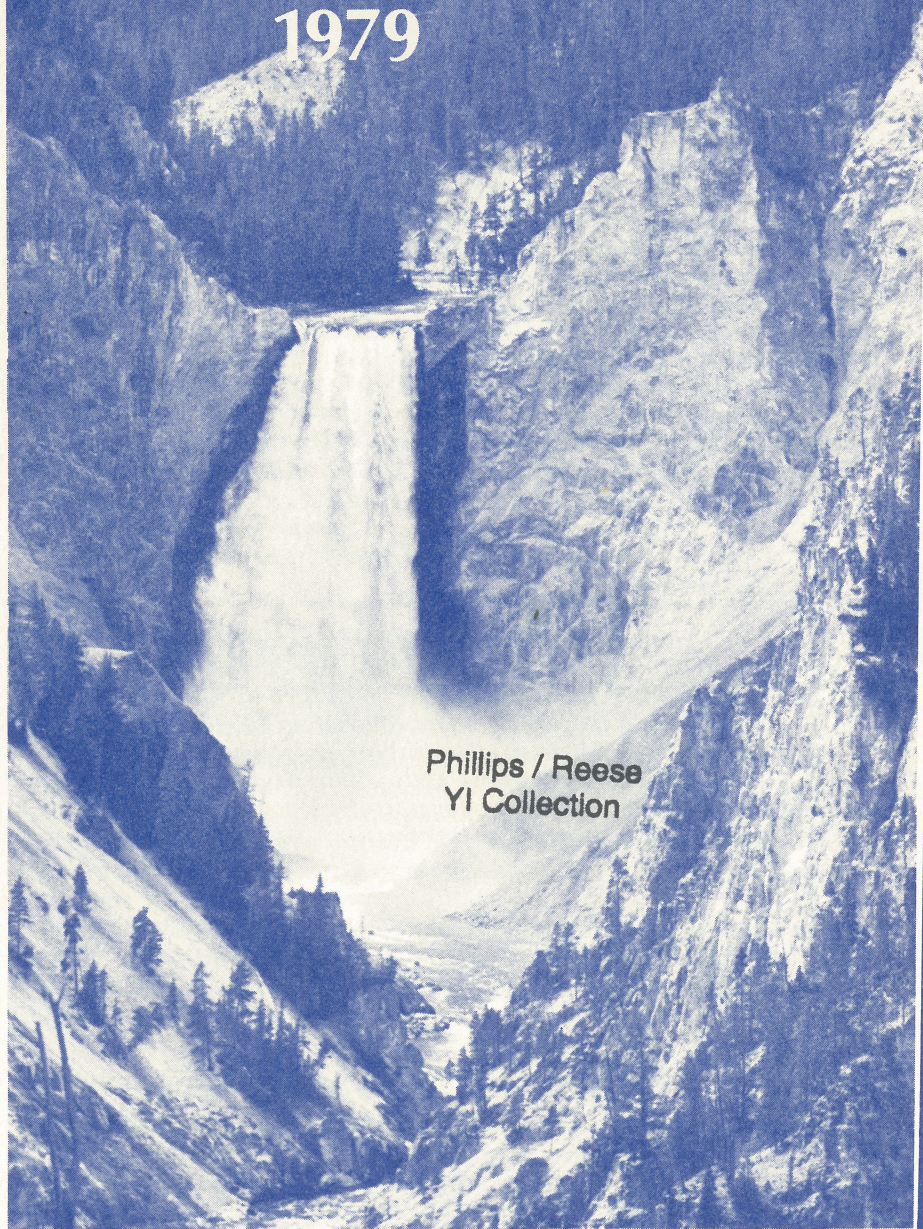


The Yellowstone Institute Field Seminars 1979

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The Yellowstone Institute and The National Park Service

Yellowstone National Park is world famous as a place to visit and enjoy an incredible diversity of natural features and wildlife. Here vulcanism has produced a landscape accented with thousands of hydrothermal features. Here too, age-old ecosystems function in a 2 ¼ million acre preserve.

Most of Yellowstone's 2 ½ million visitors catch only fleeting glimpses on a brief vacation. The interpretive program of the National Park Service seeks to enrich the time each visitor spends in the park, but cannot offer extended opportunities for those who want in-depth learning in the outdoor "classrooms" of Yellowstone.

The Yellowstone Institute bridges the gap by offering the field seminars described in this catalog. The National Park Service is pleased to cooperate with the Institute and its parent organization, the Yellowstone Library and Museum Association, to broaden the interpretive services within Yellowstone National Park. I recommend these seminars to you for a special experience of enjoyable learning.

R. Alan Mebane
Chief Park Naturalist

The Yellowstone Institute

Yellowstone is unique among national parks, not only for its history as the world's first such area dedicated to preservation and public enjoyment, and not only for its spectacular hydrothermal features, the largest and most varied in the world. And it is more than the elk and bison herds, and the grizzlies, and the landscapes formed by volcanoes and glaciers that place it foremost in the hearts of Americans. Yellowstone is that rare combination of features that has come to stand as a symbol, a symbol of the American wilderness. The vacation of a lifetime, the preservation of our heritage, our hopes for future harmony with our environment -- all these are included in our thoughts of Yellowstone.

The Yellowstone Institute invites you to join its program of in-depth learning experiences in Yellowstone National Park. There are seminars that focus on the Park's physical and biological phenomena -- mammals, birds, wildflowers, geology, hydrothermal activity, streams and fish, fire, and sky. Several of the courses examine man's relationship to nature -- public land use, horsepacking and its impact on the environment, history of the national park idea, and renewable energy resources. The photography, watercolor painting, and biology for teachers courses will help participants to appreciate the Park's wonders more fully and to pass their learning on to others.

Come and experience Yellowstone National Park with the Yellowstone Institute.

Tim W. Clark, Ph.D.
Director

General Information

Course locations & schedules

All courses are conducted in the field in Yellowstone National Park. Field observations will be emphasized, but lectures will also be conducted. Four seminars will run from Monday through Friday. All others will begin on Thursday and continue through the following Wednesday, with Sunday open for individual sightseeing or special projects. Specific meeting places and times will be sent upon registration.

Students should be in reasonable physical condition since nearly all courses will require some hiking, with an average of about 1-3 miles per day. Because of the large size of Yellowstone, car-pooling may be necessary to visit some sites.

Accommodations, meals & transportation

The Yellowstone Institute will use the Buffalo Ranch (the Lamar Ranger Station) bunkhouse as center for its 1979 operations. Located in the middle of the beautiful Lamar Valley in the northeastern section of the Park, this facility offers bunk space and limited kitchen facilities for about 15 people.

Since most of our instructors will be staying at the Ranch, we feel that this living situation should offer students a valuable, in-depth educational experience. Bunk space will be allocated on a first-come-first-served basis; the cost will be \$2 per night.

The public school in Mammoth will be the site for some seminars. This building may also be used during inclement weather and for evening classes.

Participants who do not stay at the Buffalo Ranch will be responsible for their own lodging. Public accommodations are available in Mammoth, Gardiner, and Cooke City. The closest Park campgrounds include Slough Creek, Pebble Creek, Tower, Mammoth, and Roosevelt Lodge. Students who choose to stay in Park campgrounds will have user fees waived, but campgrounds cannot be reserved and they often fill early each day.

Except for meals provided during the horsepacking trips, students must provide their own food and cooking-eating equipment as well as sleeping equipment.

Transportation to and from Yellowstone and during Yellowstone Institute seminars is also the responsibility of the participants.

Registration & university credit

Tuition is \$85 per course, except "Wilderness Horsepacking" is \$135. \$10 deductions will be made for early registration (at least 4 weeks in advance of course opening) and for all courses after the first. It is advantageous to REGISTER EARLY, since upon receipt of registration forms and fees by the Yellowstone Institute, students will be mailed a Yellowstone National Park entrance fee and campground user fee waiver, a pre-course study packet or reading list if the instructor requires one, and information regarding personal equipment. Instructors may also contact students who register early.

Another advantage of early registration is the prevention of course cancellations. If fewer than five students are enrolled two weeks prior to the opening date of a course, the course will be cancelled. Students will be notified immediately and tuition refunded promptly.

Students who decide to cancel at least four weeks prior to the opening date of a course will receive a full refund, less \$10 retained for processing.

Students taking courses for credit will be graded on a project, paper, or exam as required by the instructor. Most courses are accredited by area universities. Credit information will be sent upon inquiry. University registration forms and credit fees will be processed on the opening day of each course.

For further information, write or phone:

The Yellowstone Institute

Box 515

Yellowstone National Park, WY 83190

(307) 733-6856

In the Park, information may be obtained in the Information Center in Mammoth or the Chief Naturalist's Office.

1979 Field Seminars

The following seminars are for upper division or graduate credit. Each is six days long, Thursday through Wednesday, with Sunday open for graduate projects or sightseeing.

Large mammals of Yellowstone

JUNE 7-13

The principles of animal behavior as they relate principally to the ungulates of the Yellowstone ecosystem will be investigated in this course. Elk, bison, bighorn sheep, moose, mule deer, and pronghorns will be observed. Emphasis will be placed on observing and recording behavior accurately, interpreting it properly, and analyzing its importance in ecology and management.

ERNEST ABLES, Ph.D., is Professor of Wildlife Ecology at the University of Idaho. He has spent the past 12 years conducting research, directing graduate students, and teaching. Large mammal ecology and the ecological aspects of animal behavior are his special interests, which have led him to study a wide variety of species in East Africa, Wisconsin, Texas, and Idaho.

Stream ecology & fish of Yellowstone

JUNE 14-20

The primary focus of this course will be on stream ecosystem function with consideration of the total biota and particular emphasis on fish. Streams will be viewed as integral parts of watersheds with special attention directed toward land-water interactions. Lake ecology and specific examples of fisheries management problems will be treated at Trout, Lewis, and Yellowstone Lakes.

JOHN D. VARLEY, is employed by the U.S. Fish and Wildlife Service as a fisheries biologist in Yellowstone National Park. After receiving his M.S. degree, he began his career with the Utah Division of Wildlife Resources. He has had extensive experience in reservoir and tailwaters research and has also worked with resident and anadromous fishes in Alaska.

KENNETH W. CUMMINS, Ph.D., is a professor of Fisheries and Wildlife at Oregon State University. He was formerly with the Kellogg Biological Station and the Departments of Entomology and Zoology at Michigan State University. He serves as aquatics editor for the Ecological Society of America. His major current research is on the structure and function of running water ecosystems.

Recreational & educational uses of public lands

JUNE 14-20

This course studies the policies and practices of educational and recreational use of public lands, with emphasis on the National Park Service. Included will be discussion and observation of environmental interpretation techniques and management problems. An added feature is a "behind the scenes" look at management of the world's first and most famous national park.

JAMES R. FAZIO, Ph.D., is chairman of the Wildland Recreation Management Department at the University of Idaho. Following several years with the U.S. Forest Service and two years as associate editor for an industrial trade journal, he became a Cooperative Extension assistant in Natural Resources at Cornell University. His doctoral research was on "A Mandatory Permit System and Interpretation for Backcountry User Control in Rocky Mountain National Park."

Wildflowers of Yellowstone

JUNE 21-27

Field trips in the northern and central portions of Yellowstone National Park will teach students to recognize and name at least 75 species of flowering plants from intermountain deserts to alpine meadows. The ecology of flowering plants, floral morphology, and the use of floral keys will be taught. Teachers will appreciate coverage of effective teaching methods.

DELBERT W. LINDSAY, Ph.D., has spent a lifetime collecting, photographing, and teaching flowering plants of the Rocky Mountains. Winters find him teaching botany and working on the 11,000 specimen herbarium at Ricks College in Rexburg, Idaho. He is presently preparing a floral manual for eastern Idaho.

Birds of Yellowstone

JUNE 21-27

This introductory ornithology course will emphasize field identification and ecological relationships of the birds in the Yellowstone ecosystem. Food chains, adaptations to hydrothermal environments, effects of fire on birds, and habitat selection will be among the many topics discussed during visits to a variety of habitats. Binoculars will be essential.

RICHARD F. FOLLETT, M.S., worked as a seasonal ranger-naturalist in Yellowstone National Park from 1970-76. He compiled the bird checklist currently in use in Yellowstone and authored two books on birds in the national parks, Birds of Yellowstone and Grand Teton National Parks and Crater Lake Birds.

Rocks & landscape of Yellowstone

JUNE 28-JULY 4

This seminar will examine the lengthy geologic history of the Yellowstone region, which exhibits remarkable variability and thus provides an excellent arena for studies of geologic processes. Among the specific topics to be covered are the 2.7 billion year old basement, volcanic eruptions, glacial topography, active geothermal areas, streams and waterfalls, and earthquakes.

DAVID M. FOUNTAIN, Ph.D., is Assistant Professor of Geology at the University of Montana. His teaching background includes courses for teachers in Yellowstone and Glacier National Parks and field courses around the northern Rockies. The origin and structure of mountain belts, the nature of the crust of continents, and the ancient rocks of Montana are among his research interests.

Geothermal geology of Yellowstone

JULY 5-11

Yellowstone's extensive hydrothermal systems are the focus of this seminar. Geologic, geochemical, and geophysical evidence at various sites is examined to help understand the origin, functioning, and detection of other geothermal systems which may be useful for alternate energy. Geothermal energy development and production are discussed. A college level earth science and general chemistry proficiency are assumed.

CLAYTON R. NICHOLS, Ph.D., joined ERDA in 1975. He is currently Assistant Director for Geothermal Energy, Idaho Operations Office, Department of Energy. After receiving his doctorate from the University of Oklahoma in 1970, he taught geology at Boise State University for five years. He has been involved in research and program management related to geothermal energy for twelve years.

Renewable energy resources

JULY 12-18

This course will explore the need for energy and the part that each of the renewable resources could play in filling that need. The methods of application with their associated economics, environmental impact, and safety will be pursued. The course will consider projects from the do-it-yourself variety to the very large research projects under development. Field trips and lab experiments are planned.

RICHARD E. WOOD, Ph.D., is Director of the Energy and Technology Division of the U.S. Department of Energy. He has worked in many areas of design, test operations, data reduction and analysis in nuclear reactor and other energy-related fields. He spent one year at Brookhaven National Laboratory, thirteen years with General Electric Company, and the past ten years with AEC / ERDA / DOE.

Biology for educators

JULY 19-25

This course will be an inquiry-based, hands-on introduction to the major ecosystems of the Yellowstone area and to fundamental concepts in ecology. Participants will explore a variety of communities and model an activity-centered approach to environmental education.

JAY ANDERSON, Ph.D., is presently an assistant professor of Biology at Idaho State University. He was on the staff of the Biological Sciences Curriculum Study for three years, where he directed the development of a module for junior and senior high school biology. His research has been in plant ecology.

Calderas & hydrothermal systems

JULY 26-AUGUST 1

This seminar will be a technical discussion of volcanic rocks, caldera cycles, and hydrothermal convention systems, emphasizing the structural and age relationships of hydrothermal systems to calderas and the characteristics of water-dominated and vapor-dominated systems. A geologic background, equivalent to an undergraduate degree in geology, will be assumed.

DENNIS NEILSON received his Ph.D. from Dartmouth College specializing in igneous and metamorphic petrology and structural geology. He had five years experience in massive sulfide and uranium exploration before joining the Earth Science Laboratory of the University of Utah's Research Institute.

DUNCAN FOLEY received his Ph.D. from Ohio State University, where he studied the igneous petrology, structural geology, geochemistry, and age dating of a volcanic center in western Nevada. He has done research in geologic aspects of land-use planning. His specialty at the Earth Sciences Laboratory is regional assessment of geothermal resources.

History of Yellowstone Park & the national park idea

AUGUST 2-8

This seminar will trace the development of the "national park idea" from cultural origins in antiquity to its fulfillment in America during the past century. The success of Yellowstone, the world's first national park, led to the establishment of other American parks, wildlife refuges, national forests, and state park systems.

AUBREY L. HAINES, M.S., is a former Yellowstone National Park historian who has published a documentary study and a two-volume history of the park since his retirement in 1969. He has also served as a consultant on historical research for the National Park Service and the Bureau of Outdoor Recreation.

Yellowstone's sky:

Observational astronomy & meteorology

AUGUST 2-8

Afternoon and evening classes will explore meteorological and celestial phenomena visible in the Yellowstone skies. Topics include weather instruments, maps, and forecasting; severe weather phenomena; energy from the wind; use of binoculars, small telescopes, star charts, starfinders, and observing aids; the sun and solar energy; stars, nebulae, and galaxies.

PAUL KNAPPENBERGER, Ph.D., is director of the Science Museum of Virginia. He teaches astronomy at the University of Richmond and Virginia Commonwealth University. He has led several solar eclipse expeditions and is presently coordinator of the American Astronomical Society's Task Group on Education.

DON H. LUCAS, Ph.D., is a meteorologist with Envirosphere Company, an environmental consulting firm. He is past Chairman of the American Meteorological Society's Board on Popular and School Meteorological Education and was for six years an instructor in meteorology at Fernbank Science Center in Atlanta and at Georgia State University.

Fire ecology of the northern Rocky Mountains

AUGUST 9-15

The course will examine the role of fire in the coniferous forest of the northern Rockies. Topics will include the historical role and occurrence of fire, adaptations by plants and animals; effects on soils, plants, wildlife, and succession; forest fuels appraisal, fire weather, fire behavior modeling; and fire use, management, and policy in the national parks and forests.

COLLIN D. BEVINS is director of Systems for Environmental Management, a nonprofit research and educational corporation in Missoula, Montana. He received his M.S. degree from the Forest Fire Sciences Lab, University of Washington, and has worked with the Glacier National Park Fire Ecology Project. His current research includes fire occurrence patterns, fuels analysis, fuel modeling, fire and fuel information management systems, and fire planning.

The following courses are five days long, Monday through Friday, and are for undergraduate credit only.

Wilderness horsepacking

JULY 23-27 and
JULY 30-AUGUST 3

The care, use, and environmental concerns of using pack stock in designated wilderness will be covered in this seminar, which will include a four-day backcountry trailride. Horses, meals, and special equipment will be provided. Participants will need to supply their own sleeping bags.

RICHARD L. CLARK, Ph.D., was born and raised in the Upper Snake River Valley on the southwest corner of Yellowstone and spent ten years professionally guiding and outfitting in the Tetons and Yellowstone. His outdoor skills were augmented with academic preparation in biology and botany at Utah State University, the University of Oregon, and Brigham Young University. He is currently department head of outdoor education at Ricks College in Rexburg, Idaho.

Nature photography

AUGUST 13-17

The course will emphasize the basic skills of 35mm nature photography and will be conducted on a learning-by-doing basis. The course will review basic equipment, film types, how to work in the field, and marketing tips. Evening slide shows will illustrate the techniques utilized during the field trips to be taken throughout Yellowstone National Park.

FRANZ J. CAMENZIND, Ph.D., has studied the ecology and behavior of the coyotes on the National Elk Refuge in Wyoming and has also researched raptorial birds in Utah and Wyoming. His film experience includes both movies and still photography; he has over a dozen major television wildlife credits and numerous sales to many national publications.

Watercolor painting of the natural world

AUGUST 20-24

The quality of light and the terrain introduce unique problems into the painting of Rocky Mountain subjects. The handling of these problems, the basic considerations of watercolor paints, and the study of values are the topics addressed during this workshop for beginners or advanced watercolorists. Students may provide their own equipment or purchase it at cost from the instructor.

WILLIAM CHAPMAN has been self-employed as a fine artist and lay-out and exhibit designer for over twenty years. His work is exhibited throughout the Rocky Mountain region and at his Juniper Studio in Gardiner, Montana. He has taught art at a variety of levels from school children to school teachers and working artists.

The Yellowstone Institute

Registration Form

Name _____

Address _____

City _____ State _____ Zip _____

Home Phone _____ Business Phone _____

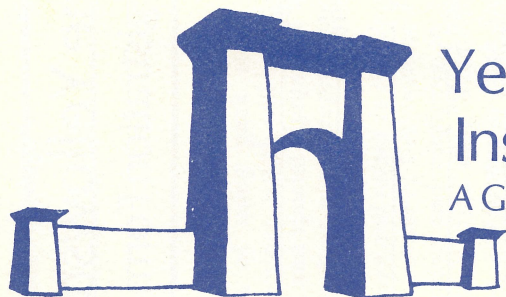
Occupation _____

Please enroll me in the following seminars:

- | | |
|---|------------------|
| —Large Mammals of Yellowstone | June 7-13 |
| —Recreational and Educational Uses of Public Lands | June 14-20 |
| —Stream Ecology and Fish of Yellowstone | June 14-20 |
| —Wildflowers of Yellowstone | June 21-27 |
| —Birds of Yellowstone | June 21-27 |
| —Rocks and Landscape of Yellowstone | June 28-July 4 |
| —Geothermal Geology of Yellowstone | July 5-11 |
| —Renewable Energy Resources | July 12-18 |
| —Biology for Educators | July 19-25 |
| —Calderas and Hydrothermal Systems | July 26-August 1 |
| —Yellowstone's Sky: Observational Astronomy and Meteorology | August 2-8 |
| —History of Yellowstone and the National Park Idea | August 2-8 |
| —Fire Ecology of the Northern Rocky Mountains | August 9-15 |
| —Wilderness Horsepacking | July 23-27 |
| —Wilderness Horsepacking | July 30-August 3 |
| —Nature Photography | August 13-17 |
| —Watercolor Painting of the Natural World | August 20-24 |

Enclosed is \$_____, \$85 for each course (\$135 for "Wilderness Horsepacking"). I have subtracted \$10 for each course for early registration (must be received by the Yellowstone Institute 4 weeks prior to course opening date). I have also subtracted \$10 for each course after the first. (Checks should be made payable to the Yellowstone Institute.)
... If you won't be using this catalog, please pass it along to a friend or colleague.

Cover photo by Franz Camenzind



Yellowstone Institute

A Gateway to Understanding

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82190

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