art techniques is emphasized.
Key Words	wetland, restoration, federal, USACE

Wetland Mitigation Bank Development and Management



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	This course is primarily for personnel involved in regulatory functions; however, anyone involved in wetlands mitigation should find this course useful.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	June-July in Orlando, FL.
Duration	36 hours
Cost to Attend	\$1,800
Contact Name	John Buckley
Phone/Fax	256-895-7431/ 256-895-7466
E-mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	Mitigation banking is gaining acceptance as a tool for dealing with some wetland losses. Students will be taught how to apply mitigation banking principles to the plan, design, implementation, and management of mitigation banks. This course provides students with the knowledge required to develop and manage successful mitigation banks. Topics such as setting bank goals, federal agency perspectives on banking, financial assurances, calculation and management of credits and debits, use of the Hydrogeomorphic Wetland Functional Assessment Method (HGM), considerations for siting and planning, and success criteria will be covered.
Key Words	Mitigation Review Banking Team (MBRT), financial viability, credits and debits, ecological bank characteristics, Habitat Units (HU), Hydrogeomorphic Classification System (HGM), USACE

Wetlands Evaluation Procedures



Sponsoring Organization	United States Army Corps of Engineers (USACE)
Target Audience	Biologists, economists, engineers, natural resource managers, environmental specialists, as well as personnel involved in regulatory function.
Attendance Restrictions	USACE personnel as well as qualified personnel from other government agencies.
Generally When/Where Offered	March-April in Mobile, AL.
Duration	36 hours
Cost to Attend	\$2,190
Contact Name	John Buckley
Phone/Fax	256-895-7431/256-895-7466
E-Mail	John.P.Buckley@usace.army.mil
Mailing Address	The United States Army Corps of Engineers, The Professional Development Support Center, ATTN: CEHR-P-TO, P.O. Box 1600, Huntsville, AL 35807-4301
Internet Information	http://pdsc.usace.army.mil
Brief Description	This course provides an in-depth introduction of existing wetland evaluation procedures and case study application to wetland systems for environmental impact assessment and evaluation purposes. Methods to identify and evaluate the functions of wetlands and their corresponding values to the ecosystem and society will be discussed. Evaluation of a wetlands' role in an ecosystem and watershed setting will be addressed. The requirements for wetlands evaluation and justification during project planning, operations, and the natural resource management phases of civil works program will be stressed.
Key Words	Habitat Evaluation Procedures (HEP), Habitat Suitability Index (HSI), Habitat Units (HU), Wetland Evaluation Technique (WET), Hydrogeomorphic Classification System (HGM), USACE

A Framework for Stream Corridor Restoration



Sponsoring Organization	Interagency Watershed Training Consortium
Target Audience	Interdisciplinary technical and management teams and individuals responsible for planning, designing, and implementing stream corridor restoration.
Attendance Restrictions	"Working at a Watershed Level" strongly encouraged.
Generally When/Where Offered	Through participating agencies: NRCS, USEPA, USACE, BOR, BLM, USFS, and USFWS.
Duration	5 days
Cost to Attend	Varies by agency and location.
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.usda.gov
Brief Description	Stream corridor restoration practitioners and involved citizens will enhance the success of their work with a common understanding of associated principles, processes, and practices. This interagency course provides a broad foundation of scientific and social principles proven useful in guiding stream corridor restoration. Utilizing the interagency publication, <i>Stream Corridor Restoration: Principles, Processes, and Practices</i> , this introductory course discusses the ecological processes, structure, and functions forming stream corridor systems; stream corridor characterization and condition analysis; developing a restoration plan; restoration design, implementation, and monitoring.
Key Words	stream corridor restoration, ecological functions, NRCS, USEPA, USACE, BOR, BLM, USFS, USFWS

Drainage School: Agricultural Water Management



Sponsoring Organization USDA Cooperative Extension, Ohio State University and Ohio EPA

Target Audience Personnel participating in agricultural water management.

Attendance Restrictions None

Generally When/Where Offered March 1999 in Columbus or Toledo, OH.

Duration 5 days

Cost to Attend \$250

Contact Name Larry Brown

Phone/Fax 614-292-3826/614-292-9448

E-mail brown.59@osu.edu

Mailing Address The Ohio State University Extension, 590 Woody Hayes Drive,
Columbus, OH 43210-1057

Internet Information N/A

Brief Description This course will focus on field-scale and small-watershed-scale level drainage design. The course focuses primarily on water table management systems and constructed wetlands in an integrated system.

Key Words watershed, land use, water quality, ground water, nonpoint source pollution, best management practices, management, planning, wetland, restoration, USDA, university, state

Introduction to Water Quality (Distance Learning)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Federal, state, and district employees, tribal representatives, and those involved in nonpoint pollution abatement/mitigation or control activities.
Attendance Restrictions	None
Generally When/Where Offered	As needed/registration on the Internet.
Duration	Three months to complete self-study program. The training program requires approximately 20 hours of concentrated study to complete.
Cost to Attend	None
Contact Name	Dave Drennan
Phone/Fax	817-509-3246/817-509-3271
E-mail	ddrennan@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/iris/water_qual/netinfo.html
Brief Description	This course creates an awareness of NRCS Water Quality policy, teaches principles and how to apply them in daily NRCS activities at the field, farm, and watershed scales. The course utilizes video and a student workbook for self-instructional delivery. This is an introductory level training program. Students will have 3 months from the registration day and completion of the pretest until the time they must complete the post test. The self-study program includes 12 modules.
Key Words	water quality, planning process, nonpoint source management, watershed, conservation, partnerships, USDA, NRCS, federal

Soil Bioengineering (TECH 505)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Individuals who plan, design, or install conservation practices and who anticipate they will be utilizing small, simple soil bioengineering systems or those that will be coordinating work to be done with others may attend.
Attendance Restrictions	None
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	32 hours
Cost to Attend	None
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course describes how vegetation and structures can be used together in attractive environmentally compatible and cost-effective ways for protecting upland slopes, streambanks and shorelines. Methods and construction techniques for soil bioengineering systems on small, uncomplicated sites are covered in detail with planning.
Key Words	soil bioengineering, soil bioengineering system, conservation, USDA, NRCS, federal

Forest Water Quality (TECH 620)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Suggested participants include: foresters, soil conservationists, WQ specialists, watershed planners, engineers, biologists, agronomists, and RC&D specialists. Several slots will be reserved for specialists from the Extension Service, U.S. Forest Service, state forestry agencies, state water quality agencies, SWCD foresters, industrial foresters, and consulting foresters.
Attendance Restrictions	None
Generally When/Where Offered	Location and time vary based on participants' need.
Duration	1 week
Cost to Attend	None
Contact Name	Tony Lovell
Phone/Fax	817-509-3248/817-509-3271
E-mail	tlovell@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course trains state and area specialists to effectively carry out a conservation program that uses trees and forest practices to protect water quality and quantity.
Key Words	watershed training, conservation, water quality, USDA, NRCS, federal

Water Quality - Resource Assessment (TECH 850)



Sponsoring Organization USDA Natural Resources Conservation Service

Target Audience Water quality specialists, resource conservationists and anyone dealing with water quality.

Attendance Restrictions None

Generally When/Where Offered Location and time vary based on participants' needs.

Duration 4 days

Cost to Attend None

Contact Name Georgia Spiller

Phone/Fax 817-509-3254/817-509-3271

E-mail gspiller@ftw.nrcs.usda.gov

Mailing Address Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115

Internet Information <http://www.ftw.nrcs.usda.gov/nedc/courses.html>

Brief Description This course provides training in the basic water quality principles, ecology of freshwater systems, aspects of nonpoint source water quality problems as well as other areas.

Key Words water quality, macroinvertebrates, lotic, lentic, conservation, training, USDA, NRCS, federal

Hydrology Tools for Wetland Determination (TECH 895)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	All employees who are responsible for hydric soil identification.
Attendance Restrictions	Have a basic knowledge of the following manuals: 1987 Corps of Engineers Wetland Manual, 3 rd Edition NFSAM and Hydrology tools for Wetland Determination Manual (HTWDM).
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	32 hours
Cost to Attend	None
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course provides multi-agency participants with training needed to correctly select, from seven available hydrology tools, the best tool to fit site conditions; to use the tools; and to review results of agency work and work by consultants. Tools covered include onsite field indicators, remote sensing, observation wells, streamflow and lake gage analysis, runoff volumes, scope and effect, and DRAINMOD.
Key Words	hydrology tools, wetland determination, NRCS, USDA, federal

Hydrology Training Series — Modules 101, 102, 103, 104, 105, 106, 107, 111, 116, 151, 206A, 206B, 206D and 251 (Distance Learning)



Sponsoring Organization USDA Natural Resources Conservation Service

Target Audience This training series is intended for all NRCS personnel who use hydrology in their work, calculate runoff using the CN procedure and the Engineering Field Manual. This training series is also recommended for those who calculate peak discharge and time of concentration for a drainage area, need an introduction or overview of hydrographs, use reservoir flood routing procedures, employees who have not previously used the EFM2 or similar computer programs, Climatic Data Liaisons, engineers, technicians who compute peak discharge from areas greater than 2000 acres and from urban watersheds, and those who have not previously used the TR-55 or similar programs.

Attendance Restrictions None

Generally When/Where Offered Self-study modules.

Duration Self-study modules, 1-3 hours in length.

Cost to Attend None

Contact Name Don Holley

Phone/Fax 817-509-3267/817-509-3271

E-mail dholley@ftw.nrcs.usda.gov

Mailing Address Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115

Internet Information <http://www.ftw.nrcs.usda.gov/nedc/courses.html>

Brief Description These modules provide training and instruction on hydrology. The following topics are covered: introduction to hydrology, runoff computation, peak discharge, hydrographs, reservoir flood routing, watershed yield, EFM2 and TR-55 microcomputer programs, time of concentration and peak discharge graphical method.

Key Words hydrology, runoff computation, peak discharge, hydrograph, watershed management, training, NRCS, USDA, federal

Water Quality Monitoring — Modules 1-13 (Distance Learning)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Federal, state, and district employees, tribal representatives and others involved in nonpoint source pollution activities and water quality.
Attendance Restrictions	None
Generally When/Where Offered	Self-study program; registration on the Internet.
Duration	Three months to complete self-study program.
Cost to Attend	None
Contact Name	Georgia Spiller
Phone/Fax	817-509-3254/817-509-3271
E-mail	gspiller@ftw.nrcs.usda.gov
Mailing Address	Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	Available January 1999. http://www.ftw.nrcs.usda.gov/nedc/courses.html .
Brief Description	This program provides training in developing a water quality monitoring system and is intended to be supplemental to the <i>National Handbook of Water Quality Monitoring</i> .
Key Words	water quality, water quality monitoring, water quality problems, objectives, statistical design, conservation, USDA, NRCS, federal

Aquatic Herpetology



Sponsoring Organizations	USDA Forest Service
Target Audience	Wildlife and fisheries professionals with aquatic reptile and amphibian management responsibilities.
Attendance Restrictions	None
Generally When/Where Offered	"On-demand" course. Time and location to be arranged with course coordinator.
Duration	2 days (no field sessions) or 4 days (if field session desired)
Cost to Attend	Negotiated with course coordinator and depends on fixed costs plus the number of participants.
Contact Name	Dr. Glenn Chen
Phone/Fax	435-755-3566/435-755-3563
E-mail	None available.
Mailing Address	USFS Rocky Mountain Station, 860 N 1200 E, Logan, UT 84321
Internet Information	http://www.zmariner.com/fs/ce
Brief Description	<p>This course is designed to provide professional biologists with the knowledge needed to effectively manage aquatic herp habitat and populations. Each course is custom-tailored to meet participants' local/regional needs and is setup "on demand" with course coordinator. The agenda is flexible and directed at addressing the audience's particular herp issues. Topics covered typically include taxonomy and life history of aquatic herps; habitat needs and habitat relationships; methods to inventory and monitor herp habitat and populations; management of threatened/endangered/sensitive listed herp species; effects of land management on herps/ and review of ongoing herp research. Participants will have extensive opportunity to consult with local/regional/national herp experts during the course. A live animal lab and field sessions can be included as well. Tuition cost will depend on location selected, number of speakers and their associated travel costs, availability of matching funds, etc. Interested groups should contact the course coordinator to discuss and arrange for sessions.</p>
Key Words	aquatic reptiles and amphibians, life history, taxonomy, habitat needs, inventory methods, listed and candidate species, local and regional herp issues, USFS

Introduction to Ecological Principles: A Basic Biology Course (Distance Learning)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	This course is primarily for NRCS employees who have not had a basic ecology course.
Attendance Restrictions	None
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	Approximately 8 hours. The self-paced workbook with exercises should be completed in approximately 6 hours. The workbook is followed by a two-hour video.
Cost to Attend	None
Contact Name	Jerry Williams
Phone/Fax	817-509-3259/817-509-3271
E-mail	jwilliam@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This is an introductory course for employees who have not had a basic ecology course. It will give students an understanding of ecological principles. The course consists of a self-paced workbook with exercises followed by a video presentation.
Key Words	biology, ecology, ecological principles, education, NRCS, USDA, federal

Plant-Herbivore Interactions (TECH 705)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	All who need to understand the details of plant-herbivore ecosystems that occur on rangeland, forest land, native pasture, pastureland, and grazed cropland.
Attendance Restrictions	None
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	10 days
Cost to Attend	None
Contact Name	Dave Drennan
Phone/Fax	817-509-3246/817-509-3271
E-mail	ddrennan@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course provides an in-depth understanding of the interrelationship between plants and the grazing and/or browsing animal. Major emphasis is placed on evolved structural and chemical plant protections to grazing, and animal behavior in relation to their selection of food and habitat. A knowledge of plant-herbivore interactions is essential for NRCS personnel in assisting clients in designing grazing management plans to solve the critical issues of soil, water, air, plant, and animal resources problems on grazing and wildlife lands. This training will cover the state-of-the-science concepts, and the application of those concepts, as well as the research on which the concepts are founded.
Key Words	plant-herbivore interactions, plant-herbivore ecosystems, grazing management, training, NRCS, USDA, federal

Rangeland Ecology (TECH 816)



Sponsoring Organization USDA Natural Resources Conservation Service

Target Audience Natural Resources Conservation Service employees who need to understand the state of the science details of range ecology may attend this course. Personnel working with rangeland, pastureland, grazeable woodland and native pasture should attend this course since the basic principles of plant growth and interactions are very applicable to all grazing lands.

Attendance Restrictions None

Generally When/Where Offered Location and time vary based on participants' needs.

Duration 7 days

Cost to Attend None

Contact Name Dave Drennan

Phone/Fax 817-509-3246/817-509-3271

E-mail ddrennan@ftw.nrcs.usda.gov

Mailing Address USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115

Internet Information <http://www.ftw.nrcs.usda.gov/nedc/courses.html>

Brief Description This course covers a broad section of plant ecology addressing the plant, population, and community levels of vegetation organization for both the grass and shrub life forms. The subdisciplines of physiological ecology, developmental morphology, population ecology, landscape ecology, hydrology, and global change will all be addressed in an integrated manner to provide a current overview of each of the topics listed. Course materials will be presented in a combination of lecture, discussion, and demonstration.

Key Words rangeland ecology, plant ecology, NRCS, USDA, federal

Pastureland Ecology I (TECH 818)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Employees responsible for leadership in the grazing lands discipline. Employees with 3-5 years of pastureland planning assistance.
Attendance Restrictions	Recommended but not required that participants have attended the course "Working Effectively With Livestock Producers."
Generally When/Where Offered	North Carolina State University, Raleigh, NC in May.
Duration	8 days
Cost to Attend	None
Contact Name	Tony Lovell
Phone/Fax	817-509-3248/817-509-3271
E-mail	tl Lovell@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course will examine the interaction of soil, water, air, plants, animals and humans (SWAPA+H) and pastureland ecosystems. Situation analysis of animal forage management practices will be discussed. Practical applications of pasture design, fencing, watering and feed rationing will be discussed.
Key Words	pastureland ecology, pastureland management, NRCS, USDA, federal

Ecological Science for Engineering Applications (TECH 828)



Sponsoring Organization	USDA National Resources Conservation Service
Target Audience	Personnel who routinely plan, design, contract, or implement components of natural resource systems.
Attendance Restrictions	Priority to NRCS employees.
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	5 days
Cost to Attend	None
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course presents a multi-disciplinary approach to integrating engineering and ecological sciences. Methods and techniques emphasize the importance of basing engineering assistance on ecological principles. It demonstrates the value of engineers and other natural resource professionals working as a team.
Key Words	ecological science, engineering, NRCS, USDA, federal

Wetland Restoration and Enhancement (TECH 885)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	NRCS and other agency employees who develop restoration/enhancement plans or who review them may attend this course.
Attendance Restrictions	Two years experience.
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	Phase I - approximately 20 hours. Phase II - 32 hours.
Cost to Attend	None
Contact Name	Eddye Robertson
Phone/Fax	817-509-3250/817-509-3271
E-mail	eroberts@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	<p>Participants learn to assess, plan, and implement the restoration of enhancement of wetlands. The course emphasizes wetland ecology, planning for wetland functions, design and implementation, and legal considerations. There are specific courses for several types of wetlands: prairie potholes, bottomland hardwood, northwest freshwater wetlands, and others.</p> <p>Each course is presented in two phases. Phase I pertains to generic principles applicable to all wetlands. The precourse assignment consists of a workbook with exercises and tests completed at participants' work places. Upon successful completion of phase I, participants attend phase II. Phase II is on-site training at field sites within the geographic area specified.</p>
Key Words	wetland restoration, wetland, training, NRCS, USDA, federal

Hydric Soils for Wetland Delineation (TECH 890)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	NRCS and other agency employees who are responsible for hydric soil identification. Soil scientists with more than two years experience will not benefit from this course.
Attendance Restrictions	Regulatory IV - Identification and Delineation of Wetlands - recommended, but not required.
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	32 hours
Cost to Attend	None
Contact Name	Eddy Robertson
Phone/Fax	817-509-3250/817-509-3271
E-mail	eroberts@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course enables non-soil scientists to perform hydric soils determinations and field delineations, using standard techniques of soil science. It also enables participants to complete technically accurate documentation. Soil scientists with less than two years experience may also attend. Covered in the training are: use of hydric soils definition and criteria, use and identification of hydric soil field indicators landscape, vegetation, and soil relationships, use of soil classification and soil surveys for hydric soil identification.
Key Words	hydric soil, hydric soil identification, wetland delineation, NRCS, USDA, federal

Forestry/Agroforestry Soil-Based Interpretations (TECH 610)



Sponsoring Organization	USDA Natural Resources Conservation Services
Target Audience	NRCS and other agency employees who are involved in the development of soil-based interpretations for forestry and/or agroforestry may attend this course.
Attendance Restrictions	Background knowledge of soil survey procedures, plot data collection techniques and concepts in the use and development of soil-based interpretations is a prerequisite. A thorough review of Part 537 of the National Forestry Manual is also required.
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	32 hours
Cost to Attend	None
Contact Name	Eddye Robertson
Phone/Fax	817-509-3250/817-509-3271
E-mail	eroberts@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course is designed to enable foresters, soil scientists, and other specialists to develop soil-based interpretations related to forestry and agroforestry.
Key Words	agroforestry, forestry, soil, USDA, NRCS, federal

Introduction to Digital Remote Sensing (TECH 654)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	State, and area GIS specialists, or other technical specialists with GIS or remote sensing responsibilities may attend.
Attendance Restrictions	Familiarity with the basic concepts of geographic information systems and basic photo interpretation is recommended, but not required.
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	1 week
Cost to Attend	None
Contact Name	Dave Drennan
Phone/Fax	817-509-3246/817-509-3271
E-mail	ddrennan@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This course introduces employees to remotely sensed digital imagery, with a focus on evaluating, selecting, procuring, interpreting, and utilizing digital imagery for NRCS applications. It includes an introduction to digital image processing techniques in a GIS environment and a review of global positioning systems (GPS) technology.
Key Words	digital remote sensing, GIS, GPS, NRCS, USDA, federal

Soil Technology - Measurement and Data Evaluation (TECH 956)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	State office and Area/Resource Soil Scientists and Soil Survey Project Leaders, GS-09, 11, 12, and 13.
Attendance Restrictions	Prerequisite: Basic Soil Survey - Field and Lab Course
Generally When/Where Offered	Location and time vary based on participants' needs.
Duration	1 week
Cost to Attend	None
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	USDA Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	This training will provide soil scientists with skills needed to use new technology in data collection and to accurately assess the data collected for the purpose of populating the National Soil Information System (NASIS). They will learn what information goes into the models and how it is used.
Key Words	training, soil measurement evaluation, soil data evaluation, NASIS, USDA, NRCS, federal

Soil Mechanics Training Series—Modules 1-5 (Distance Learning)



Sponsoring Organization USDA Natural Resources Conservation Service

Target Audience These modules are intended for engineers, geologists, soil scientists, soil conservationists, technicians, and others needing the fundamentals of soil classification systems.

Attendance Restrictions None

Generally When/Where Offered Self-study modules.

Duration Modules 1-3, 22 hours; modules 4 and 5, 38 hours self-paced.

Cost to Attend None

Contact Name Don Holley

Phone/Fax 817-509-3267/817-509-3271

E-mail dholley@ftw.nrcs.usda.gov

Mailing Address Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115

Internet Information <http://www.ftw.nrcs.usda.gov/nedc/courses.html>

Brief Description These modules provide training and instruction on soil mechanics. Upon completion of all modules, participants will be able to classify soils by Unified, AASHTO, and USDA Textual Soil Classification Systems using laboratory data, soil series, and soil map unit descriptions; and run simple field identification tests and visually classify soils in the proper grouping of Unified Soil System. Participants will also be able to construct a block diagram of a soil mass and label each element with its proper symbol from memory, define conceptually the most important volume-weight relationships from a list; select the proper equations from a given reference table to solve for unknown volume-weight terms; list from memory commonly measured laboratory parameters of a soil mass; define terms and use equations in compaction theory and application, and perform a standard compaction test and be able to critically evaluate test results and procedures.

Key Words soil classification systems, soil mechanics, training, NRCS, USDA, federal

Soil Properties and Interpretations—Modules 1-3, 6, 9, 16 and 18 (Distance Learning)



Sponsoring Organization	USDA Natural Resources Conservation Service
Target Audience	Soil Scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.
Attendance Restrictions	None
Generally When/Where Offered	Self-study modules.
Duration	9 hours and 10 minutes to complete all modules.
Cost to Attend	None
Contact Name	Don Holley
Phone/Fax	817-509-3267/817-509-3271
E-mail	dholley@ftw.nrcs.usda.gov
Mailing Address	Natural Resources Conservation Service, National Employee Development Center, P.O. Box 6567, Fort Worth, TX 76115
Internet Information	http://www.ftw.nrcs.usda.gov/nedc/courses.html
Brief Description	These modules provide training and instruction on soil properties and interpretations. Upon completion of all modules, participants will be able to estimate soil texture, soil organic matter, soil structure, permeability, soil slope, and soil temperature. Participants will then be able to list those land uses in which the above soil properties are a factor and relate them all to soil taxa to make interpretations.
Key Words	soil properties and interpretations, training, USDA, NRCS, federal

S.W.A.T. (Soil and Water Assessment Tool) Workshop



Sponsoring Organization	Co-sponsored by Grassland, Soil and Water Research Laboratory, USDA-ARS, Temple, TX and Blackland Research Center, Texas Agricultural Experiment Station, Temple, TX
Target Audience	New users of the model.
Attendance Restrictions	Workshop size limited to 12.
Generally When/Where Offered	3 times a year: the beginning of January, the end of May, and mid-August in Temple, TX.
Duration	3 days
Cost to Attend	\$500 per person
Contact Name	Susan Neitsch
Phone/Fax	254-770-6600/254-770-6561
E-mail	neitsch@brc.tamus.edu
Mailing Address	Susan Neitsch, Blackland Research Center, 808 East Blackland Road, Temple, TX 76502
Internet Information	http://www.brc.tamus.edu/swat/index.html
Brief Description	SWAT is a watershed-scale model which EPA has approved for inclusion on the next BASINS release. The purpose of the workshop is to: present an overview of the model; review input/output data and interfaces for data input (Windows and GIS); build example datasets; cover model calibration procedures.
Key Words	basin-scale, land management, water management, nutrient, nitrogen, phosphorus, pesticide, USDA

Developing Your Skills to Involve Communities in Implementing Locally Led Conservation



Sponsoring Organization	USDA Natural Resources Conservation Service and Michigan State University
Target Audience	Individuals responsible for implementing local conservation initiatives for watersheds, states and regions.
Attendance Restrictions	Limited to approximately 30 participants.
Generally When/Where Offered	Late Fall.
Duration	3 days for all nine modules or participants may develop training to meet their needs and budget.
Cost to Attend	Determined by participant's needs.
Contact Name	Barbara Wallace
Phone/Fax	616-942-1503/616-942-0586
E-mail	bwallace@po.nrcs.usda.gov
Mailing Address	Barbara Wallace, 1550 East Beltline Ave., Suite 245, Grand Rapids, MI 49506
Internet Information	None
Brief Description	This training helps watersheds, states and regions acquire social skills in order to more effectively implement local initiatives. The nine module topics are: "The Nature of Community," "Community Issue Identification," "Community Profiling," "Addressing Community Issues," "Power in Communities," "Outreach to Undeserved Audiences," "Networks and Collaborations," "Effective Community Facilitation" and "Conflict Management."
Key Words	riparian areas, wetlands, USDA, NRCS, federal

Watershed Academy 2000 (Distance Learning)



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	These Internet-based distance learning training modules are intended for all water resource managers and their potential watershed management partners, including states, local governments, tribes, watershed groups, and others.
Attendance Restrictions	None
Generally When/Where Offered	Available on Internet.
Duration	Individual modules take between 30 minutes to one hour to complete.
Cost to Attend	None
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/OWOW/watershed/wacademy/acad2000.html
Brief Description	The Watershed Academy has developed a set of training modules on a variety of watershed topics as well as provides links to training modules developed by others. Following is a list of the training modules developed by the Watershed Academy available on this website: "Statewide Watershed Management Executive Overview," "Stream Restoration: What's Right/Wrong with this Picture?" "Principles of Watershed Management," "Monitoring Consortiums," and "Watershed Modeling Tools."
Key Words	ecosystem and watershed management, planning, surface water, water quality, communication, partnership, USEPA, federal

Watersheds 101: Applied Watershed Management



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	This course is intended for watershed managers, staff, and program leaders from states, tribes, and territories; local governments; EPA regional and headquarters staff; watershed associations; and other interested watershed practitioners.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	Scheduled several times per year in cities with EPA regional offices or state capitals.
Duration	2-3 days
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	This 2-3 day course applies the core principles of watershed management to local and state watershed management issues. Through a combination of lectures, exercises, case studies, and interactive sessions, participants work through a watershed management cycle, review a variety of watershed frameworks, explore ways to leverage efforts, and improve decision-making skills. This course is targeted toward individuals who have some background knowledge about watershed management and are interested in learning ways to design or strengthen their long-term management framework.
Key Words	ecosystem and watershed management, planning, surface water, water quality, communication, federal, USEPA

Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	This course is intended for state water resource managers and their potential watershed management partners, including local governments, tribes, watershed groups, and others.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	Scheduled several times per year in cities with EPA regional offices or state capitals.
Duration	2 days
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	This 2-day course provides in-depth, comprehensive training in statewide approaches to watershed management. Drawing on experiences from more than 20 states, the course reviews key elements of statewide management frameworks, including but not limited to considerations for designing stakeholder forums, strategic monitoring and assessment, priority setting, and development and implementation of integrated strategies. Practical tools for implementing watershed approaches are introduced.
Key Words	ecosystem and watershed management, planning, surface water, water quality, communication, partnerships, federal, USEPA

Watersheds 103: TMDL Training for State Practitioners



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	Technical water resources staff and watershed managers from states, tribes, and territories; local governments; EPA regional and headquarters staff; and other interested watershed practitioners.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	The course is currently under development.
Duration	2-3 days
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	<p>This 2- to 3-day course reviews the technical components for developing total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act (CWA). Section 303(d) establishes the TMDL program. Under the program, states must develop lists of waters that do not meet state water quality standards even after the application of technology-based and other required controls, and must establish priority rankings for waters on the list. States must then develop TMDLs for waters on the list. TMDLs specify the amount of a pollutant that needs to be reduced to meet state water quality standards and allocate pollutant loadings among pollution sources in a watershed. The focus of this training is on how to develop TMDLs using a combination of lectures, group exercises, and case studies.</p>
Key Words	TMDL, TMDL development, TMDL protocols, 303(d), USEPA

Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	Watershed managers, staff, and program leaders from states, tribes, and territories; local governments; EPA regional and headquarters staff; and other interested watershed practitioners.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	Planned offering several times per year in cities with EPA regional offices or state capitals.
Duration	½ day-1 day
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	This half-day to 1-day course is intended to help senior managers explore the rationale for implementing statewide watershed management and provides a conceptual framework for carrying out the process of integrating natural resource management programs on a watershed basis. Participants examine the elements of watershed-based organizational management and discuss how the approach can address any difficult challenges facing managers.
Key Words	ecosystem and watershed management, planning, surface water, water quality, communication, partnerships, USEPA, federal

Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	Watershed managers, staff, and program leaders from states, tribes, and territories; local governments; EPA regional and headquarters staff; and other interested watershed practitioners.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	Planned offering several times per year in cities with EPA regional offices or state capitals.
Duration	2 days
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	This 2-day course provides introductions to a number of tools that can help practitioners carry out the watershed management process. The tools overviewed in this course include watershed assessment methods, modeling, risk assessment, issue prioritization, methods for targeting actions, strategic monitoring, evaluation techniques, and information management. Each session covers two or three tools selected from this list.
Key Words	watershed characterization, ecosystem and watershed management, planning, water quality, decision making, federal, USEPA

Watersheds 106: Watershed Partnership Seminar



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	EPA regional and headquarters staff; staff from other federal agencies; state, tribal, and local agencies; environmental organizations; and other interested parties.
Attendance Restrictions	Limited to 40 people; attempts will be made to enroll individuals from a broad array of professional disciplines, private and public affiliations.
Generally When/Where Offered	March 1-12, 1999 in Aurora, CO.
Duration	2 weeks
Cost to Attend	Varies
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	This 2-week course emphasizes the establishment and maintenance of watershed-based partnerships among aquatic resource professionals and citizens representing the diversity of interests necessary to build healthy and sustainable watersheds. It provides an overview of basic ecological principles related to watershed planning and describes the benefits of watershed management. The course focuses on personal and group skills useful to all participants in successful watershed projects. The course blends consensus-building skills, technical knowledge, and ways in which representatives of various interests can work effectively together. Topics include negotiation, facilitation, local decision making, watershed ecology, and team-building skills. Modules are taught by people involved in cooperative watershed projects.
Key Words	ecosystem and watershed management, water quality, planning, communication, public education, public outreach, partnerships, decision making, local government, state, federal, USEPA

Watersheds 107: Using Internet Resources



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	Individuals who want an introduction to using the Internet to find tools for water resource management.
Attendance Restrictions	None
Generally When/Where Offered	In cities with EPA regional offices or state capitals.
Duration	½-1 day
Cost to Attend	No tuition or fee.
Contact Name	Watershed Academy
Phone/Fax	202-260-5368/202-260-1977
E-mail	wacademy@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/watershed/wacademy.htm
Brief Description	<p>What's your watershed address? Want to know who else is working on similar issues in your area? Looking for that perfect map of your watershed with the information layers you need on it? Several Internet programs provide tremendous amounts of information, such as:</p> <ul style="list-style-type: none">• Basic hydrologic units in the contiguous United States• Conditions and vulnerability of aquatic resources in those watersheds• Information on partnerships at work to protect and restore those resources• Access to government programs and services <p>Participants will learn how to access these Internet services and make best use of them to meet their needs. The course will include a feedback session designed to help identify how these Internet services need to be adapted to best help local communities.</p>
Key Words	Internet, watershed, mapping, USEPA

Working at a Watershed Level (Council of State Governments)



Sponsoring Organization	USEPA Office of Wetlands, Oceans and Watersheds and The Council of State Governments
Target Audience	Veteran water agency staff needing a refresher course, watershed management team members, drinking water utility staff developing source water protection plans, citizen group members.
Attendance Restrictions	None
Generally When/Where Offered	Offered upon request of sponsoring organizations at locations they specify.
Duration	1 week
Cost to Attend	\$250 plus, depending on level of support from sponsoring organization.
Contact Name	Barry Tinning
Phone/Fax	606-244-8228/606-244-8239
E-mail	btonning@csg.org
Mailing Address	The Council of State Governments, P.O. Box 11910, Lexington, KY 40578-1910
Internet Information	http://www.csg.org/ecos/working.htm
Brief Description	Broad, basic coverage of the principles of aquatic ecology, natural and anthropogenic processes of change in the watershed, basin assessment approaches, monitoring and modeling considerations, planning and management processes, problem identification/targeting/prioritization, remediation practices, and stakeholder involvement/outreach.
Key Words	watershed planning, management, stakeholder involvement, outreach, aquatic ecology, USEPA

Working at a Watershed Level: Basic Principles of Watershed Management



Sponsoring Organization	University of Washington, Center for Streamside Studies and Center for Urban Water Resources Management, EPA's Watershed Academy
Target Audience	Entry-level staff, technical staff, managers and citizens seeking a broad perspective across scientific and social disciplines integral to the watershed approach.
Attendance Restrictions	None
Generally When/Where Offered	Late summer/early fall in the Seattle area.
Duration	1 week
Cost to Attend	\$200-\$250 (may increase in the future)
Contact Name	Bill Rogers
Phone/Fax	206-685-9632/206-543-2352
E-mail	wjrogers@u.washington.edu
Mailing Address	Engineering Professional Programs, University of Washington, Box 358851, Seattle, WA 98195-8851
Internet Information	www.engr.washington.edu/epp/
Brief Description	This course provides a basic but very broad foundation of scientific and social principles proven useful in guiding watershed-level activities. The six training units move logically through a discussion of how watersheds work, how change occurs in watersheds, methods to assess watershed conditions and plan for management, watershed management practices, and the all-encompassing social and cultural context for watershed management.
Key Words	watershed management, ecosystem management, watershed processes, stream rehabilitation, restoration, University of Washington, USEPA

Sponsoring Organization	USEPA Office of Wetlands, Oceans and Watersheds
Target Audience	This course is intended for local and state government officials, planners, public works and health officials, scientific and technical personnel, and others involved in land and water resource management and protection.
Attendance Restrictions	None
Generally When/Where Offered	Will present an average of six workshops per year. Various locations throughout the country. Specific dates and locations are still to be determined.
Duration	2 days
Cost to Attend	No tuition or fee.
Contact Name	Macara Lousberg
Phone/Fax	202-260-9109/202-260-9960
E-mail	lousberg.macara@epa.gov
Mailing Address	USEPA, 401 M Street, SW, Washington, DC 20460
Internet Information	N/A
Brief Description	This 2-day course assists local officials in protecting aquatic resources by providing information on both regulatory and nonregulatory tools available to them for resource protection, including innovative zoning ordinances, land acquisition techniques, tax incentives, and others. A watershed framework is emphasized in presenting these techniques, and some course time is devoted to explaining the basic hydrology of, and potential impacts on, a watershed. The course curriculum consists of stand-alone modules that can be tailored to meet the needs of the locale in which the workshop is presented.
Key Words	regulatory tools, non-regulatory tools, watershed protection, local officials, stormwater, wetlands, coastal resources, USEPA

Source Water Assessment and Protection Seminars



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water and American Water Works Association (AWWA)
Target Audience	Water suppliers, local government planners and state water programs.
Attendance Restrictions	None
Generally When/Where Offered	One per year in each EPA region.
Duration	2 days
Cost to Attend	None
Contact Name	Susan Miller or Betsy Henry
Phone/Fax	303-347-6181/ 303-794-8915 or 202-260-2399
E-mail	smiller@awwa.org or henry.betsy@epa.gov
Mailing Address	American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235 or USEPA (4606), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.awwa.org
Brief Description	The training will cover issues such as how to apply segmentation and risk hierarchy concepts, how to conduct contaminant inventories, how to make decisions about water supply susceptibility and vulnerability, and how to effectively use implementation strategies available, both regulatory and nonregulatory. The seminars will be tailored to the state source water managers to ensure that public water suppliers are current with the state's intended source water assessment plan, their role in the delineation and assessment process, and how they can use the information to best protect their sources of supply.
Key Words	source water protection, assessment, USEPA

Tribal Nonpoint Source Workshops



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	Primarily Indian Tribes.
Attendance Restrictions	Preferences to tribes but states/EPA and other federal agency staff in respective EPA Regions also attend.
Generally When/Where Offered	Scheduled in cities with EPA regional offices or state capitals or near Tribal lands.
Duration	2-3 days
Cost to Attend	No tuition or fee.
Contact Name	Ed Drabkowski
Phone/Fax	202-260-7009/260-1977
E-mail	drabkowski.ed@epa.gov
Mailing Address	USEPA (4503F), 401 M Street, SW, Washington, DC 20460
Internet Information	N/A
Brief Description	<p>The workshop is intended to assist Indian Tribes in gaining a better understanding of how to assess nonpoint sources of pollution in their waters and watersheds, and how to implement solutions. Workshop topics include: how to assess water quality problems and nonpoint source impacts on Tribal waters; strategies for developing nonpoint source management plans; and how to deal with key sources of nonpoint pollution including agriculture, silviculture, urban runoff, etc. Workshops are tailored to the water resource issues facing Tribes in various parts of the country and often include case studies of various Tribal nonpoint source/watershed programs.</p>
Key Words	tribes, tribal waters, nonpoint source pollution, watershed assessments, management programs, USEPA

BASINS Modeling Course



Sponsoring Organization	USEPA Office of Science and Technology
Target Audience	Water quality analysts, particularly those from states, counties and tribes.
Attendance Restrictions	None
Generally When/Where Offered	As needed, in cities with EPA Regional offices or state capitals.
Duration	5-days, Monday through Friday, 8:00 AM – 5:00 PM.
Cost to Attend	None
Contact Name	Hira Biswas
Phone/Fax	202-260-7012/202-260-9830
E-mail	biswas.hira@epa.gov
Mailing Address	USEPA, 401 M Street, SW (4305), Washington, DC 20460
Internet Information	www.epa.gov/OST/BASINS/training.htm
Brief Description	<p>EPA water programs and their counterparts in states and pollution control agencies have increasingly emphasized watershed- and water-quality-based assessment and integrated analysis of point and nonpoint sources. Better Assessment Science Integration Point and Nonpoint Sources (BASINS) is a system developed to meet the needs of such agencies. It integrates a geographic information system (GIS), national watershed data, and state-of-the art environmental assessment and modeling tools into one convention package. BASINS addresses three objectives: (1) to facilitate examination of environmental information; (2) provide an integrated watershed and modeling framework; and to support analysis of point and nonpoint source management alternatives. It was also conceived as a system for supporting the development of Total Maximum Daily Loads (TMDLs). Developing TMDLs requires a watershed-based approach that integrates both point and nonpoint sources, and BASINS can support this type of approach for the analysis of a variety of pollutants. It can also support analysis at a variety of scales, using tools from simple to sophisticated.</p>
Key Words	watershed, water quality models, point and nonpoint source management, USEPA

Field Workshop on Groundwater-Surface Water Interactions



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water and Flathead Lake Biological Station-University of Montana
Target Audience	State, tribal, and local water resource managers with responsibilities for watershed planning, drinking water, wetlands, and related ecosystem protection.
Attendance Restrictions	Technical or scientific background.
Generally When/Where Offered	Flathead Lake Biological Station, The University of Montana. First week in September.
Duration	3 days
Cost to Attend	Approximately \$220 per person.
Contact Name	Jack Stanford
Phone/Fax	406-982-3301/ 406-982-3201
E-mail	flbs@selway.umt.edu
Mailing Address	Flathead Lake Biological Station, The University of Montana, 311 Biological Station Lane, Polson, MT 59860-9659
Internet Information	www.umt.edu/biology/flbs
Brief Description	This course provides an understanding of the principles and practices needed to manage surface water and groundwater ecotones. It is designed to convey practical methods for identifying and mapping interaction zones and related landscape features, as well as monitoring, data analysis, and adaptive management. The course combines classroom training, lab, and field work to build a solid understanding of both theory and application.
Key Words	groundwater, surface water, monitoring, data analysis, watershed, wetlands, management, federal, USEPA

Source Water Protection Delineation Technical Training



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water
Target Audience	State and regional technical staff working in source water protection programs.
Attendance Restrictions	State and regional technical staff.
Generally When/Where Offered	No dates set yet.
Duration	2 days without additional ½ day wellhead protection area delineation module; 2.5 days with module.
Cost to Attend	None
Contact Name	Dr. Marilyn Ginsberg
Phone/Fax	Not available.
E-mail	ginsberg.marilyn@epa.gov
Mailing Address	USEPA, Office of Ground Water and Drinking Water (4606), 401 M Street, SW, Washington, DC 20460
Internet Information	None
Brief Description	This training provides a technical tool to train state technical staff/assessors in approaches to delineating wellhead protection areas, watersheds, watershed areas, and various types of watershed area segments.
Key Words	source water protection, delineation, assessment, USEPA

Stream Investigation and Stabilization Workshops



Sponsoring Organization	USEPA Office of Wetlands, Oceans and Watersheds and U.S. Army Corps of Engineers Waterways Experiment Station
Target Audience	Engineers, planners, project managers, landowners, Federal, state, and local agency personnel.
Attendance Restrictions	None
Generally When/Where Offered	Offered upon request. Sponsoring organization usually provides funding.
Duration	Varies, 2-5 days.
Cost to Attend	Varies.
Contact Name	David Derrick
Phone/Fax	601-634-2651/601-634-4158
E-mail	derrickd@mail.wes.army.mil
Mailing Address	Commander and Director, U.S. Army Waterways Experiment Station, ATTN: Dave Derrick CEWES-CR-R, 3909 Halls Ferry Road, Vicksburg, MS 39180
Internet Information	None
Brief Description	Through lectures, case histories, and field site reconnaissance, this 2- to 5-day workshop will provide a comprehensive, overall systems approach to stream stabilization. The course will cover a wide range of techniques ranging from traditional approaches such as bank paving and stone dikes to low-cost innovative techniques such as bendway weirs, longitudinal peaked toe, and the bioengineering willow pole curtain and post methods. In addition, lectures will cover stream hydraulics and sediment transport, stream stability, field investigation equipment and safety, and project monitoring and maintenance. Course participants will receive a comprehensive manual containing design criteria and photographs of alternative approaches written in layman's language.
Key Words	streambank erosion, aquatic habitat, bank protection, streambank stabilization, fluvial geomorphology, USEPA

Water Quality Enhancement Techniques for Reservoirs and Tailwaters



Sponsoring Organization	USEPA Office of Wetlands, Oceans and Watersheds, and the U.S. Army Engineer Waterways Experiment Station
Target Audience	Local Lake Associations and Lake and Reservoir Managers, State Water Pollution Control Agencies, State and Federal Fish and Wildlife Agencies, Municipal Water Associations, Corps of Engineers Planners and Engineers, Local and Regional EPA Officials, Federal and State Soil Conservation Agencies, Hydropower Producers and Power Administrators, and Dam Operators.
Attendance Restrictions	This course is limited to 40 participants.
Generally When/Where Offered	Offerings upon request; sponsoring organization usually provides funding.
Duration	2.5 days
Cost to Attend	See above when/where offered.
Contact Name	Laurin Yates
Phone/Fax	601-634-3792/601-634-4158
E-mail	laurin.i.yates@wes01.usace.army.mil
Mailing Address	USACE Waterways Experiment Station, CEWES-CR-F, 3909 Halls Ferry Road, Vicksburg, MS 39180
Internet Information	None
Brief Description	The workshop covers reservoir limnological processes and water quality management opportunities, sampling methodologies and data collection, watershed management and in-reservoir and tailwater engineering technologies, and post-project operations and assessment. Participants acquire classroom knowledge, the workshop manual, and computer codes to aid assessment and design.
Key Words	water quality enhancement, reservoirs, tailwaters, limnology, watershed, USEPA

Sponsoring Organization	USEPA Office of Science and Technology
Target Audience	Participants with fewer than 6 months of experience with the water quality standards and criteria programs. Others may benefit, including veterans of the water quality standards program who want a refresher course. Open to participants from states, Indian tribes, federal agencies, environmental groups, industrial groups, municipalities, the academic community, EPA, and other interested parties.
Attendance Restrictions	None
Generally When/Where Offered	Offered 3-4 times each year in various parts of the U.S.
Duration	5 days
Cost to Attend	No tuition or fee.
Contact Name	Micki Treacy
Phone/Fax	202-260-7301/202-260-9830
E-mail	treacy.micki@epa.gov
Mailing Address	USEPA (4305), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/OST
Brief Description	<p>The Water Quality Standards Academy is a 5-day, basic introductory course for those with fewer than 6 months of experience with the water quality standards and criteria programs. Water quality standards are adopted by states and Indian tribes as laws or regulations. Water quality standards are the backbone of the watershed protection approach to pollution control.</p> <p>The Water Quality Standards Academy is a comprehensive and highly structured course that introduces participants to all aspects of the water quality standards and criteria programs, including the interpretation and application of the water quality standards regulation; policies and program guidance; the development of water quality criteria (human health, aquatic life, sediment, and biological); and all other facets of the program.</p>
Key Words	regulations, water quality standards, communication, USEPA, federal

Stream Processes, Assessment and Restoration Workshop



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds, Assessment and Watershed Protection Division. The workshop is taught by Ecosystem Recovery Institute.
Target Audience	The workshop is designed for conservation districts, state and local resource agencies, Indian tribes, watershed civic groups, and others interested in watershed management with a need for technical and field exposure to stream management and restoration principles.
Attendance Restrictions	Preference to states/tribes/territories or their designees.
Generally When/Where Offered	Courses offered upon request; courses can be customized.
Duration	3 days
Cost to Attend	No tuition or fee.
Contact Name	Mike Hollins
Phone/Fax	717-235-8426/717-227-0484
E-mail	recins@aol.com
Mailing Address	Ecosystem Recovery Institute, P.O. Box 249, Freeland, MD 21053
Internet Information	None
Brief Description	<p>This 3-day technology transfer workshop is offered in a classroom and field review format. It was developed by Ecosystem Recovery Institute to introduce the fundamental concepts of stream processes, restoration, design, and construction in an ecosystem context. The workshop focuses on the basis of:</p> <ul style="list-style-type: none">•Stream processes•Inventory techniques•Assessment of stream condition•Restoration strategies and applications•Design and construction issues <p>Emphasis is placed on incorporating stream mechanics, natural channel geometry, stability concepts, and an ecosystem approach into projects or management programs involving streams.</p>
Key Words	stream restoration, bank stabilization, habitat, design criteria, surface water, aquatic ecology, USEPA, federal

Clean Water Act Section 404 Regulatory Issues Training Course



Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds
Target Audience	EPA regional and headquarters staff and staff from other federal, state, and tribal agencies seeking greater familiarity with the Section 404 program requirements.
Attendance Restrictions	As many as 40 participants can attend. Course enrollment is limited, with priority given to EPA wetlands staff.
Generally When/Where Offered	Course dates vary from year to year, but the course has historically been taught in the fall. Location depends upon which Region has expressed interest in the course, but the training is generally held in or near the main office of the Region hosting the course.
Duration	2-3 days
Cost to Attend	There is no tuition for the course, though participants must cover travel expenses.
Contact Name	Peter Mali
Phone/Fax	202-260-0044/202-260-7546
E-mail	mali.peter@epa.gov
Mailing Address	USEPA, Wetlands Division (4502F), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owow/wetlands/regs.html This site contains information on laws, regulations, and federal guidance pertaining to wetlands.
Brief Description	This course provides an introduction to issues associated with the implementation of the Clean Water Act Section 404 regulatory program. The course presents information on the Section 404(b)(1) Guidelines requirements, the scope of regulated activities, Section 404(f) exemptions, mitigation requirements, and procedures for elevating cases under Sections 404(q) and (c).
Key Words	regulatory, Clean Water Act, Section 404(b)(1) Guidelines, USEPA

NPDES Permit Writers' Course



Sponsoring Organization	USEPA Office of Wastewater Management (OWM)
Target Audience	The course is designed for new permit writers with little or no experience in the NPDES program. Veteran permit writers, permit holders, and staff from other environmental programs also find the course useful and enjoyable and make up a growing percentage of course participants.
Attendance Restrictions	Attendance is limited to 60 participants.
Generally When/Where Offered	Scheduled 5-7 times per year, generally in cities with EPA Regional offices or in state capitals.
Duration	5 days
Cost to Attend	No tuition or fee.
Contact Name	Dan Weese or Greg Currey
Phone/Fax	202-260-6809 or 202-260-1718/202-260-1460
E-mail	weese.daniel@epa.gov or currey.gregory@epa.gov
Mailing Address	USEPA (4203), 401 M Street, SW, Washington, DC 20460
Internet Information	http://www.epa.gov/owm/npdesup.htm#NPDES
Brief Description	This 5-day training course provides the basic regulatory framework and technical considerations that support the development of wastewater discharge permits required under the National Pollutant Discharge Elimination System (NPDES). A multidisciplinary faculty presents the course using a combination of lectures, case examples, and practical exercises. The course begins with an introduction to the history of the NPDES program and its relationship to other Clean Water Act programs. Attention is given to the role of NPDES permitting within a watershed management approach. Participants then become acquainted with the tools and resources available to assist them in writing NPDES permits.
Key Words	water quality, regulations, NPDES, USEPA, federal

SRF Funding Framework Workshops: Integrating the SRF into the States' Water Quality Programs



Sponsoring Organization	USEPA Office of Wastewater Management and EPA Regions	
Target Audience	State water quality representatives from nonpoint source, wetlands, estuary, watersheds, groundwater, and SRF programs.	
Attendance Restrictions	None	
Generally When/Where Offered	Held in each region. See contact name for your region to obtain more information.	
Duration	2 days	
Cost to Attend	None	
Contact Name	Kristin Kenausis (202) 250-2036 (HQ) Ralph Caruso (617) 565-3617 (Reg. I) Bob Gill (212) 637-3884 (Reg. II) Don Niehus (215) 566-5705 (Reg. III) Sheryl Parsons (404) 562-9337 (Reg. IV) Gene Wojcik (312) 886-0174 (Reg. V)	Velma Smith (214) 665-7153 (Reg. VI) Donna Moore (913) 551-7741 (Reg. VII) Brian Friel (303) 312-6277 (Reg. VIII) Juanita Licata (415) 744-1948 (Reg. IX) Dan Steinborn (206) 553-2728 (Reg. X)
Phone/Fax	202-260-2036/202-260-1827	
E-mail	Kenausis.Kristin@epa.gov	
Mailing Address	USEPA, Municipal Support Division (4204), 401 M St., SW, Washington DC 20460	
Internet Information	www.epa.gov/OWM under Clean Water State Revolving Fund	
Brief Description	The CWSRF Funding Framework workshop promotes the use of watershed-based integrated priority-setting systems for establishing CWSRF funding priorities. The workshops will provide members of the SRF community with a foundation in priority setting and a background on regional water quality issues. The workshops will also provide members of the watershed community (NPS, estuary, wetlands, groundwater, and watershed planners) at the state level with an understanding of the CWSRF and how to make use of its vast resources to address water quality problems. Participants will learn how to develop integrated priority-setting systems and how to get individual water quality projects listed and funded by the CWSRF. Case studies of state programs that have developed integrated priority-setting systems in response to the Funding Framework will be presented. State and local program managers in the SRF, nonpoint source, estuary, wetlands, groundwater, and watershed communities who are interested in participating in the workshops should contact their regional CWSRF representative.	
Key Words	nonpoint source, wetlands, estuary, funding, watershed management, water quality, sourcewater, groundwater, USEPA	

Underground Injection Control (UIC) Inspector Training



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water (OGWDW) and Office of Enforcement and Compliance Assurance (OECA)
Target Audience	EPA regional offices, state agencies and tribal authorities.
Attendance Restrictions	Class limited to 45-50 persons due to facility size and local field trip.
Generally When/Where Offered	Annually, usually summer. Location rotated among EPA regional offices.
Duration	4.5 days
Cost to Attend	Attendance is free; participants are expected to pay for hotel, per diem and transportation.
Contact Name	Steve Platt
Phone/Fax	215-814-5464
E-mail	platt.steve@epa.gov
Mailing Address	USEPA Region III (3WP32), 1650 Arch Street, Philadelphia, PA 19103
Internet Information	http://www.epa.gov/ogwdw
Brief Description	This course provides UIC inspectors with program-specific training relating to health and safety in conducting injection well inspections under authority of the safe drinking water act (SDWA).
Key Words	UIC inspector training, drinking water, ground water, USEPA

Source Water Protection Training Module



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water and The Groundwater Foundation
Target Audience	Local organizations and state agencies throughout the U.S.
Attendance Restrictions	None
Generally When/ Where Offered	Contact the Groundwater Foundation to find out where, when and how to arrange for presentations. The Groundwater Foundation holds workshops with other organizations workshops (National Association of Counties, National Center for Small Communities and /CMA and others) throughout the country. Contact individual organizations for specific times and dates.
Duration	3 hours
Cost to Attend	No additional cost if offered as an add-on at ongoing workshops.
Contact Name	Rachael Herpel
Phone/Fax	402-434-2740/402-434-2742
E-mail	Rachael@groundwater.org
Mailing Address	The Groundwater Foundation, P.O. Box 22558, Lincoln, NE 68542
Internet Information	http://www.groundwater.org
Brief Description	The workshop is designed to provide community representatives information about a major new initiative to protect the nation's drinking water-source water assessment and protection. The workshop objectives are to teach community representatives about 1) requirements of the 1996 Safe Drinking Water Act Amendments; 2) their state's plans and progress in developing a plan for source water assessment and protection; and 3) how they can get involved in the source water assessment and protection process. Communities will learn how they can be designated as Groundwater guardians.
Key Words	drinking water, source water, groundwater guardian, source water protection, SWAP, USEPA

Wellhead Protection Workshop



Sponsoring Organization	USEPA Office of Ground Water and Drinking Water and Rural Water Association
Target Audience	Water suppliers, planners, and city councilmen.
Attendance Restrictions	None
Generally When/Where Offered	Throughout each year in various locations within each state.
Duration	1 day
Cost to Attend	No tuition or fee.
Contact Name	Brendan Murphy
Phone/Fax	580-252-0629
E-mail	N/A
Mailing Address	Rural Water Association, 2915 South 13th Street, Duncan, OK 73533
Internet Information	N/A
Brief Description	Training in joining a wellhead protection team, delineating WHPAs, inventory, contaminant source management, and preparing contingency plans.
Key Words	wellhead protection, source water protection, drinking water, USEPA

Basic Pretreatment Course



Sponsoring Organization	USEPA and Water Environment Federation
Target Audience	Persons involved in wastewater treatment.
Attendance Restrictions	Limited to the first 100 that apply.
Generally When/Where Offered	As needed.
Duration	2 days
Cost to Attend	\$200
Contact Name	Anne Reed
Phone/Fax	703-684-2473/ 703-684-2492
E-mail	areed@wef.org
Mailing Address	Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314
Internet Information	http://www.wef.org (conferences/professional development)
Brief Description	This course provides a general overview of pretreatment regulations and requirements. The course is designed primarily for Privately-Owned Treatment Works (POTWs) that implement pretreatment, but could also be useful for industries that must pretreat wastewater prior to discharge.
Key Words	surface water, water quality, water quality standards, water chemistry, regulations, pollution, federal, USEPA

Volunteer Monitoring for Estuaries



Sponsoring Organization	USEPA Office of Wetlands, Oceans and Watersheds, Oceans and Coastal Protection Division and the Center for Marine Conservation
Target Audience	Volunteer monitoring coordinators who manage a group of volunteers in monitoring estuarine areas.
Attendance Restrictions	This course is limited to 40 or fewer participants.
Generally When/Where Offered	Workshops are conducted in coastal areas nationwide, particularly in areas where National Estuary Programs are located.
Duration	To be determined.
Cost to Attend	No tuition or fee.
Contact Name	Joe Hall or Heather Green
Phone/Fax	202-260-9082 or 757-496-0920/757-496-3207
E-mail	hall.joe@epa.gov
Mailing Address	USEPA (4504F), 401 M Street, SW, Washington, DC 20460 or Center for Marine Conservation, 1432 North Great Neck Road, Suite 103, Virginia Beach, VA 23454
Internet Information	None
Brief Description	USEPA sponsors volunteer estuary monitoring workshops nationwide to encourage volunteer monitoring in estuaries, to enhance networking among programs, and to improve the quality of volunteer data. In addition, the workshops help encourage and assist volunteer monitoring coordinators to be more effective in all aspects of planning and implementation of volunteer monitoring. Specific topics include methods, quality assurance, working with the news media, networking, creative funding, data management, and use of the Internet.
Key Words	estuaries, volunteer monitoring, data management, USEPA

Sponsoring Organization	USEPA Office of Water, Office of Wetlands, Oceans and Watersheds and The Council of State Governments
Target Audience	Federal, state, and local agency staff; drinking water utilities, and non-governmental organizations.
Attendance Restrictions	None
Generally When/Where Offered	Offered upon request to sponsoring organizations at locations they specify.
Duration	Workshops can last from 2-6 hours.
Cost to Attend	Varies depending on level of support from sponsoring organization.
Contact Name	Barry Tinning
Phone/Fax	606-244-8228/606-244-8239
E-mail	btonning@csg.org
Mailing Address	The Council of State Governments, P.O. Box 11910, Lexington, KY 40578-1910
Internet Information	http://www.csg.org/ecos/instep.htm
Brief Description	Workshops cover outreach, education, and public involvement strategies linked to watershed planning and management processes. Topics include outreach process steps, tips on graphic material selection, layout and production, working with the news media, stakeholder involvement, and consensus-building approaches.
Key Words	watershed planning, outreach, education, news media, consensus-building, USEPA

Fish and Wildlife Management Planning (FIS2118)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Personnel responsible for the development and implementation of fish and wildlife programs such as natural resource management on tribal lands, military bases, refuges, natural areas and river basins; employees involved in single project development/implementation or in agency-level program planning.
Attendance Restrictions	None
Generally When/Where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	June McIlwain
Phone/Fax	304-876-7439/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course provides participants with a framework they may use to organize management activities. The framework should assist conservation professionals in formulating explicit goals and objectives for their programs and increase efficiency in obtaining them. The training is consistent with the definition of planning as an "integrated system of management that includes all activities leading to the development and implementation of goals, program objectives, operational strategies, and progress evaluation."
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Internet Introduction for Conservation Professionals (TEC7152)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Conservation professionals interested in applying Internet technology to natural resources management.
Attendance Restrictions	None
Generally When/where Offered	7/06-07/99 in Shepherdstown, WV.
Duration	2 days/16 hours
Cost to Attend	\$380
Contact Name	Mark Richardson
Phone/fax	304-876-7470/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Participants in this course learn to use the Internet to access information available to natural resource professionals. The course covers the basic principles of Internet use including its structure, development, capabilities and features. Significant class time is spent mastering the most widely available and popular Internet feature, the World Wide Web, using "browser" software such as Netscape Navigator and Internet Explorer. Discussion also covers the installation of browsers, dialers and common connection problems.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Water Quality Monitoring (FIS3104)



Sponsoring Organization U.S. Fish & Wildlife Service

Target Audience Any fisheries worker.

Attendance Restrictions None

Generally When/Where Offered 2/15-17/99/Shepherdstown, WV.

Duration 2 days/16 hours

Cost To Attend NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.

Contact Name Catharine Johnson

Phone/Fax 304-876-7441/304-876-7202

E-mail nctc_registrar@mail.fws.gov

Mailing Address The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443

Internet Information www.fws.gov/r9nctc/nctc.html

Brief Description Participants in this course are introduced to water chemistry principles, sampling techniques and monitoring protocols. Field sampling and testing techniques are performed, using both chemical test kits and meters. Participants perform various water chemistry tests, analyze the results, and calculate chemical concentrations. The course focuses on the requirements of rainbow trout and channel catfish.

Key Words fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

An Approach to Ecosystem Conservation (FIS2119)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists, land managers, planners and policy makers.
Attendance Restrictions	None
Generally When/Where Offered	11/16-20/98 in Shepherdstown, WV. 05/17-21/99/TBA
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	June McIlwain
Phone/Fax	304-876-7439/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course presents an integrated approach to ecosystem conservation. Guiding principles of conservation biology, particularly landscape ecology precepts and conservation planning, are discussed and developed into an implementation framework. The course integrates ecological theory and application, theory and practice of public involvement, and adaptive management. Participants learn strategies for implementing ecological principles through comprehensive class exercises using a hypothetical but realistic ecosystem conservation scenario.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Conservation Biology: An Introduction (WLD2101)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists and managers requiring a background in current topics related to Conservation Biology.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3.5 days/30 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Jim Siegel
Phone/fax	304-876-7482/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course offers an overview of Conservation Biology including discussion of its fundamental biological and ecological principles. Instruction covers biological diversity, species concepts, uncertainty and variation in natural systems. Other topics include population viability analysis, metapopulations, island biogeography theory, habitat fragmentation effects and reserve design principles.
Key Words	wildlife, training, education, environment, conservation, NCTC, USFWS

Ecosystem Approach Seminars (WLD2121)



Sponsoring Organization U.S. Fish & Wildlife Service

Target Audience FWS employees, biologists, managers, and administrators.

Attendance Restrictions None

Generally When/Where Offered National Conservation Training Center

Duration 1-2 days; 8-16 hours

Cost to Attend NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.

Contact Name Jim Siegel

Phone/Fax 304-876-7482/304-876-7202

E-mail nctc_registrar@mail.fws.gov

Mailing Address The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443

Internet Information www.fws.gov/r9nctc/nctc.html

Brief Description The seminar series provides an overview of the concepts and practices of an ecosystem approach to conservation. The seminars are designed to familiarize participants with new philosophies in conservation biology and help them integrate traditional conservation approaches with the new ecosystem approach. Scheduled speakers are at the forefront of the national discussion of the ecosystem approach, and include noted authors, professors, federal employees, and other public and private land management professionals.

Key Words wildlife, training, education, environment, conservation, NCTC, USFWS

Fish Passageways and Diversion Structures - East (FIS2110)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	This course is intended to assist fisheries biologists, engineers, and others involved in planning, construction, and operation of fish passageways and guidance systems that enhance the migration of various fish species.
Attendance Restrictions	None
Generally When/Where Offered	National Conservation Training Center
Duration	5 days (3.5 days in classroom, 1.5 days in field exercise)
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Jim Siegel
Phone/Fax	304-876-7482/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course presents state-of-the-art information on fish passageways and fish diversion/guidance systems. Instruction emphasizes upstream passage and fish behavior in relation to fishways. The intent is to provide a sufficient foundation for the participant to be a contributing member of a passageway design/operation team. Fishway design primarily is based on behavioral characteristics of shad and river herring. Class exercises are designed to allow participants to apply learned principles. A one-day field exercise includes site visits to passageway and bypass facilities. College credit: 2 semester hours.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Integrated Pest Management (WLD2124)



Sponsoring Organization U.S. Fish & Wildlife Service

Target Audience Any personnel involved with pest control efforts.

Attendance Restrictions None

Generally When/where Offered National Conservation Training Center

Duration 4 days/32 hours

Cost to Attend NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.

Contact Name Jim Siegel

Phone/fax 304-876-7482/304-876-7202

E-mail nctc_registrar@mail.fws.gov

Mailing Address The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443

Internet Information www.fws.gov/r9nctc/nctc.html

Brief Description This course introduces the fundamentals of Integrated Pest Management (IPM) as the framework for pest control activities on FWS lands. The course emphasizes pest management planning and appropriate biological, mechanical and chemical approaches to controlling pests. Participants are given a practical understanding of IPM principles as well as available information resources and guidance in developing IPM plans.

Key Words wildlife, training, education, environment, conservation, NCTC, USFWS

Investigating Fish Kills (FIS1135)



Sponsoring Organization U.S. Fish & Wildlife Service

Target Audience Any fisheries or wildlife worker.

Attendance Restrictions None

Generally When/Where Offered National Conservation Training Center

Duration 4 days/32 hours

Cost to Attend NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.

Contact Name Jim Siegel

Phone/Fax 304-876-7482/304-876-7202

E-mail nctc_registrar@mail.fws.gov

Mailing Address The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443

Internet Information www.fws.gov/r9nctc/nctc.html

Brief Description This course describes basic procedures to be followed during fish kill investigations. The course is taught through a variety of mediums including lecture, discussion, group activities and slide presentations. College credit: 2 semester hours.

Key Words fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Wetland Restoration (ECS3105)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	FWS staff involved in mitigation projects, agricultural lands conversions, or other wetland creation or restoration projects. It is recommended, although not required, that participants take a wetland soils and hydrology course before this course.
Attendance Restrictions	None
Generally When/Where Offered	National Conservation Training Center
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Jim Siegel
Phone/Fax	304-876-7482/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course covers wetland restoration and creation. Participants will go through the steps of site selection, development of plans and specifications, construction staging, excavation and planting options, and monitoring and evaluation strategies of meeting permit compliance and performance criteria. Field trips to restored and created wetlands will demonstrate the results of real-life applications of topics covered in class.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Environmental Investigations (ECS3125)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists and law-enforcement employees whose responsibilities include joint legal and biological investigations of environmental contaminant cases.
Attendance Restrictions	None
Generally When/Where Offered	08/99 in Ashland, OR.
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	NCTC, Environmental Conservation Branch
Phone/Fax	304-876-7449/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course describes technical and legal considerations of contaminant investigations including situations involving mining, oil development, water use, and agricultural activities and pesticide use. The course uses case studies and introduces participants to major types of environmental contaminants and pollution control laws. Topics include: investigative techniques, case preparation, court procedures, principles of wildlife forensics, examination of illegally killed wildlife, and strategies for resolution of hazardous situations.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Habitat Conservation Planning for Endangered Species (ECS3117)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Individuals responsible for assisting in the development of Habitat Conservation Plans.
Attendance Restrictions	None
Generally When/Where Offered	10/5-9/98 in Olympia, WA. 12/14-18/98 in Shepherdstown, WV.
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	NCTC, Environmental Conservation Branch
Phone/Fax	304-876-7449/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	The course addresses the basic steps and processes regarding the Habitat Conservation Planning under Section 10(a)(1)(B) of the Endangered Species Act. Case studies and interactive exercises are used to reinforce lecture sessions.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Interagency Consultation for Endangered Species (ECS3116)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists responsible for conducting project reviews of potential impacts to listed, proposed or candidate species.
Attendance Restrictions	None
Generally When/Where Offered	05/24-28/99 in Shepherdstown, WV.
Duration	5 days/32 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	NCTC, Environmental Conservation Branch
Phone/Fax	304-876-7449/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Participants acquire basic information on conducting interagency consultation under Section 7 of the Endangered Species Act. Key information needs and procedures are addressed with a focus on the information needs related to biological assessments and biological opinions. Lecture and discussion emphasize interagency exchange of information and solutions to affect conservation of rare species.
Key Words	fish, wildlife, training, education, publications, environment, endangered species, conservation, NCTC, USFWS

Natural Resource Damage Assessment (ECS3111)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Personnel from Trustee agencies (federal, state, tribal) whose responsibilities include evaluating and participating in NRDA.
Attendance Restrictions	None
Generally When/Where Offered	National Conservation Training Center, Shepherdstown, WV.
Duration	3.5 days/28 hours
Cost To Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	NCTC, Environmental Conservation Branch
Phone/Fax	304-876-7449/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Participants are given the minimum tools and some practical examples to initiate a Natural Resource Damage Assessment (NRDA). The Oil Pollution Act (OPA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations are discussed. The course includes practical exercises.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Overview of Federal and State Water Rights (WLD4008)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Project leaders and other FWS employees involved with water rights issues, and others interested in water rights issues.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	TBA
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Nancy Streeter
Phone/fax	304-876-7436/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course introduces participants to FWS water rights policies and procedures and current strategies to address water issues. It provides an overview of the various water rights doctrines including appropriative, riparian, federal reserved water rights and public trust doctrines. The sessions help participants understand basic water rights issues and how the FWS manages its rights.
Key Words	wildlife, training, education, environment, conservation, NCTC, USFWS

Natural Resource Law (WLD2122)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Anyone involved with wildlife disease issues.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Nancy Streeter
Phone/fax	304-876-7436/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course provides an overview of the major federal conservation laws of interest to natural resource professionals. Sessions include information on laws that are specific to federal species and habitat protection, pollution control, and trust responsibilities. Also covered are federal water rights and FERC licensing, support of state wildlife programs and farm-bill provisions. Discussions include an historical overview of the development of wildlife and natural resource laws, legal authorities and development in the courts as well as current legal issues.
Key Words	wildlife, training, education, environment, conservation, NCTC, USFWS

Wetland Regulatory Program (ECS3112)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	FWS staff currently involved in the Section 404 permit review program.
Attendance Restrictions	None
Generally When/Where Offered	National Conservation Training Center
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Jim Siegel
Phone/Fax	304-876-7482/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course covers the issues that emerge when biologists review permit applications issued by the Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act. Topics include: Corps regulation and guidance, the Service's mitigation policy, the Environmental Protection Agency's 404(b)(1) guidelines, and other topics related to permit review. The course includes a field trip and frequent discussions of some of the complex issues facing permit biologists.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Monitoring Aquatic Biota (FIS2117)



Sponsoring Organization U.S. Fish & Wildlife Service

Target Audience Field biologists and technicians; the material may also be of interest to program administrators and others.

Attendance Restrictions None

Generally When/Where Offered TBA (Northwest).

Duration 5 days/38 hours

Cost to Attend NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.

Contact Name Alan Temple

Phone/Fax 304-876-7440/304-876-7202

E-mail nctc_registrar@mail.fws.gov

Mailing Address The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443

Internet Information www.fws.gov/r9nctc/nctc.html

Brief Description Major biotic components of freshwater aquatic systems are algae, invertebrates (especially insects), and fish. Indicators or surrogates for biodiversity can be developed from these major components and used in a monitoring program. This course stresses methodologies for empirical derivation of monitoring indicators. In addition, instruction emphasizes the use of biotic indices and community-level data assessment techniques as well as methods of assessing organism-habitat relationships. Other topics include selected sampling designs and statistical analysis approaches used in aquatic monitoring. Case studies are used as a templates for participants to derive monitoring indicators.

Key Words fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Basic Fisheries Biology and Techniques (FIS1130)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Personnel with minimal fisheries experience and who are involved with fisheries projects.
Attendance Restrictions	None
Generally When/Where Offered	09/13-17/99 in Shepherdstown, WV.
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	June McIlwain
Phone/Fax	304-876-7439/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Participants in this course learn about the basics of fish and aquatic invertebrate anatomy and identification, water quality testing, physical habitat measurements, fisheries safety, and fish sampling techniques.
Key Words	fish biology, fish sampling gear, fisheries techniques, training, education, NCTC, USFWS

Environmental Contaminants Field and Laboratory Techniques (ECS3101)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Personnel involved with obtaining field data and conducting environmental contaminant investigations.
Attendance Restrictions	None
Generally When/Where Offered	09/27-10/01/98 in Shepherdstown, WV.
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	NCTC, Environmental Conservation Branch
Phone/Fax	304-876-7449/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Participants receive hands-on training in designing and conducting a pollution investigation. Topics covered include safe and proper field and laboratory techniques for collecting, handling, and preserving environmental samples for biological assays or chemical analysis. The course covers soil, sediment, water, and biological tissue sampling. Other topics will include how to read and evaluate a laboratory chemical analysis and QA/QC report, and how to interpret toxicological data.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

GIS Design for Regional Conservation Planning (TEC7115)



Sponsoring Organization	U.S. Fish and Wildlife Service
Target Audience	GIS developers planning or constructing a large-area, regional GIS for ecosystem planning and decision making.
Attendance Restrictions	Previous experience and/or training using ArcView or a similar desktop GIS software package is required.
Generally When/Where Offered	National Conservation Training Center, Shepherdstown, WV. Going to be held 3/29-4/2/99; 7/12-16/99; and 11/15-19/99.
Duration	5 days
Cost to Attend	\$850
Contact Name	Marcia McNiff (or Glenn Gravatt)
Phone/Fax	304-876-1600/ 304-876-7234
E-mail	Marcia_McNiff@fws.gov (or Glenn_Gravatt@fws.gov)
Mailing Address	U.S. Fish and Wildlife Service, National Conservation Training Center, Route 1, Box 166, Shephardstown, WV 25443
Internet Information	http://www.fws.gov/r9nctc/nctc.html
Brief Description	Learn how to design a geographic information system (GIS) for a field station, region, or watershed to assist in natural resource decision making and planning. Work with other regional GIS developers to learn successful design of user-friendly systems for use by natural resource professionals. Topics include project planning, coordination, data acquisition and management, and successful implementation.
Key Words	GIS, data, habitat, ecosystem and watershed management, natural resources, USFWS, NCTC, federal

GIS Vegetative Cover Mapping (TEC7134)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists and GIS Specialists with prior experience in using GIS and GPS technology who are designing, developing or supporting a GIS with vegetation data themes
Attendance Restrictions	None
Generally When/where Offered	06/02-04/99 and 9/13-15/99 in Shepherdstown, WV.
Duration	3 days/24 hours
Cost to Attend	\$570
Contact Name	Dan Everson
Phone/fax	304-876-7453/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Use of the National Vegetation Classification System (NVCS) is now a requirement for mapping vegetation on federal lands. This course includes both field and computer lab exercises on proper field sampling design and sampling techniques. Participants design a field sampling protocol, lay out vegetation plots, use GPS receivers and other field tools and digitize vegetation boundaries using ArcView 3.0.
Key Words	fish, wildlife, training, education, computers, environment, conservation, NCTC, USFWS

Biotelemetry Techniques for Aquatic Systems (FIS2116)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	This course is primarily designed for managers who require data on animal movements, home range and habitat use.
Attendance Restrictions	None
Generally When/where Offered	3/15-19/99/Shepherdstown, WV.
Duration	5 days/38 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Alan Temple
Phone/fax	304-876-7440/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	The purpose of this course is to enable participants to determine the suitability of radio or ultrasonic biotelemetry as a research method and to plan a biotelemetry study addressing management or research questions. Topics include biotelemetry study design and data analysis, telemetry methods, telemetry system components (transmitters, batteries, receivers, hydrophones, antennas), theory for electronic signal transmission in water (electric circuit and field theory, radio propagation through water, interference), mechanical (acoustic) signal propagation through water, receiver reception range, receiver interference and frequency authorizations. Classroom activities include problems to determine radio and mechanical signal propagation distance and battery life as well as group exercises to develop study designs. Field and laboratory exercises are used to demonstrate principles of equipment operation, system component compatibility, installation, testing, receiver sensitivities, transmitter power capability, transmitter attachment techniques and data analysis.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Multivariate Statistical Analysis Techniques for Ecological Data (FIS4101)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Anyone responsible for collecting, analyzing, and/or interpreting multi-variable data.
Attendance Restrictions	Course prerequisites include one statistics course such as "Biostatistics" (FIS4105), "Sampling Design" (FIS4103), or a comparable college course. A familiarity with Windows is suggested.
Generally When/where Offered	National Conservation Training Center
Duration	5 days/38 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Alan Temple
Phone/fax	304-876-7440/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course covers a variety of descriptive and inferential multivariate statistical methods that are useful for analyzing biological data. Participants use computers to analyze ecological data and apply the various multivariate procedures covered by the instructor. Several case studies of multivariate techniques applied to field data are discussed.
Key Words	wildlife, training, education, environment, conservation, NCTC, USFWS

Principles and Techniques of Electrofishing (FIS2101)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists who have had at least some experience in electrofishing.
Attendance Restrictions	None
Generally When/where Offered	10/5-7/98 in Chattanooga, TN.
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Alan Temple
Phone/Fax	304-876-7440/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course explains the basic principles of electricity as applied to electrofishing. The goals of this course are to: 1) familiarize participants with electric circuit and field theory, system components and sampling considerations (thereby providing a framework for increasing the efficiency and standardization of electrofishing operations); 2) provide safety training; and 3) promote awareness of and methods for minimizing electrofishing-induced fish injury and stress.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Sampling Design for Field Studies (FIS4103)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Anyone involved with the design of field studies.
Attendance Restrictions	Attendees should have completed "Biostatistics" (FIS4105) or its equivalent (1-2 college statistics courses).
Generally When/where Offered	09/20-24/99 in Shepherdstown, WV.
Duration	5 days/38 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Alan Temple
Phone/fax	304-876-7440/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course addresses the sampling design and analysis of ecological studies. Topics include: common problems with field study designs, eight-step framework for effective designs, statistics review, inputting and manipulating data, considerations in sampling ecological and environmental populations, traditional and recently derived sampling designs, and use of computer programs to aid in design. Where applicable, case studies and examples are used to illustrate principles. Participants also use computers to design field studies. Statistical software is provided for classroom use.
Key Words	fish, wildlife, training, education, publications, environment, conservation, NCTC, USFWS

Basics of Working with the News Media (OUT8181)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	FWS personnel who want to improve working relationships with the media and increase public awareness of their work.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	2 days/14 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Garry Tucker
Phone/fax	304-876-7498/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Effective outreach to the news media is often the key to reaching important audiences. This course helps participants improve relationships with media representatives and generate solid positions on controversial issues carried by print journalists and broadcasters. Topics include: an overview of the information industry, good media relations, the (print and electronic) interview process, handling controversy and responding to inaccurate reporting. Course participants develop a public awareness/media outreach plan, identify key information/messages for the news media and coordinate responses on a controversial issue.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Building Community Support (OUT8111)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists, public involvement specialists, and educators who wish to obtain community support among interest groups at the local, regional or national level.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	5 days/36 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Garry Tucker
Phone/fax	304-876-7498/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Biologists agree that resource management problems are more easily solved when people become involved in the ecosystem approach. This course gives resource conservation professionals the knowledge and skills they need to build relationships of trust within local communities. Current social research is used to support strategies for greater community participation on such issues as: public and private lands, preventing conflict among resource groups, resolving conflicts among interest groups, and changing attitudes and behavior regarding wildlife resources and habitats.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC

Community-Based Consensus Building (EXC5136)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Anyone engaged in environmental consensus building.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	5 days/40 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Steph Smith
Phone/fax	304-876-7485/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course provides an in-depth focus on the process of building consensus on environmental issues involving multi-stakeholders. The context of the course is the community at large in which the conservation and protection of fish and wildlife is often contentious and best accomplished through building relationships of trust among stakeholders. The training is presented in four key modules that reflect the stages of consensus building as it is approached in the service. Those stages are: developing relationships within the community, pre-negotiation, negotiation, and agreement implementation and evaluation.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Complex Environmental Negotiations (EXC5103)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Anyone involved in multi-party agreements.
Attendance Restrictions	Recommended prerequisites: 1) Experience in multi-party negotiations; and 2) Previous negotiations training, or having read "Getting to Yes" by Fisher and Ury.
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Bonnie Schires
Phone/fax	304-876-7484/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course helps participants develop their skills for resolving multi-party environmental negotiations. Participants practice skills in analyzing complex multi-party negotiations and learn strategies for moving from confrontation to joint problem solving, resulting in mutually acceptable outcomes.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Conservation Partnerships (OUT8110)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Any employee or potential partners currently involved in partnerships who anticipate the need for partnering or are interested in learning more about appropriate partnership opportunities.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Garry Tucker
Phone/fax	304-876-7498/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Productive interagency partnerships help FWS professionals accomplish conservation goals more effectively. This course focuses on forming and managing partnerships between the Service and other entities with similar goals including government agencies, conservation groups, non-profits and landowners. Instruction emphasizes partnerships as voluntary collaborations among entities working toward common, shared objectives.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Developing Festivals and Special Events (OUT8144)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Conservation professionals who are responsible for public outreach and working with local communities.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Laura Penington-Jones
Phone/fax	304-876-7499/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Wildlife festivals and other special events showcase conservation programs, stimulate local economies and endow community members with public ownership of wildlife resources and habitats. This course helps participants learn methods of working with local communities to develop and promote special events.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Education Programs for Youth: After-School, Weekends, and Summers (OUT8162)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Employees who offer camp programs or other informal education programs for youth.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Garry Tucker
Phone/fax	304-876-7498/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course instructs participants in the elements of designing comprehensive ecosystem/wildlife study programs for youth in non-formal settings, such as wildlife refuges, outdoor camps and after school or weekend/summer programs. Participants learn about available teaching materials, teaching techniques and how to develop complete study units and programs. This course is offered in partnership with the National Wildlife Federation's NatureQuest program, which certifies and accredits specialized environmental-awareness courses for youth. Course focus is on designing and implementing complete programs on wildlife or ecosystem-related topics.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Negotiation Strategies and Techniques (EXC5102)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Any employee who negotiates on a recurring basis.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	2 days/16 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Bonnie Schires
Phone/fax	304-876-7484/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course helps participants learn to apply a "win-win," interest-based negotiating process, resulting in favorable agreements for all parties involved. The course is interactive, giving participants an opportunity to practice techniques that are presented.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Public Outreach and Education: Dealing with Controversial Issues (OUT8103)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Senior natural resource managers, educators, outdoor recreation planners and any conservation professional responsible for public outreach and working with local communities.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Michael L. Smith
Phone/fax	304-876-7495/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	This course describes and analyzes the roots of controversial natural resource issues, and offers resource managers means of spotting potential conflicts well before they become controversies. The course also explores the "crisis stage" of controversies and offers guidance on how to reach key audiences with timely communications.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Public Outreach and Education: Overview and Program Planning (OUT8101)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Biologists, outdoor recreation planners; employees involved with public affairs, partnerships, education and outreach.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	4 days/30 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Garry Tucker
Phone/fax	304-876-7498/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Conservation professionals taking a comprehensive approach to natural resource management maintain strong education and outreach programs. This course introduces education and outreach program planning in the FWS. Participants learn about education and outreach strategies and how they can support the collaborative approach to management in the FWS. The course is recommended as an introduction to the subject and for instructors of subjects related to education and outreach.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Volunteer Recruitment and Management (OUT8114)



Sponsoring Organization	U.S. Fish & Wildlife Service
Target Audience	Conservation managers with the responsibility of working with volunteer programs.
Attendance Restrictions	None
Generally When/where Offered	National Conservation Training Center
Duration	3 days/24 hours
Cost to Attend	NCTC training is provided without charge to employees of the U.S. Fish and Wildlife Service. All other participants will be charged a tuition fee.
Contact Name	Gary Stolz
Phone/fax	304-876-7454/304-876-7202
E-mail	nctc_registrar@mail.fws.gov
Mailing Address	The Registrar, USFWS-NCTC, Route 1, Box 166, Shepherdstown, WV 25443
Internet Information	www.fws.gov/r9nctc/nctc.html
Brief Description	Partnership programs are a critical factor in meeting the management objectives of the FWS. Participants in this course learn to develop and maintain strong volunteer and youth-service group programs. Discussion explores the benefits of working with volunteers as well as sensitive issues that can arise.
Key Words	fish, wildlife, training, education, outreach, environment, conservation, NCTC, USFWS

Ground-Water Flow System Analysis and Modeling



Sponsoring Organization	U.S. Geological Survey
Target Audience	Professionals in hydrology or related disciplines with knowledge of the fundamental concepts of ground-water hydrology and with intentions of conducting or evaluation modeling investigations of ground-water flow systems.
Attendance Restrictions	Employees of US Geological Survey and cooperating agencies are eligible to participate; other federal employees are permitted to attend as vacancies allow.
Generally When/Where Offered	This course is offered annually at the USGS National Training Center in Denver, CO.
Duration	The course has a pre-course assignment estimated at approximately 32 hours and a one-week session at the National Training Center.
Cost to Attend	\$100 per person per day.
Contact Name	Herb Buxton
Phone/Fax	609-771-3944/609-771-3915
E-mail	Hbuxton@usgs.gov
Mailing Address	U.S. Geological Survey, 810 Bear Tavern Road, West Trenton, NJ 08628
Internet Information	None
Brief Description	This course stresses the basic physical and mathematical concepts requisite to the effective analysis and modeling of ground-water flow systems. Emphasis is placed on developing a "system concept" approach to representation of ground-water systems, which includes formulation of conceptual models, integrating basic hydrologic data into the concept, and developing a mathematical model representation of the concept.
Key Words	ground water, modeling, resource management, monitoring, data analysis, USGS

Basic Hydraulic Principles



Sponsoring Organization	U.S. Geological Survey
Target Audience	People who want a better understanding of open channel hydraulic principles.
Attendance Restrictions	Attendance will be limited to 20. Other federal employees may attend on a space-available basis.
Generally When/Where Offered	February 22-26, 1999 and June 14-18, 1999 at the USGS National Training Center, Denver, CO.
Duration	5 days
Cost to Attend	\$100 per person per day.
Contact Name	Harvey Jobson or Robert Holmes
Phone/Fax	303-236-4932/303-236-4937
E-mail	None
Mailing Address	U.S. Geological Survey, Denver Federal Center, National Training Center, Building 53, P.O. Box 5046, Denver, CO 80225
Internet Information	N/A
Brief Description	This 1-week course combines lectures and class problems in the study of basic open channel flow. Specifically, subject matter includes forces on submerged objects, similitude, velocity profiles, resistance, the momentum principles, roughness coefficients, energy losses, backwater computation, and flow through culverts, flow over dams, and flow through weirs.
Key Words	surface water, data, USGS, federal

Modeling Flow and Transport in a Riverine Environment



Sponsoring Organization	U.S. Geological Survey
Target Audience	People who have little background in modeling but who desire to get started in the area, as well as those with significant experience, should benefit from attendance.
Attendance Restrictions	Attendance will be limited to 14. Other federal employees may attend on a space-available basis.
Generally When/Where Offered	January 25-29, 1999 at the USGS National Training Center, Denver, CO.
Duration	5 days
Cost to Attend	\$100 per person per day.
Contact Name	Harvey Jobson
Phone/Fax	303-236-4932/303-236-4937
E-mail	None
Mailing Address	U.S. Geological Survey, Denver Federal Center, National Training Center, Building 53, P.O. Box 5046, Denver, CO 80225
Internet Information	N/A
Brief Description	This 1-week course combines lectures and computer work sessions to present a one-dimensional flow and transport modeling system developed by the Water Resources Division of the U.S. Geological Survey. Applications will be presented through the use of realistic example problems. The students will set up, calibrate, and verify a one-dimensional flow model for two different rivers. The transport model will be calibrated and verified under unsteady flow conditions for two rivers using dye data. The QUAL2E reaction kinetics will be applied to simulate ten water quality constituents in the Chattahoochee River.
Key Words	surface water, data, USGS, federal

Surface Water Hydraulic Analysis



Sponsoring Organization	U.S. Geological Survey
Target Audience	Personnel who have little or no background in the principles of basic hydraulics and fluid mechanics, and hydrologists who need a review of these basic concepts.
Attendance Restrictions	Attendance will be limited to 20. Employees of U.S. Geological Survey and cooperating agencies are eligible to participate; other federal employees are permitted to attend as vacancies allow.
Generally When/Where Offered	USGS National Training Center, Denver, CO.
Duration	10 days
Cost to Attend	\$100 per person per day.
Contact Name	Janice Fulford
Phone/Fax	303-236-4932/303-236-4937
E-mail	None
Mailing Address	U.S. Geological Survey, Denver Federal Center, Geological Training Center, Building 53, P.O. Box 5046, Denver, CO 80225
Internet Information	N/A
Brief Description	Combines lectures and analysis of surface-water hydraulic problems to provide students with experience in surface-water hydraulic analysis. The major part of the course is devoted to indirect measurement of discharge using slope-area, contracted-opening, step-backwater, and culvert computations. Related topics including basic rating curve analysis, estimating roughness coefficients, and general field and office procedures also are discussed. Other hydraulic problems included in the course are: flow through control structures (weirs, dams, gates, flumes, etc.); water-surface profile computations for various situations and applications; and flow routing concepts. A very basic introduction to sediment problems also is presented. Student must have completed a Basic Hydraulic Principles course prior to enrollment.
Key Words	surface water, USGS, federal

Concepts In Aquatic Ecology



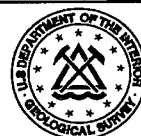
Sponsoring Organization	U.S. Geological Survey
Target Audience	Personnel directly involved in studies that incorporate ecological investigations for water quality assessment.
Attendance Restrictions	Employees of US Geological Survey and cooperating agencies are eligible to participate; other federal employees are permitted to attend as vacancies allow.
Generally When/Where Offered	April 19-23, 1999 at the USGS National Training Center, Denver, CO.
Duration	5 days
Cost to Attend	\$100 per person per day.
Contact Name	Terry M. Short
Phone/Fax	415-329-4324
E-mail	Tmshort@usgs.gov
Mailing Address	US Geological Survey, 345 Middlefield Road, Mailstop 470, Menlo Park, CA 94040
Internet Information	None
Brief Description	This course provides an overview of ecological concepts that can be applied in water quality assessments. The course will emphasize concepts and methods including discussion and demonstrations of field applications. Topics include biological approaches to water-quality assessment, current concepts in stream ecology, ecology of aquatic organisms, important environmental factors influencing stream ecosystems, contaminant dynamics such as bioaccumulation processes, and techniques for analyzing and interpreting biological data.
Key Words	ecosystem and watershed management, land use, natural resources, USGS, federal

Watershed Biogeochemistry



Sponsoring Organization	U.S. Geological Survey
Target Audience	Staff conducting or preparing to conduct water quality studies, particularly connecting stream ecosystems and watersheds. General knowledge of either the biological or geochemical processes to be covered is recommended.
Attendance Restrictions	Employees of US Geological Survey and cooperating agencies are eligible to participate; other federal employees are permitted to attend as vacancies allow.
Generally When/Where Offered	USGS National Training Center, Denver, CO.
Duration	5 days
Cost to Attend	\$100 per person per day.
Contact Name	Doug Burns
Phone/Fax	518-285-5662
E-mail	daburns@usgs.gov
Mailing Address	U.S. Geological Survey, 425 Jordan Rd., Troy, NY 12180
Internet Information	None
Brief Description	This course explores the geochemical and biochemical processes influencing the chemistry of natural waters, and focuses on making the connection between the watershed and stream ecosystems. The course begins with a review of water chemistry concepts and geochemical processes as well as terrestrial processes that impact water quality. Terrestrial-aquatic linkages are discussed along with biogeochemical transformations in the hyporheic zones and in wetlands. In-stream processes such as organo-metal complexation, sorption/desorption, ion exchange, biological uptake and release, and carbon cycling are addressed. Water chemistry modeling techniques will be presented along with statistical, thermodynamic, and mass-balance methods for interpreting water chemistry.
Key Words	watershed, surface water, water quality, water chemistry, modeling, USGS, federal

Using Habitat Evaluation Procedures (HEP) and Habitat Suitability Index (HSI) Software



Sponsoring Organization	Biological Resources Division, USGS (BRD); and Virginia Tech (VT)
Target Audience	This course is intended for personnel responsible for designing and processing field data from a HEP study, building or modifying HSI models, and using, analyzing, and interpreting results of a HEP study.
Attendance Restrictions	None, although class size is restricted to 36 minimum.
Generally When/Where Offered	Fort Collins, CO.
Duration	2 days
Cost to Attend	\$300
Contact Name	Richard Stiehl
Phone/Fax	970-226-9421/970-226-9230
E-mail	richard_stiehl@usgs.gov
Mailing Address	Biological Resources Division, Midcontinent Ecological Science Center, 4512 McMurry Ave, Fort Collins, CO 80525-3400
Internet Information	N/A
Brief Description	This course provides "hands-on" training in the use of HEP and HSI software. Participants will practice data entry, file modification, and file management and analysis using microcomputers. The course does not require a computer background or a knowledge of programming. Software and users' manuals are provided. Prerequisite: Habitat Evaluation Procedures.
Key Words	habitat, habitat suitability index, habitat evaluation procedures, management, planning, USGS, federal

Instream Flow Incremental Methodology Overview (Distance Learning)



Sponsoring Organization	USGS Biological Resources Division
Target Audience	This course is intended for supervisors, project managers, and individuals who need a first time introduction to IFIM. The course can be taken by an individual or a group of people.
Attendance Restrictions	None
Generally When/Where Offered	Video and Primer (self study course).
Duration	4 hours to view video and read primer.
Cost to Attend	\$100
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414, Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	The Instream Flow Incremental Methodology (IFIM) is a habitat-based impact assessment and water management tool used to manage fishery habitat in a stream. The course is completed through independent study through a correspondence course. A video and supporting document "A Primer for IFIM" are included. The video addresses three issues (1) when to use IFIM, (2) the planning phases of IFIM, and (3) the science behind the modeling.
Key Words	Instream Flow Incremental Methodology, surface water, modeling, habitat, fishery, aquatic ecology, watershed, planning, USGS, federal

Theory and Concepts of the Instream Flow Incremental Methodology (Distance Learning)



Sponsoring Organization	USGS Biological Resources Division
Target Audience	This course is designed for stream ecologists, fishery biologists, hydrologists, and project managers.
Attendance Restrictions	None
Generally When/Where Offered	Correspondence course (self study course).
Duration	40-60 hours, self-paced.
Cost to Attend	\$150
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414, Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	This is a correspondence course. The purpose is to provide students with an in-depth overview of all aspects of an application of the IFIM. This course presents the theory, concepts, and application logic about the five phases of IFIM: (1) problem identification, (2) study planning, (3) data collection and analysis, (4) alternative analysis, and (5) problem resolution. A course textbook and a workbook are provided. To receive a Certificate of Completion, the participant must pass a written exam.
Key Words	Instream Flow Incremental Methodology, surface water, modeling, habitat, fishery, aquatic ecology, watershed, planning, USGS, federal

Practical Applications of the Instream Flow Incremental Methodology



Sponsoring Organization	USGS Biological Resources Division
Target Audience	This course is intended for those responsible for planning alternative water delivery schedules and annual water budgets; formulating, evaluating, and negotiating mitigation or stream restoration alternatives; and conduction reviews of IFIM studies completed by external agencies or firms.
Attendance Restrictions	Class size is restricted to 16 (Min.), 20 (Max.). Prerequisite: Theory and Concepts of IFIM.
Generally When/Where Offered	To be determined.
Duration	5 days/36 hours
Cost to Attend	\$550
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414 Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	This course provides training in the use of the IFIM for impact and alternative analysis. The course is structured around the solution of case studies from problem identification to negotiating solutions. The course integrates the concepts from "Theory and Concepts of Instream Flow Methodology" through hands-on labs and tutorials and guides student interactions in the solution of various aspects of real instream flow problems. At the completion of the course, students will receive software and demonstration data used in the case studies as well as tutorials to instruct students in the use of software used in class. Experience using MS-DOS operating system and computational spreadsheets will enhance the learning experience but is not required.
Key Words	surface water, modeling, habitat, fishery, aquatic ecology, watershed, planning, Instream Flow Incremental Methodology, USGS, federal

Instream Flow Incremental Methodology Stream Habitat Sampling Techniques



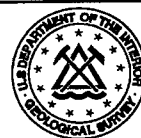
Sponsoring Organization	USGS Biological Resources Division
Target Audience	Personnel responsible for designing, conducting, or reviewing stream habitat studies. Understanding of the foundation principles and concepts of IFIM required.
Attendance Restrictions	Class size is restricted to 14 (Min.), 21 (Max.). Prerequisite: Theory and Concepts of IFIM and Practical Applications of IFIM.
Generally When/Where Offered	To be determined.
Duration	5 days/36 hours
Cost to Attend	\$600
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414 Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	This is an application course on the use of stream habitat sampling techniques and equipment required for IFIM microhabitat studies.
Key Words	modeling, habitat, sampling, data analysis, surface water, fishery, aquatic ecology, watershed, planning, Instream Flow Incremental Methodology, USGS, federal

Using the Computer-based Physical Habitat Simulation System (PHABSIM)



Sponsoring Organization	USGS Biological Resources Division
Target Audience	This course is designed for those who will be directly involved with computer modeling of physical habitat in streams.
Attendance Restrictions	Prerequisite: Theory and Concepts of IFIM and Practical Applications of IFIM.
Generally When/Where Offered	To be determined.
Duration	5 days/36 hours
Cost to Attend	\$650
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414 Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	This computer-use course presents the technical concepts, application logic, and menu of computer programs to understand why and how to use the Physical Habitat Simulation System (PHABSIM). PHABSIM simulates hydraulic relationships of numerous stream flows with water depths and velocities in rigid channel. Then it quantifies the relationship of hydraulic and channel index variables (depth, velocity, substrate, and cover) with suitability for evaluation species or water-related recreation. The model is useful when relatively steady flow is the major determinant controlling the riverine resources. Prior IBM-PC compatible experience with editors and computational spreadsheets is recommended but not required. Lecture notes, a lab workbook, and the PHABSIM software and manual are provided.
Key Words	modeling, habitat, surface water, watershed, Instream Flow Incremental Methodology, USGS, federal

Stream Temperature Modeling (Distance Learning)



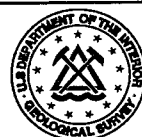
Sponsoring Organization	USGS Biological Resources Division
Target Audience	Individuals who will be directly involved with computer modeling of stream temperatures including ecologists, fishery biologists, and hydrologists, or anyone who regularly comments on proposed changes in water project operations or helps in designing impact evaluation studies.
Attendance Restrictions	None
Generally When/Where Offered	Correspondence course (self study course).
Duration	30-50 hours, self-paced.
Cost to Attend	\$150
Contact Name	Cynthia Harris
Phone/Fax	303-236-4932/303-236-4937
E-mail	cdharris@usgs.gov
Mailing Address	USGS, National Training Center, P.O. Box 25046, MS 414 Denver Federal Center, Denver, CO 80225
Internet Information	N/A
Brief Description	This course concentrates on the theory and application of water temperature modeling. Course participants will develop a knowledge of stream geometry, hydrology, and meteorology related to the understanding and prediction of stream temperatures. Topics covered include the models' assumptions and limitations, calibration and verification, troubleshooting, field data collection, parameter estimation, handling missing data, quality control, and linkage to other IFIM programs. A course notebook, temperature model software, and documentation are provided to participants. Prerequisite: Theory and Concepts of IFIM or Practical Applications of IFIM.
Key Words	modeling, data, sampling, data analysis, surface water, water quality, Instream Flow Incremental Methodology, USGS, federal

Habitat Evaluation Procedures



Sponsoring Organization	Biological Resources Division, USGS (BRD); and Virginia Tech (VT)
Target Audience	This course is intended for personnel responsible for field work and data interpretation of water resource projects, permits, license applications, and environmental assessments/impact statements; development and implementation of wildlife, forest, or overall habitat management plans; review of environmental assessments, habitat management, and mitigation.
Attendance Restrictions	None, although class size is restricted to 36 minimum.
Generally When/Where Offered	As needed; generally sponsored by one of the two sponsoring organizations.
Duration	5 days
Cost to Attend	\$695
Contact Name	Dean Stauffer
Phone/Fax	540-231-7349/540-231-7580
E-mail	dstauffer@vt.edu
Mailing Address	Department of Fisheries and Wildlife Science, Virginia Tech, Blacksburg, VA 24061-0321
Internet Information	N/A
Brief Description	This course introduces the Habitat Evaluation Procedures (HEP), a state-of-the-art technique for impact assessment and resource management. Emphasis is on the use of Habitat Suitability Index (HSI) models to assist in problem analysis, development of management plans, and decision making. Tuition includes HEP software and manuals.
Key Words	habitat, habitat suitability index, habitat evaluation procedures, management, planning, USGS, federal

Introduction to Habitat Evaluation Procedure (HEP)



Sponsoring Organization	Biological Resources Division, USGS (BRD); and Virginia Tech (VT)
Target Audience	This course is recommended for biologists, resource specialists, and planners who will be involved in HEP studies in the near future, and those who completed the HEP course prior to 1989 and need an update, or those wishing an overview of HEP.
Attendance Restrictions	None, although class size is restricted to 25 maximum.
Generally When/Where Offered	With at least three months advance notice, this course can be conducted at a requested location pending instructor availability (sponsored by BRD).
Duration	2 days
Cost to Attend	TBA
Contact Name	Richard Stiehl
Phone/Fax	970-226-9421/970-226-9230
E-mail	richard_stiehl@usgs.gov
Mailing Address	Biological Resources Division, Midcontinent Ecological Science Center, 4512 McMurry Avenue, Fort Collins, CO 80525-3400
Internet Information	N/A
Brief Description	<p>This course is designed for those who have taken "Habitat Evaluation Procedures" but have not used their training or applied HEP in the past two to three years, or wish an overview of HEP. The course includes:</p> <ul style="list-style-type: none">• Comprehensive summary of HEP• Recent modifications and innovations in HSI models• Software use• HEP data analysis and interpretation• Review of HEP teamwork
Key Words	habitat, habitat suitability index, habitat evaluation procedures, management, planning, USGS, federal

Field Water-Quality Methods for Ground Water and Surface Water



Sponsoring Organization	U.S. Geological Survey
Target Audience	Water resource hydrologists and technicians.
Attendance Restrictions	Employees of U.S. Geological Survey and cooperating agencies are eligible to participate; other federal employees are permitted to attend as vacancies allow.
Generally When/Where Offered	Offered in April and July at the USGS National Training Center, Denver, CO.
Duration	2 weeks (10 days)
Cost to Attend	\$100 per person per day.
Contact Name	Kathy Fitzgerald
Phone/Fax	703-648-6902/703-648-5722
E-mail	kkfitz@usgs.gov
Mailing Address	U.S. Geological Survey, 412 National Center, Reston, VA 20192
Internet Information	http://ntc1serv.cr.usgs.gov/index.html
Brief Description	This course introduces trainees to US Geological Survey methodologies for (1) sampling and field handling of ground and surface waters, bed sediments, and suspended sediment and (2) commonly made field water-quality measurements. Also described are sample collection and field handling techniques for trace elements, nutrients, major ions, isotopes, and microorganisms as well as the theory, methodology, and equipment used to measure water temperature, dissolved oxygen, specific conductance, pH, alkalinity, total coliform bacteria, E. coli, etc.
Key Words	ground water, surface water, monitoring, water quality, sampling, USGS, federal

Aquatic's Sampling Training Course

LCSWCD

Sponsoring Organization	Lewis County Soil and Water Conservation District
Target Audience	Teachers and adult youth group leaders.
Attendance Restrictions	Limited to 30 participants.
Generally When/Where Offered	Lewis County, New York (Spring & Fall).
Duration	1 day
Cost to Attend	All costs covered by the District.
Contact Name	John Stewart
Phone/Fax	315-376-6122/315-376-8717
E-mail	lcswcd@northnet.org
Mailing Address	Lewis County Soil and Water Conservation District, P.O. Box 57, Lowville, New York 13367
Internet Information	Homepage coming soon.
Brief Description	This training offers hands-on techniques for water quality and macroinvertebrates sampling. Course materials and lunch are free.
Key Words	training, macroinvertebrate sampling

Sponsoring Organization	Napa County Resource Conservation District
Target Audience	Federal agencies, communities, localities, states, and tribes.
Attendance Restrictions	Inquire via contact.
Generally When/Where Offered	The course is offered year round primarily in California, Arizona, New Mexico, and New England. Occasionally the course is presented in other states.
Duration	2-5 days
Cost to Attend	Varies.
Contact Name	Dennis Bowker
Phone/Fax	707-252-4188/ 707-252-4219
E-mail	NapaRCD@compuserve.com
Mailing Address	Napa County Resource Conservation District, 1303 Jefferson St., Suite 500B, Napa, CA 94559
Internet Information	None
Brief Description	Stewardship-based approach to watershed planning and management that emphasizes collaboration using interest-based methods. Napa RCD's training classes have been provided to more than 2,000 stakeholders across the U.S. to help establish common strategies for effective watershed management even where common ground does not exist.
Key Words	ecosystem and watershed management, communication, partnerships, public education, public outreach, planning local government, federal

Sponsoring Organization	Center for Watershed Protection
Target Audience	This course is intended for municipal officials, plan reviewers, engineers, and other planning professionals.
Attendance Restrictions	None
Generally When/Where Offered	Courses are offered throughout the year; courses publicized on webpage and trade journals.
Duration	1-2 days
Cost to Attend	Varies.
Contact Name	Center for Watershed Protection
Phone/Fax	410-461-8323/410-461-8324
E-mail	mrrunoff@pipeline.com
Mailing Address	Center for Watershed Protection, 8391 Main Street, Ellicott City, MD 21043
Internet Information	http://www.pipeline.com/~mrrunoff/
Brief Description	Courses offered have two primary focuses: one on watershed planning and the other better site design. Watershed planning is generally a 1-day interactive course with half a day lecture demonstrating the elements of effective watershed planning and a half day interactive watershed planning exercise with course participants. The site design element is also generally a 1-day interactive course including a half day lecture demonstrating the principles of smart/more effective site design techniques (narrower streets, more compact development, preservation of open space). The second half day is an interactive site design example applying the principles.
Key Words	watershed planning, site design, smart growth

Sponsoring Organization	Know Your Watershed (Coordinated by the Conservation Technology Information Center)
Target Audience	Potential watershed coordinators.
Attendance Restrictions	10 people (Min.)/ 40 people (Max.)
Generally When/Where Offered	On demand.
Duration	1-2 Days, depending on depth requested.
Cost to Attend	Negotiated depending on location, length, etc.
Contact Name	Lyn Kirschner
Phone/Fax	765-494-9555/765-494-5969
E-mail	kyw@ctic.purdue.edu
Mailing Address	CTIC, 1220 Potter Dr., Room 170, W Lafayette, IN 47906
Internet Information	None
Brief Description	Provides participants with information and knowledge needed to begin watershed facilitation processes. Exercises, transparencies, checklists, and other sources of information included in take-home handbook: True Watershed Facilitator/Coordinator Training.
Key Words	watershed, coordinator, facilitator, partnership, volunteer, local government, state, agriculture, CTIC

Sponsoring Organization	Ecosystem Recovery Institute, Inc.
Target Audience	This course is intended for local government officials and civic and educational organizations.
Attendance Restrictions	Limited to 50 participants per class.
Generally When/Where Offered	As requested.
Duration	1 day
Cost to Attend	\$105
Contact Name	Michael Hollins
Phone/Fax	717-235-8426/717-227-0484
E-mail	recins@aol.com
Mailing Address	Ecosystem Recovery Institute, Inc., P.O. Box 249, Freeland, MD 21053
Internet Information	N/A
Brief Description	An overview of current trends and practices in stream and riparian management and restoration. Introduces stream function and watershed relationships; strategies to maintain and restore stream quality. Topics include: assessing the need for restoration; prioritizing restoration efforts; technical and regulatory issues; implementation frameworks; building teams and partnerships; cost-effective strategies and solutions. Format: case studies and project examples. Emphasis on audience participation and roundtable discussion.
Key Words	stream, riparian, restoration, stewardship

Sponsoring Organization	Ecosystem Recovery Institute, Inc.
Target Audience	Natural resource managers, field technicians, conservation districts.
Attendance Restrictions	Limited to 25 participants per class.
Generally When/Where Offered	As requested.
Duration	3-4 days
Cost to Attend	\$865
Contact Name	Michael Hollins
Phone/Fax	717-235-8426/717-227-0484
E-mail	recins@aol.com
Mailing Address	Ecosystem Recovery Institute, Inc., P.O. Box 249, Freeland, MD 21053
Internet Information	N/A
Brief Description	Presents a suite of inventory techniques and assessment methodologies used to evaluate and monitor physical and biological stream conditions. Introduces the purpose and function of individual methodologies, field equipment, and data collection protocols. Watershed and stream assessment techniques; identifying problems, needs and restoration opportunities; prioritizing restoration efforts; developing restoration strategies. Emphasis on cost-effective, practicable approaches. Format: classroom and field format.
Key Words	stream assessment

Move it But Don't Lose It: Practical and Profitable Tips for Earth Moving Activities

IECA

Sponsoring Organization	International Erosion Control Association
Target Audience	This course is recommended for contractors, regulators, designers, landscape architects, and engineers who seek better approaches for controlling construction site erosion and reducing the problems associated with sedimentation.
Attendance Restrictions	Not to exceed 100 participants.
Generally When/Where Offered	International Erosion Control Association (IECA) 30 th Annual Conference and Trade Exposition Investing in the Protection of Our Environment, February 22-26, 1999 in Nashville, TN.
Duration	February 23, 8:00AM-4:00PM.
Cost to Attend	\$129 IECA members/\$149 non-members (includes course notebook and lunch).
Contact Name	Tracy Zuschlag, IECA Conference Director
Phone/Fax	800-455-4322 or 970-879-3010/970-879-8563
E-mail	ecinfo@ieac.org
Mailing Address	IECA, P.O. Box 4904, Steamboat Springs, CO 80477
Internet Information	http://www.ieca.org
Brief Description	Site preparation is the first stage of a construction project's "erosion risk." This course takes a unique look at erosion control by teaching basic earth moving principles that can minimize erosion risk and maximize cost effectiveness. This course will give you practical tips on how to avoid common earth moving mistakes that often cause unnecessary erosion and sedimentation problems. You will also examine the team approach that involves regulatory, financial and enforcement elements. You will learn how earth moving activities can make the difference between a compliance nightmare and an environmental success.
Key Words	erosion control, regulatory, earth moving activity

Stream Restoration Training Sessions

NASCC

Sponsoring Organization	National Association of Service and Conservation Corps (NASCC) (supported by the National Fish and Wildlife Foundation and other local funders)
Target Audience	Project coordinators and senior crew supervisors of youth corps programs.
Attendance Restrictions	NASCC member programs and local watershed association members.
Generally When/Where Offered	This is the fifth in a series of regional training sessions that NASCC has conducted with major funding from the National Fish and Wildlife Foundation. This course will be held April 1999. Since these are hands-on, feet-in training sessions, they are timed to the local growing season.
Duration	The sessions start with an informal reception on Sunday evening. Training manuals are handed out and introductions are made and last minute announcements are made. Actual training sessions run from Monday morning to Thursday afternoon. Most days end around 4:00PM.
Cost to Attend	Transportation to and from the training and some dinners are the responsibility of the participants. NASCC covers the training manual and all workshop costs, breakfast, and lunch during the training and at least one dinner.
Contact Name	Michael Duplechain or Andrew Moore
Phone/Fax	202-737-6272/202-737-6277
E-mail	mduplechain@nascc.org or amoore@nascc.org
Mailing Address	NASCC, 666 11th Street, NW, Suite 1000, Washington, DC 20001
Internet Information	http://www.nascc.org
Brief Description	This training session is designed as a "train the trainer" workshop, so that staff can go back to their programs and train their colleagues. Some of the topics covered are site inventory, analysis, mapping and design principles; state-of-the-art bio-engineering methods for habitat restoration, erosion control, and flood-proofing; using native plant materials; basic hydrology and stream morphology; community maintenance and monitoring partnerships; adapting techniques to corps and crew management issues. Local resource people are used as much as possible; these may include National Park Service personnel, state or county foresters, hydrologists as well as local watershed association members.
Key Words	mapping, design principles, habitat restoration, erosion control, analysis, NASCC

Sponsoring Organization	Wildland Hydrology Associates, Inc.
Target Audience	Hydrologists, engineers, fisheries biologists, water resource planners and other specialists involved in water resource management and research; aquatic habitat assessment and improvement; river and water quality determinations; cumulative impact assessment, evaluation of riparian ecosystems; and watershed analysis.
Attendance Restrictions	None
Generally When/Where Offered	Several times per year in Pagosa Springs, CO.
Duration	5 days
Cost to Attend	\$1250
Contact Name	Dave Rosgen
Phone/Fax	970-731-6100/970-731-6105
E-mail	wildlandhydrology@pagosasprings.net
Mailing Address	Wildland Hydrology Associates, Inc., 1481 Steven's Lake Road, Pagosa Springs, CO 81147
Internet Information	http://wildlandhydrology.com
Brief Description	This introductory course is designed to familiarize students with the fundamentals of river behavior and the general principles in fluvial morphology, sedimentation, hydraulics, and streambank erosion. Applications of these principles are shown utilizing a stream classification system. Problem solving techniques for watershed management, stream restoration, nonpoint source pollution and integration of ecosystem concepts in watershed management are presented. A combination of both lecture and field applications are provided. This course is a prerequisite for the more advanced river courses II, III, and IV.
Key Words	ecosystem and watershed management, surface water, nonpoint source pollution, stream restoration, private offering

Sponsoring Organization	Wildland Hydrology Associates, Inc.
Target Audience	Hydrologists, engineers, fisheries biologists, water resource planners and other specialists involved in water resource management and research; aquatic habitat assessment and improvement; river and water quality determination; cumulative impact assessment, evaluation of riparian ecosystems; and watershed analysis.
Attendance Restrictions	None
Generally When/Where Offered	Pagosa Springs, CO.
Duration	10 days
Cost to Attend	\$2400
Contact Name	Dave Rosgen
Phone/Fax	970-731-6100/970-731-6105
E-mail	wildlandhydrology@pagosasprings.net
Mailing Address	Wildland Hydrology Associates, Inc., 1481 Steven's Lake Road, Pagosa Springs, CO 81147
Internet Information	http://wildlandhydrology.com
Brief Description	This course is designed for professional engineers with an objective of integrating principles of fluvial geomorphology into engineering practice. The instruction is designed as a quantitative approach which will provide instruction on application schemes and river stabilization methods. Updated and new prediction procedures including sediment transport relations, bridge and culvert design, pier scour and natural channel design procedures will be presented. Traditional engineering methods will be compared to the geomorphic approach in flood control works, urban drainage, river restoration and river management.
Key Words	ecosystem and watershed management, surface water, geomorphology, bank stabilization, stream restoration, private offering

Natural Channel Design and River Restoration

Consultant

Sponsoring Organization	Wildland Hydrology Associates, Inc.
Target Audience	Hydrologists, engineers, fisheries biologists, water resource planners and other specialists involved in water resource management and research; aquatic habitat assessment and improvement; river and water quality determination; cumulative impact assessment, evaluation of riparian ecosystems; and watershed analysis.
Attendance Restrictions	Prerequisite: Applied Fluvial Morphology (see listing in catalog), River Morphology (see listing in catalog), and River Assessment (see listing in catalog).
Generally When/Where Offered	One time per year in Pagosa Springs, CO.
Duration	9 days
Cost to Attend	\$2400
Contact Name	Dave Rosgen
Phone/Fax	970-731-6100/970-731-6105
E-mail	wildlandhydrology@pagosasprings.net
Mailing Address	Wildland Hydrology Associates, Inc., 1481 Steven's Lake Road, Pagosa Springs, CO 81147
Internet Information	http://wildlandhydrology.com
Brief Description	Course provides training in river restoration, stabilization, and fish habitat enhancement. Course will include: (1) collecting and analyzing field data; (2) completing a river restoration design; (3) channel capacity and sediment transport calculations; (4) fish habitat improvement designs; (5) streambank stabilization techniques; (6) stream diversion structure design; (7) riparian area improvement and function (8) construction contracting; (9) design layout; (10) field supervision; (11) permit applications; (12) effectiveness monitoring; (13) other related subjects integrated into the river designs. Check lists and procedural guidelines will be provided to assist in river designs. Participants will evaluate existing and proposed restoration projects and observe the on-site implementation of several designs to be constructed as part of this course.
Key Words	ecosystem and watershed management, surface water, data collection, data analysis, bank stabilization, stream restoration, fishery, regulations, private offering

Sponsoring Organization	Wildland Hydrology Associates, Inc.
Target Audience	Hydrologist, engineers, fisheries biologists, water resource planners and other specialists involved in water resource management and research; aquatic habitat assessment and improvement; river and water quality determination; cumulative impact assessment, evaluation of riparian ecosystems; and watershed analysis.
Attendance Restrictions	Prerequisite: Applied Fluvial Morphology (see listing in catalog) and River Morphology (see listing in catalog).
Generally When/Where Offered	Two times per year in Pagosa Springs, CO.
Duration	5 days
Cost to Attend	\$1250
Contact Name	Dave Rosgen
Phone/Fax	970-731-6100/970-731-6105
E-mail	wildlandhydrology@pagosasprings.net
Mailing Address	Wildland Hydrology Associates, Inc., 1481 Steven's Lake Road, Pagosa Springs, CO 81147
Internet Information	http://wildlandhydrology.com
Brief Description	This course is designed to train individuals in field data collection methods and analysis techniques for (1) determining stream channel stability, streambank erosion prediction and measurement; (2) stream potential versus existing condition; (3) influence of riparian vegetation on channel stability; and (4) integration of ecosystem management concepts into field applications. Monitoring of vertical and horizontal stability, channel materials, sediment transport and hydraulics will be presented. The course includes: "hands on" techniques for field measurements, data analysis and interpretations and permanent "bench mark" transects for verification and time trend analysis. Design and application of monitoring objectives and methods for the collection and analysis of suspended and bedload sediment will also be included.
Key Words	ecosystem and watershed management, monitoring, data collection, data analysis, surface water, fishery, private offering

Sponsoring Organization	Wildland Hydrology Associates, Inc.
Target Audience	Hydrologists, engineers, fisheries biologists, water resource planners and other specialists involved in water resource management/research; aquatic habitat assessment; water quality determination; cumulative impact assessment, evaluation of riparian ecosystems; and watershed analysis.
Attendance Restrictions	Prerequisite: Applied Fluvial Morphology (see course listing in catalog).
Generally When/Where Offered	Three times per year in Pagosa Springs, CO.
Duration	5 days
Cost to Attend	\$1250
Contact Name	Dave Rosgen
Phone/Fax	970-731-6100/970-731-6105
E-mail	wildlandhydrology@pagosasprings.net
Mailing Address	Wildland Hydrology Associates, Inc., 1481 Steven's Lake Road, Pagosa Springs, CO 81147
Internet Information	http://wildlandhydrology.com
Brief Description	This course is designed to train individuals to recognize and delineate stream types using the method as published in "A Classification of Natural Rivers" (Rosgen, 1994). Course will provide practical experience in: (1) integrating fluvial geomorphology concepts with problem solving techniques, (2) learning and mapping land forms, land types and valley types, (3) pre-mapping stream types on aerial photos and topographic maps, (4) field validation of the bankfull stage at a USGS stream gauging station, (5) field methods to establish a reference reach and properly measure the morphological variables including the dimension, pattern, and profile of the river, (6) field visits to all stream types, (7) ecosystem management applications using stream types such as: fish habitat structure evaluation; riparian management/grazing methods; watershed assessments; hydraulic and sediment relations; and engineering design concepts.
Key Words	ecosystem and watershed management, surface water, nonpoint source pollution, fishery, private offering

Headwater Watershed Ecology

YA

Sponsoring Organization	Yellowstone Association
Target Audience	Interested public and K-12 teachers.
Attendance Restrictions	Class limited to 15 people.
Generally When/Where Offered	Mid-July/Yellowstone Institute, Lamar Valley Yellowstone National Park.
Duration	3 days
Cost to Attend	\$155
Contact Name	Pam Gontz and Roy Mink
Phone/Fax	307-344-2294/307-344-2485 and 208-845-6429/208-845-6431
E-mail	iwrrri@uidaho.edu
Mailing Address	Yellowstone Association, P.O. Box 117, Yellowstone National Park, WY 82190; and Idaho Water Institute, Room 205, Merrill Hall, University of Idaho, Moscow, ID 83843
Internet Information	http://www.nps.gov/yell/ya/yellasn.htm
Brief Description	The course goal is to understand the concept of a watershed and how each aspect of the ecosystem interrelates with every other. The course uses the relationship of the stream macroinvertebrates and riparian systems as indicators of stream health. The course looks at the effects of fires and wildlife on Yellowstone watersheds.
Key Words	watershed, headwaters, Yellowstone Association, stream quality

Sponsoring Organization	Department of Forest Resources, Clemson University
Target Audience	Natural resource managers, regulators and scientists, especially biologists, silviculturists, and other natural resource professionals.
Attendance Restrictions	None
Generally When/Where Offered	Annually in September, Clemson University/Litchfield Beach, South Carolina.
Duration	2 weeks
Cost to Attend	\$2500 (includes tuition, food, lodging, local transportation, and supplies).
Contact Name	Dr. Charles A. Gresham
Phone/Fax	843-546-1013/843-546-6296
E-mail	CGRSHM@Clemson.edu
Mailing Address	Baruch Forest Science Institute, P.O. Box 596, Georgetown, SC 29442
Internet Information	http://www.zmariner.com/fs/ce/ctechnical.html
Brief Description	This course defines Ecosystem Management and provides concepts and operational techniques that will enable a resource manager to apply ecosystem management principles. Although forest ecosystems are emphasized, aquatic ecosystems are also discussed.
Key Words	ecosystem management, landscape ecology, aquatic monitoring, adaptive management, habitat, forestry, silviculture, planning, university, forest service, Clemson University

Design of Water Quality Monitoring Networks

CSU

Sponsoring Organization	Colorado State University, Office of Conference Services
Target Audience	Persons actively involved in the design, operation, and/or management of a water quality monitoring network for surface and subsurface monitoring.
Attendance Restrictions	None
Generally When/Where Offered	Colorado State University, Fort Collins, CO
Duration	2 weeks in June (Annually).
Cost to Attend	\$995
Contact Name	Tom Sanders
Phone/Fax	970-491-5448/970-491-7727
E-mail	TGS@engr.colostate.edu
Mailing Address	Colorado State University, Office of Conference Services, Fort Collins, CO 80523
Internet Information	http://www.engr.colostate.edu/depts/ce
Brief Description	This course begins with a review of statistics and the use of statistics in analyzing water quality data, the ramifications of such analysis on the design of entire monitoring systems including sampling frequency, sampling locations, measurement techniques, data reporting formats, data storage and retrieval methods. Additional topics include the effects of correlations, seasonality, and non-detects on monitoring network design.
Key Words	monitoring, surface water, water quality, statistics, sampling, data collection, data analysis, university

***A Seminar Series in Land Management and Construction Phasing,
Sequence and Methods, for an Earth Activity***

CC

Sponsoring Organization	Cook College Office of Continuing Professional Education and Earth Management: The Team Concept, John Deering, Founder
Target Audience	Owner of record, mortgage lender, attorneys, all regulatory agencies, resource managers, design professional(s), developers, contractors, utilities.
Attendance Restrictions	None
Generally When/Where Offered	Spring and Fall of 1999, Rutgers University, Cook College, New Brunswick, NJ.
Duration	Spring, 3 courses at 6 hours each; Fall, 3 courses at 6 hours each.
Cost to Attend	Approximately \$195 for each course. Call for details for full series cost.
Contact Name	Brian Szura, Program Coordinator, Cook College
Phone/Fax	732-932-9271/732-932-1187
E-mail	ocpe@aesop.rutgers.edu
Mailing Address	Cook College, Office of Continuing Professional Education, Rutgers University, 102 Ryders Lane, New Brunswick, New Jersey 08901-8519
Internet Information	http://www.cook.rutgers.edu/ocpe
Brief Description	Watershed, ground water and water quality are the priority issues in this seminar series. The full understanding of an earth moving activity will be the focus, from management, clearing, stripping, excavation, drainage, utilities, grading, soil erosion and sediment control(s), wetland mitigation/dewatering.
Key Words	watershed, ground water, water quality, application, phasing, sequence, methods, standards of care, due diligence, compliance and land management

Sponsoring Organization	North Carolina State University
Target Audience	Hydrologists and natural resource management professionals.
Attendance Restrictions	Background in water resources, field survey experience, ability to participate in field training.
Generally When/Where Offered	Variable
Duration	2 days
Cost to Attend	Variable
Contact Name	Greg Jennings
Phone/Fax	919-515-6795/919-515-6772
E-mail	Greg_Jennings@ncsu.edu
Mailing Address	Biological and Agricultural Engineering, North Carolina State University, 214 Weaver Labs, Box 7625, Raleigh, NC 27695-7625
Internet Information	http://www.bae.ncsu.edu/people/faculty/jennings
Brief Description	Participants gain hands-on experience in monitoring physical characteristics of streams and designing natural channel restoration. Workshop topics include stream classification, stability assessment, reference reach data collection, restoration design principles, bioengineering techniques for streambank stabilization, natural channel construction techniques, and sediment transport monitoring.
Key Words	stream restoration, natural channel design, sediment transport, bioengineering

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Engineers, technicians, landscape architects, contractors, field inspectors, permit writers, and professionals in private industry and government with environmental and regulatory responsibilities.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn to design effective sediment and stormwater control systems to protect the environment and meet regulatory standards.
Key Words	environment, stormwater, sediment, hydrology, erosion protection, channels, basins, traps, barriers and countermeasures, SPPC

Environmental Compliance for Marginal Well Producers

OSU

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Marginal well owners and operators, professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn environmental regulations and auditing procedures to minimize environmental problems at marginal well oil production site operations.
Key Words	Safe Drinking Water Act, Oil Pollution Act, Wellhead, marginal well operations

Oil Pollution Prevention Preparedness and Planning

OSU

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered on-site around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn regulations and procedures for protecting against environmental contamination at oil well production sites and oil storage/transfer facilities.
Key Words	Safe Drinking Water Act, Oil Pollution Act, wellhead, spill prevention and countermeasures, SPPC

Source Water Protection (Safe Drinking Water Act)**OSU**

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn regulations and procedures for protecting the sources of drinking water.
Key Words	Safe Drinking Water Act, Oil Pollution Act, wellhead, spill prevention and countermeasures, SPPC

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Understand the environmental compliance regulations and technical concepts involved in ground water management.
Key Words	underground water, ground water, Oil Pollution Act, ground water remediation

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Understand the environmental compliance regulations and technical concepts involved in surface water management.
Key Words	watershed management, watershed planning, surface water management

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors; a variation of the course is available to field operators.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn regulations and procedures for safeguarding the environment from operating oil wells/wellheads and correct procedures for reporting and closing nonoperating wellheads.
Key Words	Safe Drinking Water Act, Oil Pollution Act, wellhead, spill prevention and countermeasures, SPPC

Sponsoring Organization	Oklahoma State University Engineering Extension
Target Audience	Professionals in private industry and government with environmental responsibilities including environmental managers, environmental consultants, environmental engineers, and regulators/field inspectors.
Attendance Restrictions	None
Generally When/Where Offered	May be offered onsite around the country.
Duration	1-2 days, customized to audience's needs.
Cost to Attend	Public: \$195 per person per day. Onsite: quoted upon request.
Contact Name	George Collington
Phone/Fax	405-744-5714/405-744-5369
E-mail	gcollin@okway.okstate.edu
Mailing Address	OSU Engineering Extension, 512 E.N., Stillwater, OK 74078
Internet Information	None
Brief Description	Learn correct procedures for obtaining accurate, secure gathering of high-confidence field samples.
Key Words	environmental sampling, testing, field sampling

Sponsoring Organization	UBC Continuing Studies, University of British Columbia, Vancouver, B.C. Canada
Target Audience	Practicing professionals, graduate students, and others working in resource management.
Attendance Restrictions	Participants should have a bachelor's degree in a related area such as earth sciences, environmental engineering, resource management, or environmental science. Those with backgrounds in planning, economics, and policy analysis who are comfortable with scientific information and descriptions of quantitative analysis techniques will also find the course of interest. Participants need access to a suitable computer and the Internet.
Generally When/Where Offered	Fall/Spring via CD-ROM and Internet (distance education).
Duration	14 weeks
Cost to Attend	\$637 Canadian
Contact Name	Hans Schreier
Phone/Fax	604-822-4401/604-822-9250
E-mail	star@interchange.ubc.ca
Mailing Address	Resource Management and Environmental Studies, University of British Columbia, Rm 436E 2206 East Mall, Vancouver, B.C. Canada V6T 1Z3
Internet Information	http://rmes.cstudies.ubc.ca or http://www.ire.ubc.ca/courses/inf_reg.htm
Brief Description	Integrated Watershed Management is a graduate level course delivered via CD-ROM, Internet bulletin board, and e-mail. The course adopts an interdisciplinary approach with the guiding principle that water quality and quantity are indicators of environmental health. Topics covered include methods, techniques and tools, hydrology, sediments, water quality, aquatic biota, governance, land use interactions, and community based approaches. Three case studies are included that illustrate the principles and practices applied. The course is available for academic credit, diploma, or non-credit.
Key Words	watershed management, distance education, CD-ROM, Internet, interdisciplinary

Ponds, Lakes, and Dams, Seminar Series/Land Management: Soil Erosion and Sediment Control Measures

UC

Sponsoring Organization	University of Connecticut, IPS and Earth Management: The Team Concept
Target Audience	State department of transportation, municipal (city and town) department of public works, environmental and regulatory agencies and permit commissions, golf course superintendents, landscape architects/designers, engineers, USDA/NRCS, and landowners.
Attendance Restrictions	Not to exceed 50 participants.
Generally When/Where Offered	Spring and Fall of 1999, University of Connecticut Campus locations at; Storrs, W. Hartford, Waterbury, Torrington, Stamford and Groton.
Duration	1 day
Cost to Attend	\$85 (estimated for 1999)
Contact Name	Anita P. Calder, Program Coordinator, Institute of Public Service, The University of Connecticut
Phone/Fax	860-486-2828/860-486-5221
E-mail	acalder@access.ced.uconn.edu
Mailing Address	University of Connecticut, One Bishop Circle, U-14, Storrs, CT 06269-4014
Internet Information	http://vm.uconn.edu/~wwwece/ips.html
Brief Description	Ponds, lakes, and dams present a challenge to the Owner of Record. While variable in size, their unique and dynamic ecological existence require sensitive maintenance measures during the time of restoration and enhancement. This course will focus on dredging, dewatering, site preparation, weed harvesting, lake management, dam safety and maintenance, regulatory acceptance and compliance, plus soil erosion and sediment control measures.
Key Words	nonpoint source pollution awareness, preventive measures, UConn

Drainage System Design

UWM

Sponsoring Organization	University of Wisconsin-Madison, Department of Engineering Professional Development
Target Audience	Engineers and technicians that design or review stormwater projects.
Attendance Restrictions	Maximum class size of 30.
Generally When/Where Offered	October 25-28, 1999 in Madison, WI; November 8-11, 1999 in Charlotte, NC; and November 29-December 2, 1999 in Las Vegas, NV.
Duration	4 days
Cost to Attend	\$995
Contact Name	Stephen Pudloski
Phone/Fax	800-462-0876/608-263-3160
E-mail	custserv@epd.engr.wisc.edu
Mailing Address	Department of Engineering Professional Development, University of Wisconsin-Madison, 432 N. Lake Street, Madison, WI 53706-1498
Internet Information	http://epdwww.engr.wisc.edu
Brief Description	This course covers hydraulic principles, culvert design, inlet design, open channel design, pipe systems, and drainage system analysis.
Key Words	culvert design, inlet design, open channel design, pipeline systems, hydraulic principles, outlet structure hydraulics

Planning and Engineering Dam Projects (Removal and Rehabilitation)

UWM

Sponsoring Organization	University of Wisconsin-Madison-Engineering Professional Development
Target Audience	Design engineers, project managers, regulatory staff, owners, public sector professionals, planners.
Attendance Restrictions	None
Generally When/Where Offered	December 7-9, 1998 in Madison, WI.
Duration	3 days
Cost to Attend	\$895
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	This course will evaluate all aspects of a dam removal or rehabilitation project. It will address engineering and management issues associated with small and large dams, concrete, and embankment dams. Participants will hear from speakers from around the country and gain a national perspective on this critical topic.
Key Words	dams, engineering, planning

Stormwater Detention Basin Design

UWM

Sponsoring Organization	University of Wisconsin-Madison, Department of Engineering Professional Development
Target Audience	Engineers responsible for designing or reviewing detention basin designs.
Attendance Restrictions	Maximum class size of 30.
Generally When/Where Offered	March 1-4, 1999 in Austin, TX; March 29-April 1, 1999 in Washington, DC; and April 26-29, 1999 in Boulder, CO.
Duration	4 days
Cost to Attend	\$995
Contact Name	Stephen Pudloski
Phone/Fax	800-462-0876/608-263-3160
E-mail	custserv@epd.engr.wisc.edu
Mailing Address	Department of Engineering Professional Development, University of Wisconsin-Madison, 432 N. Lake Street, Madison, WI 53706
Internet Information	http://epdwww.engr.wisc.edu
Brief Description	This course provides an in-depth focus on hydrographs and detention design concepts, outlet structure hydraulics, facility sizing and location, multi-use basin design, and water quality considerations.
Key Words	detention basin outlet design, multi-use basin design, water quality considerations in detention basins

Sponsoring Organization	University of Wisconsin-Madison-Engineering Professional Development
Target Audience	Design engineers, technicians who work on stormwater, site developers, landscape architects, planners, regulators.
Attendance Restrictions	None
Generally When/Where Offered	February 1-3, 1999 in Madison, WI.
Duration	2 or 3 days
Cost to Attend	\$895
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	<p>This course will teach engineers how to incorporate biotechnical engineering and soil bioengineering approaches into their designs without sacrificing performance by using the proper stream channel design parameters. In addition, this course will teach engineers faced with an in-stream erosion problem to ask whether this is a local problem or part of a larger watershed condition.</p> <p>This course faculty have been involved in stormwater channel design and stream research for many years and will share with you their practical experience.</p>
Key Words	channel design, rehabilitation, stream channel

Incorporating Water Quality into Stormwater Design

UWM

Sponsoring Organization	University of Wisconsin-Madison Engineering Professional Development
Target Audience	Design engineers, architects, contractors, developers, regulators, reviewers, regional planning staff, and city or county staff involved with stormwater management responsibilities will benefit by attending this course. The ability to estimate design flows will be useful for this course.
Attendance Restrictions	None
Generally When/Where Offered	April 1999 in Madison, WI.
Duration	3 days
Cost to Attend	\$895
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	<p>This course will focus on how to incorporate water quality into stormwater design. Through lecture/discussion, case studies, and hands-on class problems participants will:</p> <ul style="list-style-type: none">• study design approaches and practices• examine design applications in new developments and retrofitting into existing urban areas• look at new innovative and emerging techniques for stormwater quality improvement <p>This course has been offered successfully since 1990. Revised and updated with each offering, the course includes a new session on emerging management practices, including stormwater filter system design and alternative landscaping practices for improved infiltration.</p> <p>In addition to a course notebook, you will receive a copy of DETPOND software. If available at the time of the course, the new book <i>Stormwater Quality Management</i> by Robert Pitt will also be included.</p>
Key Words	water quality, stormwater design, management practices

Creating and Using Wetlands for Wastewater and Stormwater Treatment and Water Quality Improvement

UWM

Sponsoring Organization	University of Wisconsin-Madison Engineering Professional Development
Target Audience	Environmental, civil, and wastewater engineers; biologists, environmental scientists.
Attendance Restrictions	None
Generally When/Where Offered	April 1999 in Madison, WI.
Duration	3 days
Cost to Attend	\$895
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	<p>This course will introduce participants to some of the latest proven technologies that can be applied to the creation and use of wetlands for wastewater and stormwater treatment and improvement of water quality. Participants will learn about:</p> <ul style="list-style-type: none">• wastewater and stormwater• treatment wetlands• hydrological and chemical tools• pollutant reduction• nutrient reduction• treatment wetland sizing, design, costing, and operation and maintenance <p>The instructors will present several case histories on a variety of treatment wetlands, including:</p> <ul style="list-style-type: none">• surface flow system• subsurface flow system• natural wetlands• integrated nutrient system
Key Words	wetlands, wastewater treatment, stormwater, water quality

**Using HEC-RAS to Compute Water Surface Profiles for Floodplains,
Bridge
and Culvert Hydraulics**

UWM

Sponsoring Organization	University of Wisconsin-Madison Department of Engineering Professional Development
Target Audience	Engineers working with river hydraulics, and bridge and culvert discharge.
Attendance Restrictions	None
Generally When/Where Offered	May 24-27, 1999 in Madison, WI.
Duration	4 days
Cost to Attend	\$895
Contact Name	Howard Rosen
Phone/Fax	608-262-4341
E-mail	rosen@engr.wisc.edu
Mailing Address	University of Wisconsin, Department of Engineering and Professional Development, 432 N. Lake St., Room 717, Madison, WI 53706-1498
Internet Information	N/A
Brief Description	A hands-on program providing experience using HEC-RAS (Hydrological Engineering Center - River Analysis System). Update and improve proficiency in flood analysis, WSPRO for bridges. All participants receive a copy of the HEC-RAS software and user's manual.
Key Words	floodplain, water surface profiles, bridge hydraulics, culvert hydraulics, discharge

Sponsoring Organization	University of Wisconsin-Madison Engineering Professional Development
Target Audience	State and federal regulatory professionals, consultants, managers, modelers, technical professionals, permittees.
Attendance Restrictions	None
Generally When/Where Offered	February 8-10, 1999 in Madison, WI.
Duration	2 or 3 days
Cost to Attend	\$895
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	<p>This cutting-edge course is your opportunity to learn more about total maximum daily loads (TMDLs), an emerging water pollution control strategy now being implemented at sites across the country. Participants will learn about TMDL's current status as they focus on:</p> <ul style="list-style-type: none">• the TMDL regulatory process• update from the Federal Advisory Committee on TMDL• setting targets• the role of modeling and other issues
Key Words	TMDL, water quality standards, water quality

Planning, Implementing, and Financing Stormwater Management Programs

UWM

Sponsoring Organization	University of Wisconsin-Madison, Department of Engineering Professional Development
Target Audience	Municipal engineers, consultants, planners, managers that are involved in stormwater programs.
Attendance Restrictions	None
Generally When/Where Offered	April 6-8, 1999 in Chicago, IL.
Duration	3 days
Cost to Attend	\$895
Contact Name	Stephen Pudloski or Patrick Eagan
Phone/Fax	800-462-0876 or 608-263-3160 (fax)
E-mail	custserv@epd.engr.wisc.edu
Mailing Address	Department of Engineering Professional Development, University of Wisconsin-Madison, 432 N. Lake Street, Madison, WI 53706-1498
Internet Information	http://epdwww.engr.wisc.edu
Brief Description	This course covers the legal framework of stormwater management; the development of a watershed plan; implementation of a stormwater management program; and financing stormwater projects, operations, and maintenance.
Key Words	stormwater management, watershed planning, financing stormwater projects and operations, organizing a stormwater management program

Sponsoring Organization	University of Wisconsin-Madison Engineering Professional Development
Target Audience	Remediation project managers, engineers, and scientists.
Attendance Restrictions	None
Generally When/Where Offered	September 1999 in Madison, WI.
Duration	3.5 days
Cost to Attend	\$895 with price break for both sediment courses.
Contact Name	Patrick Eagan
Phone/Fax	608-263-7429/608-263-3160
E-mail	eagan@engr.wisc.edu
Mailing Address	University of Wisconsin-Madison, The College of Engineering, 432 North Lake Street, Madison, WI 53706-1498
Internet Information	custserv@epd.engr.wisc.edu or http://epdwww.engr.wisc.edu
Brief Description	<p>This course will focus on measurement issues and on the pros and cons of assessment methodology. Course learning objectives are to:</p> <ul style="list-style-type: none">• <i>understand sediment contamination problems and issues, including:</i><ul style="list-style-type: none">- the role and use of mass balance models- the latest regulatory information- the physics of sediment resuspension- the integration of chemical and biological data• <i>learn how sediment toxicity testing can be used to:</i><ul style="list-style-type: none">- economize on sediment remediation- evaluate the hazards of dredge material- rank areas for cleanup priority- estimate the effectiveness of management and remedial options- identify other contaminated areas for further investigation
Key Words	sediment analysis, remediation, sediment contamination, assessment

Basin Surveys and Applications

USU

Sponsoring Organization	Utah State University, USDA Forest Service
Target Audience	Professionals involved in aquatic inventories as a basis for fisheries management and protection.
Attendance Restrictions	None
Generally When/Where Offered	May, Utah State University, Logan, UT.
Duration	4 days
Cost to Attend	\$400
Contact Name	Dr. Glenn Chen
Phone/Fax	435-755-3566/435-755-3563
E-mail	None available.
Mailing Address	USFS Rocky Mountain Station, 860 N 1200 E, Logan, UT 84321
Internet Information	http://www.zmariner.com/fs/ce
Brief Description	This course is designed to give participants a working knowledge of basin scale stream inventory techniques to be used as a basis for fisheries programs. The course focuses on the use and application of Hankin-Reeves basin-wide stream surveys.
Key Words	stream inventories, basin-wide scale, fishery, management, stream habitat, fish populations, Hankin & Reeves, USFS

Sponsoring Organization	Utah State University, USDA Forest Service
Target Audience	Natural resource professionals with aquatic ecosystem monitoring responsibilities.
Attendance Restrictions	This is an advanced-level course and participants should have a working knowledge of basic statistics, fluvial geomorphology, biomonitoring, water chemistry, and other subjects required to conduct an aquatic monitoring program.
Generally When/Where Offered	September, Utah State University, Logan, UT.
Duration	4.5 days (Monday – Friday)
Cost to Attend	\$700 per person (does not include lodging, meals, or travel to Logan).
Contact Name	Dr. Glenn Chen
Phone/Fax	435-755-3566/435-755-3563
E-mail	None available.
Mailing Address	USFS Rocky Mountain Station, 860 N 1200 E, Logan, UT 84321
Internet Information	http://www.zmariner.com/fs/ce
Brief Description	This course is designed to provide the framework for developing and/or enhancing aquatic monitoring programs at agency field units. Topics covered include: developing a sound monitoring study design; statistical methods for analyzing monitoring data; methodologies and techniques commonly employed to monitor physical, chemical, and biological components of aquatic ecosystems (with an emphasis on ways to deal with inherent natural variability), including lotic (stream, river) and lentic (lake, reservoir, wetland) habitats; and presentations of actual case studies in which monitoring information has been employed to change land management actions, etc. Lectures are combined with 2-3 field sessions.
Key Words	aquatic monitoring, monitoring study design and statistical analyses, water chemistry, fluvial geomorphology, biomonitoring, case studies, USFS

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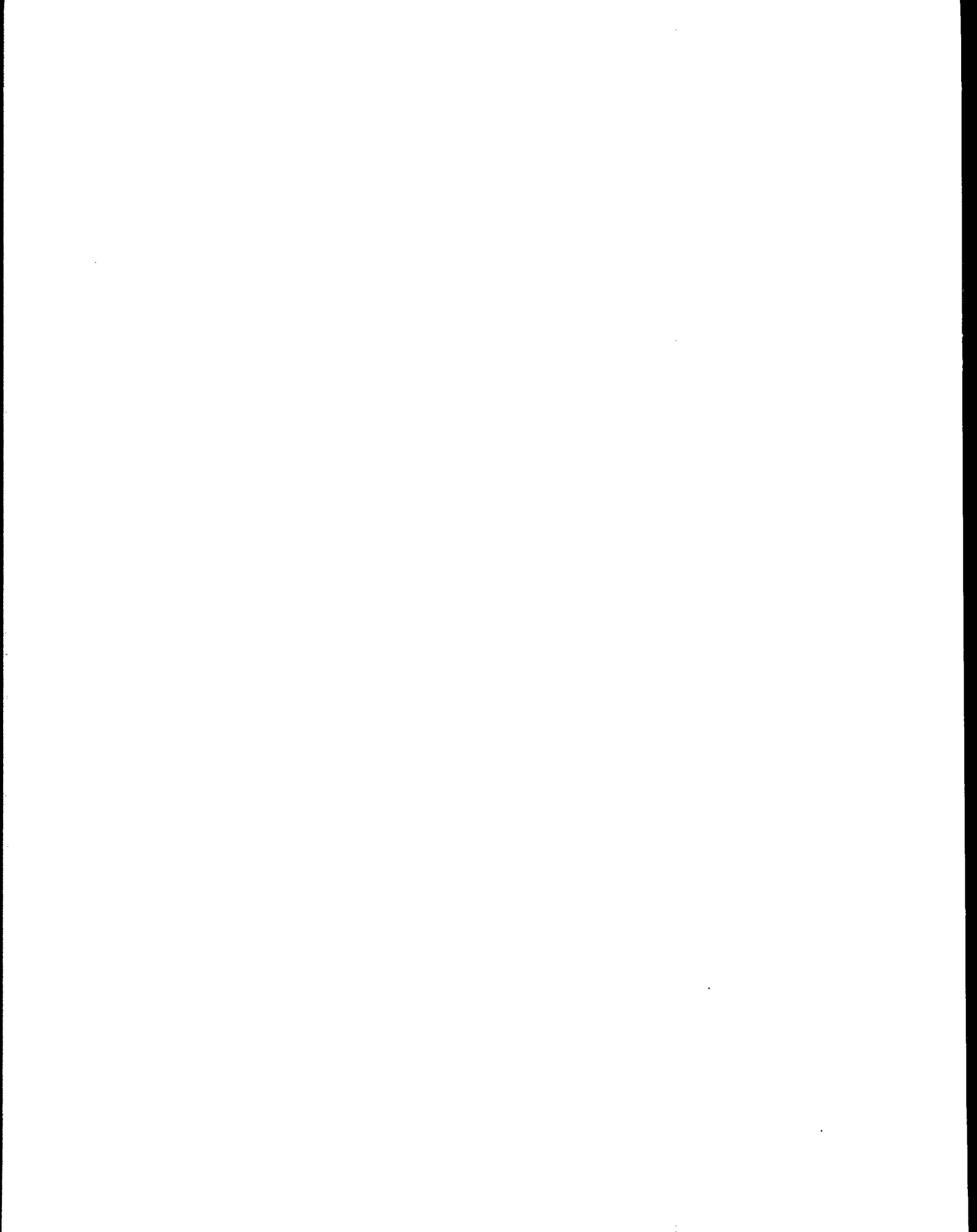
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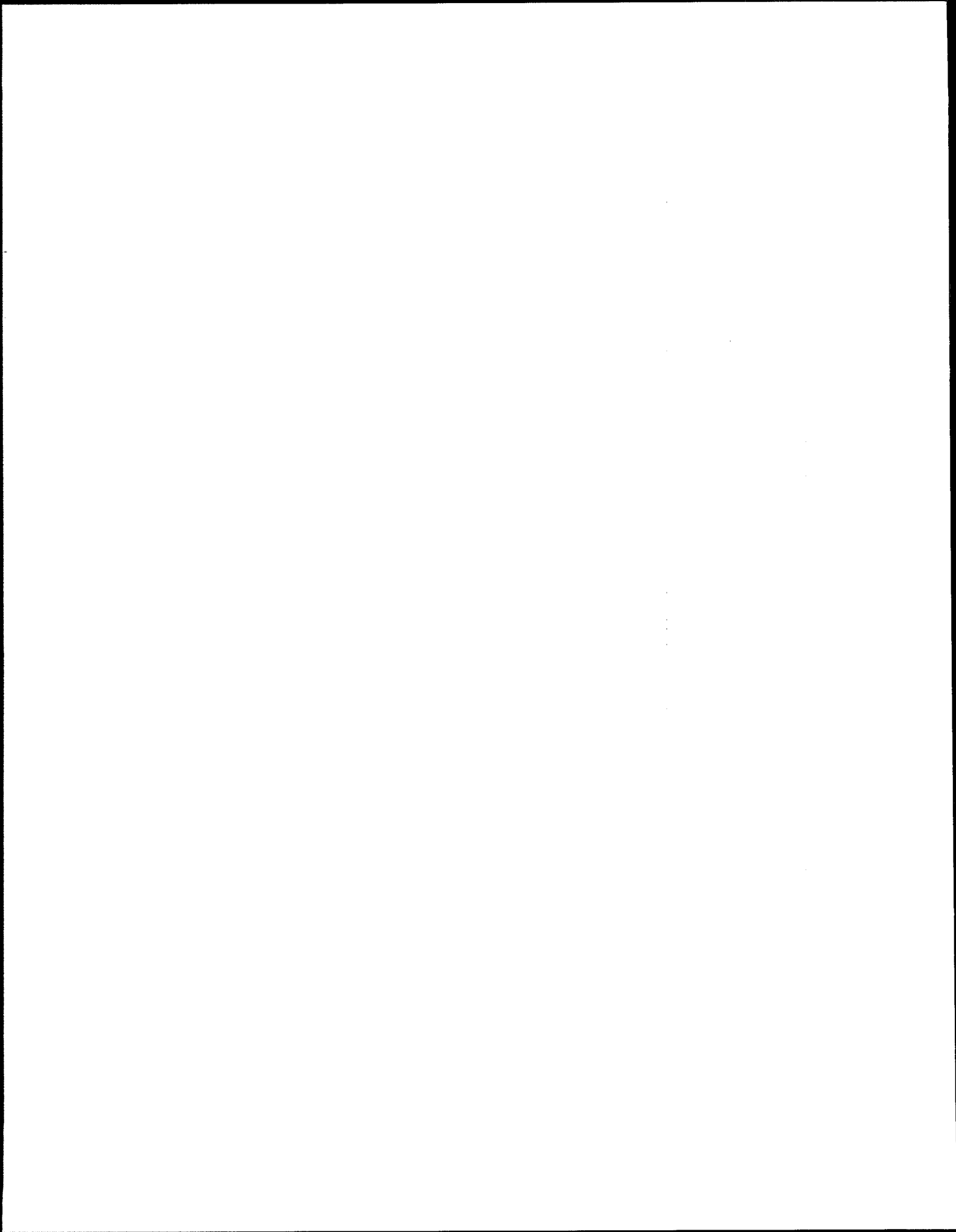
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Appendix A

Course Submittal Forms



Inventory of Watershed Training Courses

Submittal Forms

The following text includes 3 blank copies of a 1-page summary form for watershed training courses. This format has been used by U.S. EPA to summarize watershed training courses, public and private, that can help interested parties learn more about implementing watershed approaches and developing successful, community-based environmental protection projects in their watersheds. The forms we have received are compiled in the Inventory of Watershed Training Courses. We will publish a copy of the Inventory and you may also find the Inventory on the Internet at <http://www.epa.gov/ow/watershed/wacademy/its.html>

If you sponsor a watershed-related training course and it's not listed in this Inventory, please consider taking 10 minutes to fill out one of these summary forms and return it to EPA—thanks!

Anne Weinberg
USEPA (4503F)
401 M Street, SW
Washington, DC 20460
Fax: 202-260-1977
E-mail: weinberg.anne@epa.gov

Watershed Training Course Summary

Please send to weinberg.anne@epa.gov or fax to Anne Weinberg at 202-260-1977.

Course Name

Sponsoring Organization

Target Audience

Attendance Restrictions

Generally When/ Where

Duration

Cost to Attend

Contact Name

Phone/Fax

E-mail

Mailing Address

Internet Information

Brief Description

Key Words

Watershed Training Course Summary

Please send to weinberg.anne@epa.gov or fax to Anne Weinberg at 202-260-1977.

Course Name

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Course Name

Sponsoring Organization

Target Audience

Attendance Restrictions

Generally When/ Where

Duration

Cost to Attend

Contact Name

Phone/Fax

E-mail

Mailing Address

Internet Information

Brief Description

Key Words