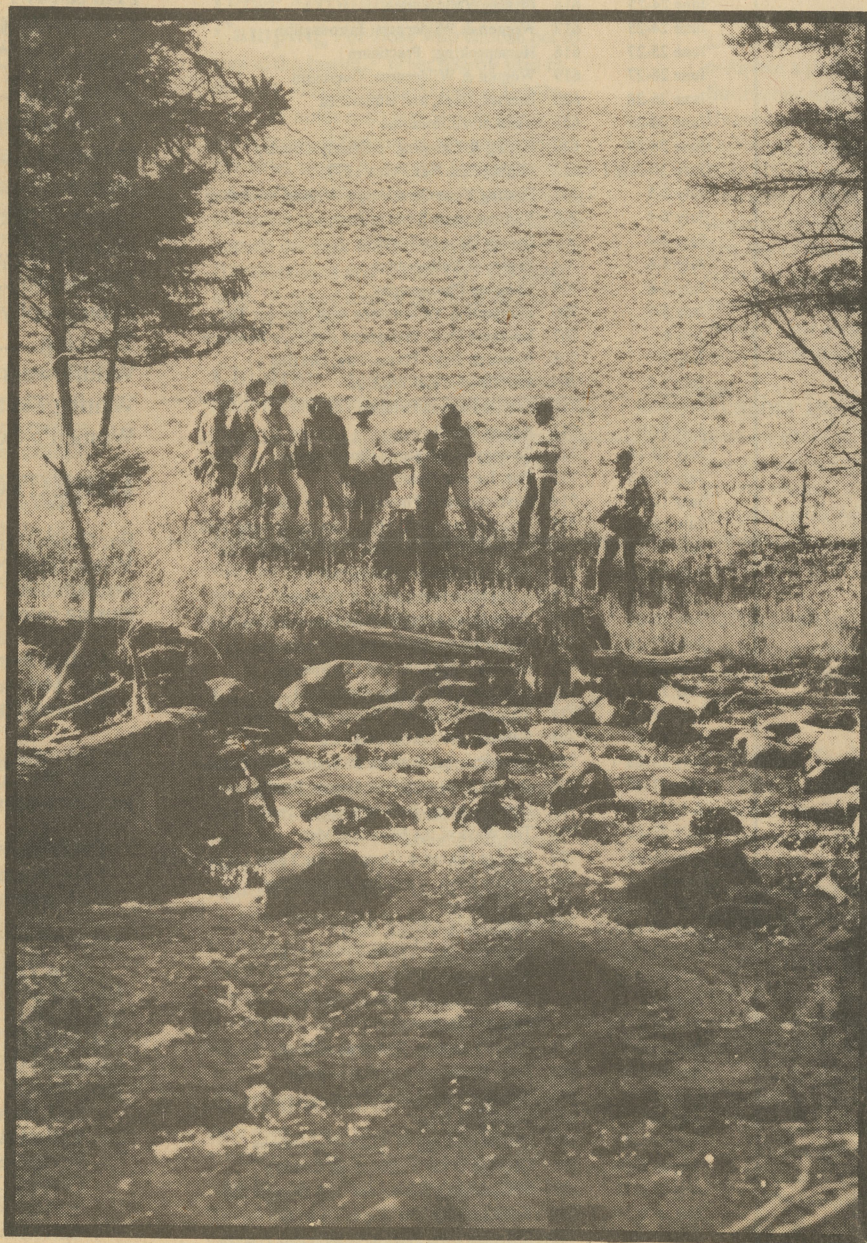


The Yellowstone Institute



FIELD COURSES
1990
NATURE STUDY VACATIONS

Phillips / Reese
YI Collection

THE YELLOWSTONE ASSOCIATION BOARD OF TRUSTEES

Chairman
Dr. William J. Tietz, Jr.

Vice Chairman
John Good

Secretary/Treasurer
Leslie C. Cox

BOARD MEMBERS

John Bailey
Corlene H. Cathcart
Stephen E. Cole
Al Greco
Henry S. Kingman
Maryanne Mott
Hon. Wayne Owens
Louise B. Plank
Dr. James L. Powell
Guido R. Rahr, Jr.
Dr. Terry Roark
Harriet Spencer
Stephen W. Tedder

ADVISORY COMMITTEE

C. Robert Binger
Dr. William D. Carlson
Wallace Dayton
John Dietrich
Aubrey L. Haines
Peter H. Hassrick
Monte Later
Prof. John Montagne
Beverly J. Whitman

PARK REPRESENTATIVES

Park Superintendent
Robert Barbee

Chief Naturalist
George Robinson

STAFF

Executive Director
Pat Cole

Institute Director
Donald Streubel

Office Manager
Margot Hamilton

Institute Registrar & Membership
Jeanne Peterman

Institute Field Manager
Cynthia Andrus

Mail Sales
Karen McEneaney

Cover photo by Gene Ball
Other photos by Gene Ball & Don Streubel
Layout by Jeanne Peterman

CALENDAR 1990

May 30-June 1	501	Wildlife Observation
June 2-3	601	Waterbirds of Yellowstone
June 9-10	602	Ecological Relationships of Birds
June 9-12	603	Grizzly Bear Ecology & Management
June 11-12	604	Elk of Yellowstone: Biology & Ecology
June 12-16	605	Horsepacking: Springtime Flora & Fauna
June 13-16	606	Wildlife Photography
June 13-17	607	Behavior of Ungulates
June 15-17	608	Wild Edible Plants & Medicinal Herbs
June 17-18	609	Indian Use of Yellowstone
June 18-22	610	Lakes of Yellowstone by Canoe
June 19-21	611	Life Histories of Yellowstone Birds
June 19-21	612	Mountain Men in Yellowstone
June 22-23	613	Mountain Men Field Trip
June 22-24	614	Bears: Folklore & Biology
June 23-24	615	Horsepacking: Around the Corrals
June 24-25	616	Birding Yellowstone
June 24-25	617	Women & Wilderness: Introduction
June 25-27	618	Horsepacking: Practicum
June 26-27	619	Women & Wilderness: Overnight
June 26-28	620	Beetles, Bugs, and Butterflies
June 26-30	621	Birds of Yellowstone
June 28-29	622	Hiking & Camping in Grizzly Country
June 30-July 1	623	Flight of the Nez Perce 1877
July 2-5	701	Finding Your Own Voice: Writing Workshop
July 2-4	702	Yellowstone's Birds of Prey
July 2-4	703	Family Days in Sunlight
July 5-6	704	Eagles of Yellowstone
July 5-6	705	Close-up Photography
July 5-7	706	Interpreting Yellowstone with "Ranger Ted"
July 6	707	Research Day: Pronghorn Antelope Research
July 7	708	Research Day: Plants, Fire, Grazing
July 7-8	709	Wildflowers and Wildfire
July 8-10	710	Family Days in Sunlight
July 9-10	711	Alpine Wildflowers
July 10-14	712	Ecology of Greater Yellowstone
July 11-13	713	Fire, Ice and Fossil Forests
July 11-13	714	Environmental Photography for Children
July 12-14	715	Wildflowers of the High Country (Llama Trek)
July 14-15	716	Wolves of Yellowstone: The Missing Link
July 15-18	717	Learning Outdoor Photography
July 16-18	718	Small Mammals: Prey & Predators
July 19-21	719	Three Days at the Buffalo Ranch (Ages 8-12)
July 19-21	720	Exploring the Yellowstone Ecosystem
July 19-21	721	Geysers, Mudpots, and Hot Springs
July 19-23	722	Horsepacking: Teton Crest Trail
July 22-25	723	Mammal Tracking: Interpreting Tracks & Sign
July 23-27	724	Backcountry Llama Trekking
July 23-28	725	Hydrothermal Systems & Yellowstone Caldera
July 23-25	726	Family Days with Park Ranger Family
July 25-29	727	Horsepacking: Bechler Canyon Trail
July 26-28	728	The Ways of the Mountain Men
July 26-28	729	Intro to Hiking & Camping for Youth (Ages 12-14)
July 27-28	730	Family Days: Camping Rendezvous
July 30-Aug. 1	731	Fire Ecology
July 30-Aug. 2	732	Yellowstone's Night Skies
July 30-Aug. 3	733	Horsepacking: The Nez Perce Trail
July 30-Aug. 3	734	Backcountry Photography
August 4		Yellowstone Storytelling Festival
August 5		Nature Film Festival
August 4-5	801	Fire in Paradise: The Second Year
August 4-5	802	Early Exploration in Yellowstone
August 4-8	803	Horsepacking: Indian Trails
August 5-7	804	Star Trails West
August 5-8	805	Glacial Geology & Alpine Ecosystems
August 6-10	806	Geology of the Yellowstone Country
August 9-11	807	Interpreting Yellowstone with "Ranger Ted"
August 9-13	808	Horsepacking: Nez Perce (Alternate Route)
August 10	809	Research Day: Natural Geothermal Tracers
August 10-12	810	Fly Fishing: Less Experienced
August 11-12	811	Research Days: Coyotes & Mountain Lions
August 13-15	812	Ystn Streams Through the Eyes of a Trout
August 13-15	813	Road to Controversy
August 13-16	814	The Art of Keeping a Field Journal
August 14-18	815	Horsepacking: Washburn Expedition Trail
August 15-17	816	Llama Trekking Yellowstone
August 15-19	817	Wilderness Photography
August 16-18	818	Experiencing the Spirit in Nature

Calendar continued at bottom of next column

CONTENTS

Course Topics	Pages
Alpine Plants & Ecology.....	11,12,17
Astronomy.....	16,17
Bears.....	5,7,9
Birds.....	5,7,8,9,10,20
Camping & Hiking.....	8,9,13,15
Canoeing.....	7
Children & Youth Courses.....	12,15
Ecology.....	11,13,15,19
Family Courses.....	9,10,11,14,15
Fire.....	11,15,16
Fish & Fly Fishing.....	18
Folklore & Storytelling.....	7,16
Geology & Geysers.....	11,13,14,17
History.....	6,7,9,13,15,17,18,20
Horsepacking	6,8,13
Indians.....	6,9,13
Insects.....	8
Llama Trekking.....	12,14,19
Mammals	5,6,10,11,12,14,18
Philosophy.....	19
Photography.....	6,10,12,16,19,20
Tracking.....	14,20
Wildflowers & Plants.....	6,11,12
Writing/Sketching.....	9,18
Women's Courses.....	8,20

DIRECTORY

For General Information about
Yellowstone National Park
campgrounds and opening and
closing dates contact:

Visitor Services 307-344-7381
Box 168 Ext. 2206
Yellowstone Park, WY 82190

For Information about in-park
lodges, hotels, RV parks, marina,
and reservations contact:

TWR Services, Inc. 307-344-7311
Yellowstone Park Division
Yellowstone Park, WY 82190

The Yellowstone Association for
Natural Science, History & Education,
Inc. is a non-profit, tax-exempt
organization founded in 1933 to support
educational, historical, and scientific
programs in Yellowstone National Park.

P.O. Box 117
Yellowstone National Park,
Wyoming 82190
Phone: 307-344-7381
Extension 2349 Business Office
Extension 2384 Institute Registrar

CALENDAR 1990 (cont'd.)

August 17-19	819	Fly Fishing: More Experienced
August 18	820	Contemporary Resource Issues
August 25-26	821	Women & Yellowstone
August 25-26	822	Tracking: Earth as Manuscript
Sept. 7-9	901	Wildlife Photography in the Fall
Sept. 14-16	902	Autumn Scenic Photography
October 27-28	903	Swan Identification & Ecology

GENERAL INFORMATION

Tuition Unless otherwise specified, the tuition charge does not include lodging, meals, books, course materials, transportation, or university credit fees.

There are discounts for current members of the Yellowstone Association or those who join when they enroll.

Registration Complete and mail the attached registration form along with the tuition fee (and cabin fee if applicable).

Most courses are limited to 12-15 participants. Early registration is advised.

Student Packet At least four weeks before class begins, each student will be mailed more detailed course information, suggested study materials if appropriate, plus a park entrance and campground fee waiver. Recommended reading lists will be mailed earlier, if applicable.

Cancellation Policy Enrollees who cancel at least one month in advance will receive an 80% refund. Members receive full refund minus a \$5 per-course cancellation fee. For less than one month notice, refunds will be given (at the above rates) only if the vacancy can be filled. In all cases, cancellation fees may be applied toward tuition for another course during a one-year period.

The Institute reserves the right to cancel a course if fewer than eight persons are enrolled 30 days prior to the first class day. Enrollees will be notified immediately and will receive a full refund. (Note: Cancellation insurance is available through travel and insurance agents.)

Location Courses are held at various locations within the Yellowstone ecosystem. Most are conducted at the Institute facility known as the Buffalo Ranch. It is an historic Park Service facility located in the Lamar Valley between the Northeast Entrance and Tower Junction. (See map on next page.) All classes meet there unless otherwise stated *next to date* under class descriptions.

Classroom Facility The Institute's log building is heated and has two classrooms, three bathrooms with showers and a kitchen where people do their own cooking. The facility, though clean and adequate, is fairly simple.

Food and Preparation Unless otherwise specified, participants provide their own food. There are stoves and refrigerators in the kitchen, but space is limited. Cooking and eating utensils are provided. Food preparation should be kept rather simple.

Cabins There are thirteen *multiple-occupancy* cabins. Most have two or three single beds. They have no plumbing, heating, or electrical outlets. Everyone must bring a warm sleeping bag. Life there has been affectionately described as "indoor camping." Cabin reservations should be made when registering for class. The fee is \$7 per person per night. Space is limited. Cabin rental for family members of participants may be allowed *if space is available*. A copy of the Institute policy regarding family members and information about nearby lodging or camping facilities will be mailed on request.

Other Accommodations and Camping For those who choose not to stay at the Institute, other nearby sites in the park include campgrounds at Pebble Creek (9 miles east) and Slough Creek (7 miles west) or lodging at Mammoth Hotel (29 miles west), Roosevelt Lodge (11 miles west at Tower Junction), and Canyon Lodge (30 miles southwest). Motels are available outside the park in Montana at Silver Gate (19 miles east) and Cooke City (23 miles east). A list of nearby facilities will be sent on request.

Children Most courses and the Institute facilities are designed for adults. Therefore, children are not encouraged to attend--with the exception of the children's and family classes.

Pets, RVs, and Camping Pets are not allowed at the Institute, and there are no provisions for camping and recreational vehicle use on the grounds at the Yellowstone Institute facility.

Lodging for Courses at Other Park Locales For courses which do not meet at the Institute's Lamar facility, information about camping and lodging options will be sent upon request or when registration is received. For some classes, group campsites will be reserved. The Institute registrar is available to assist or advise.

For classes which meet at other locales in the park, rooms may be reserved through TWR Services (307-344-7311). Due to demand for these rooms, early reservation is essential. Contact the Institute office for advice and details.

Transportation Participants must arrange their own transportation to and from Yellowstone and to the location where their class begins. Where appropriate, vehicles will be provided for travel associated with the courses. Car pooling may be necessary in some cases.

Call the Institute office for advice on air or bus transportation to Yellowstone.

Weather Much class time will be spent outdoors. Students should be prepared for a variety of mountain weather conditions and some cold temperatures. Rain gear and warm clothing are essential.

Physical Condition Participants should be in good general health for these courses because most courses require at least some walking at higher elevations. Classes which involve backpacking, horsepacking, canoeing, and field work will be more demanding. Ask in advance if you have any questions on this matter.

Insurance and Liability Participants must provide their own health and accident insurance. Please read and sign the liability waiver on the registration form.

Academic Credit Courses for which academic credit is available are so designated. Credit seekers may be required to take an exam, submit field notes, and/or complete a post-course project. Institutions which offer credit include the University of Montana, Montana State University, University of Idaho, Idaho State University, Brigham Young University, and Ricks College. Registration forms will be provided on the first day of the course. Fees for credit are collected on the first day of class and are usually \$25-\$40. Students may enroll through their own university for independent study.

Teacher In-Service Credits Many teachers enroll in Yellowstone Institute courses for recertification or professional growth credits. Certification of course completion listing the course title, hours of instruction, and the nature of the course is available upon request.

Scholarships Limited scholarships may be available to Wyoming and Idaho teachers. Contact Institute registrar for more information.

Funding The Yellowstone Institute is non-profit. Tuition fees cover only a portion of the Institute costs. Other funding comes primarily through membership contributions plus other fundraising activities of the Yellowstone Association, a non-profit, tax-exempt organization.

Since 1985, humanities courses offered by the Yellowstone Institute have been partially funded by grants from the Wyoming Council for the Humanities.

Yellowstone Institute
P.O. Box 117
Yellowstone National Park, Wyoming
82190

Institute Office at Mammoth
8:00—4:30 MST (For registration
information)
307-344-7381 ext. 2384

Institute Facility in Lamar Valley, YNP
(June—August) 307-344-7749

Unless otherwise stated, classes meet at the Institute facility at the Lamar Station (the old Buffalo Ranch).

The Yellowstone Association was founded in 1933 to support educational, historical, and scientific programs for the benefit of Yellowstone National Park and its visitors. Among the Association's past and present projects are the following:

- * Donated research library to park in 1967 and provides continued support through purchase of books and periodicals and hiring of part-time librarians
- * Operates book sales outlets in Visitor Centers throughout the park
- * Founded The Yellowstone Institute in 1976 and serves as its sponsoring organization
- * Publishes trail guides for self-tours of thermal areas
- * Publishes books and pamphlets pertaining to Yellowstone
- * Assists naturalists with visitor information services at Visitor Centers
- * Prints schedules of naturalist programs for visitors
- * Administers grants and gifts received for designated projects in Yellowstone
- * Funded Yellowstone's first braille trail
- * Contributed funds for museum exhibits and research equipment

The Yellowstone Association for Natural Science, History and Education, Inc., is a non-profit, tax-exempt organization.

Dear Participant,

Driving through Yellowstone, with frequent stops to observe, is one way to see this magnificent park. But another, more thorough way, that stimulates learning in depth, meeting new friends, and having Yellowstone truly become a part of your life, is to take classes at the Yellowstone Institute.

With over 80 classes in 1990, the Institute provides a diversity of experiences: from horse or llama packing to canoeing, flyfishing, geology, fire ecology, insects, birds, grizzly bears, and even drawing and writing, plus many others.

The Institute is sponsored by the non-profit Yellowstone Association. Membership in the Association entitles you to discounts on classes at the Institute.

Life is best when you are learning. And learning about the wonders of this restless and enduring land is especially rewarding and refreshing. Come join us in 1990 and make Yellowstone Park a part of your life.

Sincerely,

Don Streubel

Don Streubel,
Director
Yellowstone Institute



Lamar Station ... Yellowstone Institute
19 miles west of Silver Gate, Montana
11 miles east of Tower Junction
Elevation 6560 feet

1990 SUMMER FIELD COURSES

THE FIFTEENTH ANNUAL
YELLOWSTONE INSTITUTE



Wildlife Observation: 501

May 30-June 1

\$105 (Member's fee \$95)

Field observation will be the major goal and activity of this class. The informal format will feature early morning and evening field trips with mid-day programs on related topics such as osprey, moose, bears, birds, animal sign, observation techniques, photo tips, optics, and the ethics of interaction with wildlife. Activities begin on the afternoon of May 29.

Gene Ball, Yellowstone Institute director from 1985-88 and now director of the Cowboy Artists of America Museum, will be the coordinator for the course which will include presentations by Gerry Green (grizzly bear researcher), Joe Zarki (co-author of the Yellowstone Bird Checklist), Dan Tyers (wildlife researcher), and others.

Waterbirds of Yellowstone: 601

June 2-3

\$75 (Member's fee \$65)

As spring unfolds into summer, water environments in Yellowstone are exciting areas for the study of ecological relationships of birds. This field course will emphasize species identification, food habits, habitat requirements, and interrelationships of birds associated with water environments such as waterfowl, herons, terns, gulls, shorebirds, ospreys, eagles, pelicans, kingfishers, cormorants, grebes, and loons. Though the course emphasizes waterbirds, students will have an opportunity to see and identify a variety of birds and mammals in the varied Yellowstone environment. The course begins at 7:00 pm on Friday, June 1.

Terry McEneaney is the bird biologist for Yellowstone National Park. He was a wildlife biologist for the U.S. Fish & Wildlife Service for 12 years, has taught field ornithology for the Nature Conservancy in Montana, and is the author of a new book entitled Birds of Yellowstone.

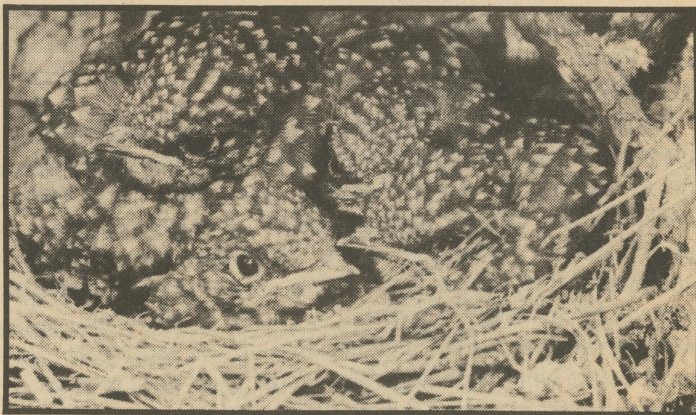
Ecological Relationships of Birds: 602

June 9-10

\$75 (Member's fee \$65)

This course will concentrate on the ecological relationships of birds in Yellowstone. It begins Thursday, June 8 at 7:00 pm. The course will examine the physical factors of the environment (soil, light, climate, weather), and will put primary emphasis on habitats and the role that biological factors (food, prey, competition, niches, migration, etc.) play in the distribution of birds in Yellowstone. In this course you will learn the ecological role of the Clark's nutcracker, red crossbill, common raven, bald eagle, osprey, white pelican, Caspian tern, trumpeter swan and common loon, to name a few. Also, you will learn the role of birds in relation to other birds, mammals, etc. Field trips will be the major emphasis, since hands-on experience is the key to learning. If you feel you can identify most birds, but are more interested in the ecological role that birds play in Yellowstone, this course is for you.

Terry McEneaney, see write-up under "Waterbirds of Yellowstone."



Grizzly Bear Ecology & Management: 603

June 9-12

\$155 (Member's fee \$145)

This course will consider the ecology and management of grizzly bears and the many ways the two topics relate to one another. Students will receive a general overview of most important aspects of the subjects, but among the topics of special interest this year are the proposed delisting of the grizzly bear, the evolution of bear management (and public attitudes) since the park's establishment and the black bear's place in the Yellowstone setting. Less emphasis will be placed on management and more on ecology and bear-human interactions than in past years.

Paul Schullery is with the National Park Service Research Division in Yellowstone, where he writes on natural resource topics. Since 1972 he has worked as a ranger-naturalist, park historian and research consultant. He is the co-author, author or editor of sixteen books, including three about bears: The Bears of Yellowstone, American Bears: Selections from the Writings of Theodore Roosevelt, and The Bear Hunter's Century. He is a member of the Council of Advisors of the National Parks and Conservation Association. Among the other specialists who will be conducting field and classroom sessions are Steve and Marilyn French (grizzly bear researchers) and Steve Herrero (author of Bear Attacks).

Elk of Yellowstone: Biology and Ecology: 604

June 11-12

\$75 (Member's fee \$65)

Elk are the most abundant herbivore in the Yellowstone system, and as such, exert a major influence on the environment and its other inhabitants. Emphasis will be placed on population dynamics, feeding ecology, migratory patterns, mortality factors, interaction with other herbivores, special management concerns, and current research. The instructor recently completed four months of intensive field observations for a behavioral comparison of the Yellowstone elk populations at Lamar, Mammoth, and Madison-Firehole.

Ernest Ables, Ph.D., is Professor of Wildlife Ecology at the University of Idaho. He has spent the past 21 years conducting research, directing graduate students, and teaching. His special interest in large mammal ecology and the ecological aspects of animal behavior have led him to study species in East Africa, Wisconsin, Texas, Idaho and Yellowstone.

Horsepacking: Springtime Flora & Fauna: 605

June 12-16

\$405 (Member's fee \$395)

This five day ride crosses the park's northern boundary and goes up the Yellowstone River to the Hellroaring country, an area of bountiful wildlife and colorful displays of spring flowers.

(See Wilderness Horsepacking, p.13, for more details about the Institute's horse trips and the instructor, Richard Clark.)

Wildlife Photography: 606

June 13-16

\$165 (Member's fee \$155)

With Yellowstone as the focus, this course will emphasize the practical applications of photography rather than technical theory and assumes at least moderate experience. It will cover widely varying climatic and temperature zones and will approach outdoor photography as art. Techniques, use of light, equipment, composition, form, and development of the creative eye will be discussed. There will be special emphasis on environmental sensitivity and the ethics of, and various approaches to, wildlife photography. Participants must provide their own camera, lenses, tripod, film and accessories and be familiar with the operation of their equipment.

Tom McBride is recognized throughout the West as a photographer and multi-media producer. He has been commissioned by the Library of Congress for still photography; by United Artists for cinematography; and by Stephen Cross for films released by the B.B.C. His photographs have been featured in numerous magazines and he was judged Photographer of the Year by the Montana Professional Photographers Association.

Behavior of Ungulates: 607

June 13-17

\$195 (Member's fee \$185)

Credit available (U or G, 1 semester hour; U of ID)

The principles of animal behavior as they relate to the ungulates of the Yellowstone ecosystem will be investigated in this course. Elk, bison, bighorn sheep, moose, mule deer, and pronghorn will also be observed. Emphasis will be placed on observing and recording behavior accurately, interpreting it properly, and analyzing its importance in ecology and management. Attention will be given to the current population fluctuations that have occurred. The course emphasizes field investigation, so participants should come prepared for the snow, rain, wind, etc.

Ernest Ables, see write-up under "Elk of Yellowstone."

Wild Edible Plants and Medicinal Herbs: 608

June 15-17 (Squirrel Meadows)

\$110 (Member's fee \$100)

Credit available (U, 2 quarter hours when taken in conjunction with one other Wildflower class, 709, 711 or 715; U of MT)

The blue camas meadows in the forests between Yellowstone and Grand Teton National Parks were an important food source for early American people. The meadows, ponds, aspen groves and coniferous forests of this area have outstanding plant diversity, providing an exceptional opportunity to study native vegetation. This course will focus on the edible and medicinal properties of the native plants of the West. The toxicity and poisoning principles of poisonous plants will also be discussed. Identification techniques will be presented during the many field trips. Classroom headquarters for the course will be at the historic Forest Service cabin at Squirrel Meadows along the scenic road between Ashton, Idaho and the Flagg Ranch near the South Entrance to the park. Participants should come prepared to camp out, or may choose to stay in a motel in Ashton, which is less than an hour away.

Wayne Phillips has a degree in forestry and is an ecologist with the U.S. Forest Service on the Lewis and Clark National Forest. He has taught plant identification for the College of Great Falls, is intimately familiar with the vegetation of the mountain West, writes botanical articles, and is an avid wildflower photographer. He has done graduate study in fire ecology and has been monitoring fire effects on vegetation since 1985.

Indian Use of Yellowstone: 609

June 17-18

\$75 (Member's fee \$65)

This class will offer an Indian perspective on the Yellowstone area. Topics will include tribal migrations, trails, treaties, traditional roles of men and women, interrelationships with whites, and the interest of Indians in the park itself. Also addressed will be the role of family, folklore and religion concerning the natural environment of Yellowstone. The course includes a traditional meal on the evening of June 17.

Jeanne M. Eder was born on the Fort Peck Indian reservation in Montana, is an enrolled member of the Sioux tribe, and is assistant professor of Native American studies at Eastern Montana College. She has completed work on the use of the Star Quilt among Sioux and Assiniboiné women and produced a one-hour monologue on a traditional Hidatsa woman named Waheenee, Buffalo Bird Woman.





Lakes of Yellowstone by Canoe: 610

June 18-22 (Lewis Lake, YNP)

\$295 (Member's fee \$285) Limit: 12

Credit available (U or G, 1 semester; Ricks College/BYU)

This five day canoe trip across Lewis Lake and into magnificent Shoshone Lake will provide interpretation of the lake environment and instruction on low-impact backcountry camping techniques. Canoeing skills such as strokes, portaging, safety and tripping (how to pack a canoe) will be studied and American Red Cross canoeing certification may be earned if desired. *Fee includes all canoeing equipment, group camping gear, and food.*

Scott Wood has 16 years experience in outdoor education, is an instructor at Ricks college, and a doctoral candidate at the University of Utah. He is a certified Red Cross canoeing instructor.

Life Histories of Yellowstone Birds: 611

June 19-21

\$110 (Member's fee \$100) Limit: 12

Join two of Yellowstone's most experienced birders for intimate, close-up studies and in-depth discussions of two dozen of the park's most interesting birds. This course will take you to a variety of locations throughout the park in search of such species as the trumpeter swan, harlequin duck, osprey, bald eagle, peregrine falcon, sandhill crane, great gray owl, white-throated swift, Williamson's sapsucker, American dipper, mountain bluebird, and several others. Bring binoculars, scopes (if available), and field guides. The instructors will provide scopes and other course materials.

Richard F. Follett is author of Birds of Yellowstone and Grand Teton National Parks and Birds of Crater Lake National Park. He is a specialist on the birds of Yellowstone where he worked seven years as a ranger-naturalist and compiled the park's bird checklist. Joe Zarki is a district naturalist with the National Park Service and has birded in Yellowstone for eight years. Besides co-authoring the current Yellowstone bird checklist with Dick Follett, he is a member of the Wyoming Bird Records Committee and the compiler for the Yellowstone Christmas Bird Count.

Mountain Men in Yellowstone: Part I: 612

June 19-21

\$130 (Member's fee \$120)

Credit available (G or U, 2 semester hours; BYU)

This course will examine the exploration of Yellowstone by early fur traders (1807-1812) and mountain men (1825-1840). It will begin with a study of the penetration of the region by the St. Louis Fur Company from its headquarters at Fort Manuel Lisa

and such personalities as John Colter, Andrew Henry, Thomas James, John Hoback and George Drouillard. The second era (1825-1840) will focus on the Ashley men who rediscovered South Pass, founded the Rendezvous system in the North and Central Rockies and became the legendary mountain men: Jim Sublette and Warren Ferris. Using maps and primary source materials taken from journals and diaries, the class will follow paths traveled by the mountain men throughout the park and study the observations recorded by the fur men. (Fee includes \$18 for text including handouts and copies of historic maps and source documents.)

(See Part II, June 23-24)

Fred R. Gowans, Ph.D., is a professor of Western American History at Brigham Young University. He has been a consultant for historical films on mountain men and is the author of Rocky Mountain Rendezvous, Mountain Man and Grizzly, and A Fur Trade History of Yellowstone Park: Notes, Documents, Maps.

Mountain Men In Yellowstone: Part II (Field Trip B): 613

June 22-23

\$85 (Member's fee \$70) Limit: 25

Credit available (G, 1 or 2 semester hours, BYU)

This course will encompass on-site studies of several key locations pertaining to the fur trade history of Yellowstone. The trip will center around the controversial 1807-8 routes of John Colter and George Drouillard. Extensive use of the Drouillard map will be made as it pertains to the Colter route. We will concentrate on the eastern portion of the park; a few of the specific locations which will be visited will include: Lamar Valley, Clarkes Fork, Sunlight Basin, Stinking River (N. fork of Shoshone River), Coulter's Hell, S. Fork of Shoshone River, Elk Creek, etc. Students will have the option of staying overnight in a Cody motel (at own expense) or nearby campground (reserved by Institute). Field Trip C, which will be offered during 1991, will emphasize on-site study of one or two key locations. Field Trip A, which was offered in 1989, concentrating on the northern and western portions of the park, will be offered in 1992. ("Mountain Men, Part I" is a prerequisite.) *Fee includes \$10 extra toward charter bus used for the field trip.*

Fred Gowans, see write-up under "Mountain Men: Part I."

Bears: Folklore and Biology: 614

June 22-24

\$115 (Member's fee \$105)

Credit available (U, 1 quarter hour; MSU)

This class will combine two disciplines and field observation time to explore the basic aspects of bear biology including reproduction, behavior, food habits, home ranges, habitat use, and population biology and to address the bear's role in folkstories, images of bears in popular culture, bears as cult symbols, and the role of bears in today's world. Comparing and contrasting folk and scientific knowledge, and the importance of both, will be a continuing course theme.

Harold Picton, Ph.D., is a professor of wildlife management at Montana State University. He has directed a number of graduate student studies of the Yellowstone grizzly, co-authored several scientific papers with members of the Interagency Grizzly Bear Study Team, and is a member of the grizzly bear committee of The Wildlife Society.

Jim Garry is both a naturalist and a folklorist. His degree as a naturalist is from the University of Michigan as is his M.S. in Environmental Communications. He has worked on numerous wildlife research projects, primarily for Texas Parks and Wildlife. He is the founding director of Great Plains Lore and Natural History, Inc.

Jedediah Smith Wilderness Horsepacking Seminar

June 23-24 Part I: 615 Around the Corrals: (Fox Creek, ID)

\$80 (Member's fee \$75)

June 25-27 Part II: 618 Practicum: A 3-Day Wilderness Ride

\$200 Horse furnished. (\$125 if you bring your own horse.)

(Member's fee \$190/\$115)

Limit: 12

This course has been designed for people who have access to riding horses and/or pack animals and want to learn more about how to use them for wilderness trips. (Rental horses and tack are available for Part II for those who do not have their own.)

Part I will be spent "around the corrals" at the instructor's Fox Creek Pack Station west of the Teton Range near Driggs, Idaho. With emphasis on environmental concerns and low-impact techniques, enrollees will study all aspects of horsepacking: equipment, knots, ties, splices, selecting a pack string, hobbling and picketing, weighing and balancing the load, trip planning, and more.

For those who want to follow up with a practical application, Part II will be a trip (meals included) into the Jedediah Smith Wilderness on the west slope of the Tetons to reinforce and build on the topics studied in Part I.

Richard Clark, Ph.D., is a native of the upper Snake River Valley and has spent over a decade as a professional guide and outfitter in the Tetons and Yellowstone. He is a faculty member at Ricks College. His wealth of outdoor experience has been augmented with academic preparation in biology and botany at Utah State University, the University of Oregon, and Brigham Young University.

Birding Yellowstone: 616

June 24-25

\$75 (Member's fee \$65)

Limit: 10

The objective of this fast-paced course will be to see as many Yellowstone bird species as possible in two days! The class will feature early morning departures to visit prime locations and varied habitat sites with a goal of spotting more than 50 species including the osprey, bald eagle, and trumpeter swan. There will also be opportunities to observe many of the park's mammals. The class will begin at 8:00 p.m. on Friday, June 23 with a session on birding in Yellowstone.

Richard Follett, see description under "Life Histories of Yellowstone Birds."

Women and Wilderness

June 24-25 Session I: 617 An Introduction

June 26-27 Session II: 619 Overnight Backpacking Trip

\$75 for session I (Member's fee \$65)

\$140 for both sessions (Member's fee \$120)

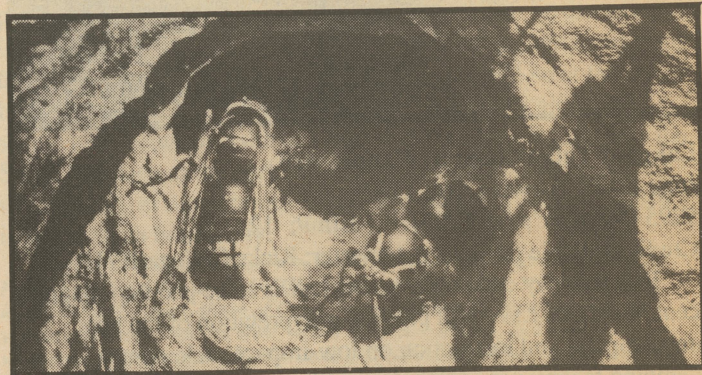
The first session is for women of all backgrounds, including those with little or no previous outdoor experience, and will provide an introduction to the basic practical skills for wilderness travel and camping. Moderate day hikes to experiment with equipment will incorporate information about the flora and fauna



of the Yellowstone ecosystem, discussions of psychological and physical conditioning for wilderness travel and will emphasize low-impact camping.

The second session is an optional follow-up to the first for those who want more experience learning the essentials of backpacking: how to pack, food selection, checklists, hazards, and low impact techniques. The overnight trip will provide an opportunity for practical applications and for discussion of topics related to women and wilderness. Participants must provide backpacking gear and food.

Cynthia Andrus is the Institute's field manager. She has a degree in outdoor/elementary education, has taught Institute courses for five summers, and is experienced in the outdoor-gear business and as a travel consultant.



Beetles, Bugs, and Butterflies: 620

June 26-28

\$105 (Member's fee \$95)

Credit available (G or U, 1 semester credit; ID State U)

Insects and other arthropods are the most abundant, varied, and widespread animals in Yellowstone Park. Their total biomass exceeds that of all the bears, birds, and bison combined, and yet they go unnoticed as they suck sap, pollinate flowers, kill trees, feed fish, and recycle deadwood and carrion. Various macro- and microhabitats comprising the Park system will be surveyed and characterized in terms of the resident arthropod assemblage, with a focus on the significance of these animals to aesthetics and the park's ecological equilibrium.

Robert Anderson, Ph.D., is an entomologist and professor of Biological Sciences at Idaho State University. In addition to General and Medical Entomology, he teaches courses in General and Invertebrate Zoology, and Parasitology. He has published works in applied ecology and medical entomology, and most recently completed research on the biology and ecology of the Idaho sand dunes tiger beetle.

Birds of Yellowstone: 621

June 26-30

\$195 (Member's fee \$185)

Credit available (G or U, 2 quarter hours; U of MT)

This introductory ornithology course will emphasize field identification and ecological relationships of birds in the Yellowstone ecosystem. Field surveys include a hike to the summit of Mt. Washburn, a breeding bird census on Blacktail Deer Plateau, observations of osprey nests in the Grand Canyon of the Yellowstone, a boat trip on Yellowstone Lake, and numerous opportunities to observe waterfowl on the pothole lakes of Lamar Valley.

An effort will be made to tailor instruction to the individual needs of the enrollees. Amateur birders, including novices, as well as teachers, and undergraduate and graduate students will find this course extremely informative. Binoculars required.

Dick Follett, see write-up under "Life Histories of Yellowstone Birds."

Hiking and Camping in Grizzly Country: 622

June 28-29, Pebble Creek

\$75 (Member's fee \$65)

Limit: 10

Moderate hikes of 5-6 miles each day and an overnight in the Yellowstone backcountry will provide the format for this class which will emphasize safety and precautions necessary in grizzly country. The first morning of this course will be devoted to a discussion of the history of bear-man confrontations followed by a discussion of techniques for the prevention of such confrontations including suggestions for dealing with grizzly encounters. The remainder of the course will cover camping techniques and further discussion about the current status of the great bear and its uncertain future. *Participants must provide their own backpacking gear and food.*

Bill Schneider is the author of Where the Grizzly Walks, The Hiker's Guide to Montana, and dozens of magazine articles on grizzlies. He has a degree in wildlife biology and was editor of Montana Outdoors for nine years. He is currently a publisher with Falcon Press of Billings and Helena, Montana, a company specializing in hiking guides and other outdoor books.

The Flight of the Nez Perce Through Yellowstone-1877: 623

June 30-July 1

\$75 (Member's fee \$65)

Often romanticized and poorly understood, the flight of the Nez Perce is a tragic, human drama that tells us a great deal about Native American culture. This course will trace the path of the fleeing Nez Perce as they raced to sanctuary in Canada. Pursued by the army in the summer of 1877, they passed through some of the roughest terrain in Yellowstone Park. This story of the Nez Perce in Yellowstone is a mixture of Native American, environmental, military and social history. Readings, slides, and on-site visits to historic points along their route will be included in the course.

Bill Lang, Ph.D., is a historian and specialist in environmental and national park history who has taught at Carrol College, Montana State University, and the University of Montana. For 11 years he was editor of Montana the Magazine of Western History and is the author of Montana: Our Land & People and The Centennial West.

Finding Your Own Voice:

A Wilderness Writing Workshop: 701

July 2-5

\$155 (Member's fee \$145)

This four day workshop is for anyone who loves nature and likes to write. Good health, curiosity and enthusiasm are the only prerequisites. Designed to expand our awareness of the natural world in Yellowstone as well as deepen our appreciation of the wildness within ourselves, this class will combine writing and experiential exercises, both indoors and outside, with group interaction and guided field trips. We will spend time at an active geothermal area not often found by the average visitor, explore animal habitats and spend most of a day at a burn site created by the fires of 1988. There will be ample time to write and encouragement to share and learn from each other. The course goals are to increase powers of observation, improve descriptive writing skills, deepen personal trust and confidence, and stimulate creativity. This course begins at 7:00 pm, July 1.

Deborah M. Bond, Ph.D., is a wildlands enthusiast, psychotherapist, and free lance writer. She has been an affiliate professor at the University of Montana. Her poetry has appeared in Poetic Voices in America, Lucidity, Raptor Room News, and Perceptions. Dorothy Hinshaw Patent, Ph.D., is the author of more than fifty science books for children. She is a recipient of the Eva Gordon Award (American Nature Study Society), Golden Kite Award (Society for Children's Book Writers) and Golden Kite Honor Award. Most of her books have been selected as Outstanding Science Trade Books for Children.

Yellowstone's Birds of Prey: 702

July 2-4

\$105 (Member's fee \$95)

Credit available (U, 1 quarter hour; MSU)

This course features Yellowstone's hawks, eagles, falcons, and owls, collectively known as raptors, in their natural habitats. Identification will be emphasized along with the role of predation in ecological communities, predator-prey relationships, breeding strategies, and habitat influences. Conservation measures and management problems unique to raptors will also be examined during the course. A special boat trip to Frank Island on Yellowstone Lake will be made to see nesting ospreys and bald eagles.

John W. Martin is currently a district realty specialist acquiring wetlands for the National Wildlife Refuge system in Montana. His research leading to an M.S. in Wildlife and Range Resources was based on Northern Harrier habitat utilization.



Family Days in Sunlight

July 2-4: 703

Limit: 5 families

July 8-10: 710

Limit: 5 families

\$80 For one parent and one child plus \$20 per additional family member (Member's fee \$70 plus \$15 per additional)

Sunlight Basin and the Beartooth Mountains form the northeast flank of Yellowstone, an area noted for its scenic, high country beauty. This two-night, two-day course will give families, parents and children together, a chance to share in learning about, and from, this natural wonderland. Participants will be introduced to the area's geology, wildlife, archaeology, history, and the fires of '88, as well as naked-eye astronomy, photography, and the folklore and mythology of the region.

The course will headquarter adjacent to the park on the Shoshone National Forest at Fox Creek Campground. Field trips will include short hikes. Enrollees should meet at Fox Creek to set up between 6-8 pm on the first day (July 2 and July 8, respectively). Activities will run until 3 pm on the final day. Families who do not plan to stay in their tents, campers, or RVs may request a list of nearby accommodations.

Jim Garry, see write-up under "Bears: Folklore and Biology."

Cynthia Andrus, see write-up under "Women and Wilderness."

Eagles of the Yellowstone Ecosystem: 704

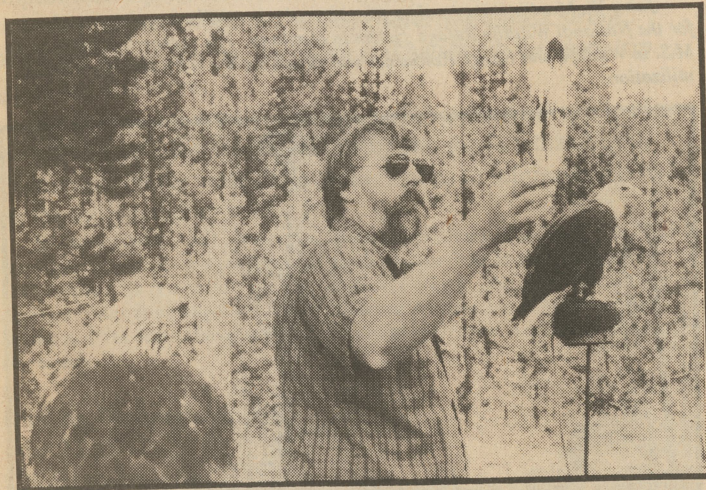
July 5-6

\$75 (Members fee \$65)

Bald eagles and golden eagles will be the subjects as the instructor compares and contrasts their hunting patterns, habitat preferences, mating strategies, nesting behavior, territoriality, and competition with other species.

Presentations will combine field trips with discussions on radio tracking, eagle biology, management efforts, research programs, and threats to eagle habitat. The instructor will bring a captive of each species.

Al Harmata, Ph.D., is a raptor biologist, eagle specialist. He is an adjunct professor at Montana State University involved with research on bald eagles of the Yellowstone ecosystem.



Close-up Photography in Yellowstone: 705

July 5-6

\$75 (Member's fee \$65)

This workshop will emphasize the basics of close-up and macrophotography and will assume a working knowledge of photographic principles and equipment. Topics include ethics of nature photography; macro basics; film and equipment selection; depth of field; making the most of natural light; and technique for using flash in the field and obtaining natural effects. Mornings will be spent in the classroom; afternoons will be devoted to field sessions. Emphasis will be on creativity combined with technical excellence. A suggested list of equipment will be sent to enrollees.

Sandy Nykerk is an award-winning freelance photographer and naturalist. Her work has been published in many calendars, books, and journals. She also teaches photo workshops in Illinois and Wisconsin; leads photo tours in Yellowstone and Utah; teaches and leads tours for The Morton Arboretum; and serves on the Greater Yellowstone Coalition board.

Interpreting Yellowstone with "Ranger Ted"

July 5-7 Fishing Bridge: 706

August 9-11 Fishing Bridge: 807

\$85 for one adult and one child, plus \$30 per extra family member (Member's fee \$80, plus \$25 per extra family member) Credit available (G, 2 semester hours; BYU)

Participants will be introduced to the wonders and dilemmas of Yellowstone by a retired ranger-naturalist. His series of programs and nature walks will encompass themes such as park history, environmental issues, personal reminiscences, kinship and interdependence of life forms, predator-prey relationships, and wilderness ecosystems. Activities will include short hikes, a visit to a bear den, wildlife observation, and plant identification.

10



Educational goals and techniques for effective field instruction of youngsters will also be discussed.

The third day of the course will be a wilderness hike to Avalanche Peak for a spectacular view across Yellowstone. The pace will be moderate with plenty of opportunities to stop to discuss the flora and fauna and other topics relevant to Yellowstone.

(Note: This class will meet in the Fishing Bridge area. A site will be reserved for group camping at Bridge Bay campground. Information about other lodging and camping options will be sent to registrants.)

Ted J. Parkinson served 37 seasons as a ranger-naturalist in Yellowstone and has delighted thousands of children with his informative, inspiring nature walks. As a special faculty member at Brigham Young University he has taught environmental biology and natural history. He is the author of the "Ranger Ted" conservation programs presented throughout northern Utah.

Research Field Trip Series:

For the first time, the Yellowstone Institute is sponsoring a series of one- and two-day seminars/field trips with scientists who are conducting research in the park. This series will provide an opportunity to learn first-hand about the numerous research investigations in the park and will give students a chance to help in the collection of data. Each seminar will initially meet in Mammoth and then go into the field from there.

July 6 Pronghorn Antelope Research: 707

July 7 Plants, Fire and Grazing: 708 (see p.11)

August 10 Natural Geothermal Tracers: 809 (see p.17)

August 11-12 Coyotes & Mountain Lions: 811 (see p.18)

Pronghorn Antelope Research in Yellowstone: 707

July 6

\$20 (Member's fee \$15)

The small pronghorn population in Yellowstone has apparently been isolated for many years from other pronghorns in Idaho, Montana, and Wyoming. The park herd has fluctuated greatly in size, and current research is attempting to determine the reasons why. The course will begin with a historical review and discuss possible effects of past management actions. Current population genetics will be discussed (in layman's terms), and conservation biology issues will be reviewed. With this background knowledge, the class will gather actual field data. The information will be used to estimate the pronghorn population size on the summer range and calculate the breeding effectiveness of territorial bucks.

M. Douglas Scott, Ph.D., does research on pronghorns for the Yellowstone National Park Research Division. He has conducted research in and taught wildlife management and land use planning at Auburn, Southern Illinois, and Montana State Universities. He has authored over 100 scientific papers, articles, and books.

Plants, Fire and Grazing: Does Everybody Benefit?: 708
July 7

\$20 (Member's fee \$15)

Students will have the opportunity to be involved in research on the interaction between fire and large ungulate (elk and bison) grazing on plant growth and community structure. You will assist in data and plant sample collection and observations of grazing patterns and plant growth patterns. Time will be spent observing large ungulates to see which plants they choose to graze and how intensively they graze them. Study plots, which were established immediately after the fires of 1988, will be visited on the Northern range.

Linda Wallace, Ph.D., is associate professor of botany at the University of Oklahoma. She has conducted research intensively in Yellowstone during the past two years on the interactions between grazing and fire on plant growth. Dr. Wallace has conducted similar research in the Wichita Mountains of Oklahoma and the Serengeti plains of Tanzania.

Wildflowers & Wildfire: 709

July 7-8

\$75 (Member's fee \$65)

Credit available (U, 2 quarter hours when taken in conjunction with one other Wildflower class, 608, 711 or 715; U of MT)

Wildfire effects on wildflowers and the response of vegetation to the fires of '88 will be studied during short botanical hikes in burned areas from Lamar Valley across the northern part of the park. The course will emphasize fire effects on individual plant species and plant communities. Coniferous forests, aspens, sagebrush, and meadow ecosystems will be examined, and plant responses to various levels of fire severity will be observed. Mass flowering the second year after a fire has been reported by several fire ecologists. We will look for this special treat in the 1990 class.

Wayne Phillips, see write-up under "Wild Edible Plants."

Family Days in Sunlight: 710

July 8-10 (see description on p. 9)



Alpine Wildflowers: 711

July 9-10

\$75 (Member's fee \$65)

Credit available (U, 2 quarter hours when taken in conjunction with one other Wildflower class, 608, 709 or 715; U of MT)

Wildflowers growing in the alpine tundra above the tree line will be the focus of this course. Participants will make day trips to the high country of the Beartooth Plateau to study the beauty of flowers found only in circumpolar arctic environments and on the highest mountain tops below their arctic home. A variety of

alpine ecosystems will be studied including the "krummholz" or windbattered, horizontal pygmy forest, the cushion plants of the boulder fellfields, the lush alpine meadows, and the flowers that spring up behind the receding snowbanks.

Wayne Phillips, see write-up under "Wild Edible Plants."

Ecology of Greater Yellowstone: 712

July 10-14

\$195 (Member's fee \$185)

Credit available (U or G, 2 quarter hours, U of MT)

This class will provide an introduction to the greater Yellowstone ecosystem's ecology, plant and animal populations, biotic communities, key management challenges, and use of the ecosystem concept in the greater Yellowstone area. Each of the major biotic communities will be visited, and the role of succession, fire and other factors will be discussed. The course will feature guest speakers plus field trips to observe large mammal and bird species and to survey some of the ecosystem's major challenges—wildlife management, threatened and endangered species, and surrounding forest lands. The course is designed for beginners as well as advanced students.

Tim W. Clark, Ph.D., is currently an adjunct professor at Yale and on the adjunct faculty at Idaho State. He is the author of Ecology of Jackson Hole, Wyoming, and over 140 articles for technical and popular publications. In 1985 he received the Chicago Zoological Society's Presidential Award for outstanding work in conservation.



Fire, Ice and Fossil Forests: 713

July 11-13

\$105 (Member's fee \$95)

Credit available (U, 1 quarter hour; MSU)

This course will introduce participants to the unique petrified forests of Yellowstone and to the Ice Age history of the park which profoundly influenced today's flora and fauna. There will be a discussion of the theory that repeated episodes of volcanic activity buried living forests in ash and mudflows to be slowly petrified by mineral-bearing hot water. Moving to the last two million years, discussion will focus on glacial ice and volcanic explosions. The course will involve a field trip to observe evidence of glaciation and discuss the volcanic history of Yellowstone and the Absaroka and Beartooth Mountains, an all-day hike on Specimen Ridge, and a hike up Mt. Washburn where glacial and volcanic phenomena are visually united.

John Good was chief naturalist of Yellowstone National Park for six years. During his distinguished career in the National Park Service he served as superintendent of Acadia and Everglades National Parks and assistant superintendent of Yosemite. He holds a masters degree in geology and is a fellow of the Geological Society of America.

Environmental Photography for Children: 714

July 11-13 Old Faithful

\$105 (Member's fee \$95)

This is a three day course for children 9-12 years old; emphasizing using a camera as a tool that will provide a child a view of the world she or he might not otherwise take the time to see. Mornings will be spent in the field learning and observing. The afternoons will emphasize specific photographic skills with both structured assignments and creative freedom. Projects include using solar sensitive paper, polaroid cameras, and whatever camera each child brings. (Each child must provide a 35mm camera: we recommend a simple one without interchangeable lenses. Participants will also need to pay for overnight development—about \$10, so pictures can be shared and discussed.)

Sandy Nykerk, see write-up under "Close Up Photography."

Jim Garry, see write-up under "Bears: Folklore & Biology."

Wildflowers of the High Country (Llama Trek): 715

July 12-14 Beartooth Backcountry

\$235 (Member's fee \$225) Limit: 10

Credit available (U, 2 quarter hours when taken in conjunction with one other Wildflower class, 608, 709 or 711; U of MT)

For this backcountry study of alpine plants and their environment, group gear and food will be transported by llama to a campsite near the high country lakes of the Beartooth Mountains. Participants should be prepared for hikes of 4-5 miles per day on relatively gentle terrain at an elevation of about 8000 feet. Wildflowers along the edges of the many lakes, streams, snowbanks and glaciers will be featured, from the alpine tundra to the open subalpine forest.

A camp tender will prepare meals. Enrollees must bring sleeping bag, pad, and pack. Fee includes group equipment and food.

Wayne Phillips, see write-up under "Wild Edible Plants."

Wolves of Yellowstone: The Missing Link: 716

July 14-15

\$80 (Member's fee \$70)

This course will focus on the wolf as the major missing link in the Yellowstone ecosystem. The ecological role of the wolf as a major predator of large ungulates will be examined as well as the historical and present status of wolves and their habitat in the park. The course will also explore the issues, options and strategies associated with restoration of wolves to Yellowstone. Course fee includes \$15 for a large resource manual assembled by the instructor.

John Weaver is a wildlife researcher with the Northern Rockies Conservation Cooperative in Missoula, Montana. He holds graduate and undergraduate degrees in wildlife science and has published scientific papers on wolves including a treatise on "The Wolves of Yellowstone." He was a member of the Northern Rocky Mountain Wolf Recovery Team and is now studying wolves in Banff and Jasper National Parks for his Ph.D.

Learning Outdoor Photography: 717

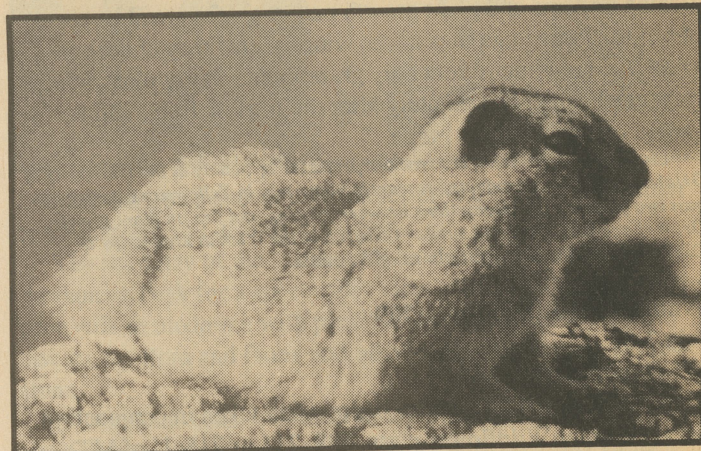
July 15-18

\$155 (Member's fee \$145)

This field course is geared to those who want to develop their skills in outdoor photography. No previous photography experience is necessary. The course will provide instruction on all aspects of the use of the camera, proper exposure, composition, and use of tripods and wide angle, telephoto, and close-up lenses. Special emphasis will be given to seeing and interpreting

a variety of Yellowstone subjects including wildflowers, water scenes, landscapes and wildlife.

Pete Houdeshel's photographic prints have been featured in galleries in over 25 cities across the nation and his clients include Hallmark cards, Marriott Hotels, Aloha Magazine, and Hyatt Regency Hotels. He worked for ten years for New Worlds Magazine and has a special interest in discovering how to present scenes with imagination and clarity. He flies jets for Delta Airlines when not out with a camera.



Small Mammals: Prey and Predators: 718

July 16-18

\$105 (Member's fee \$95)

Credit available (U or G, 1 semester hour, ID State U)

This course emphasizes identification, ecological role and factors affecting the distribution and abundance of small mammals in Yellowstone. Field work will involve live trapping and tracking small mammals, and their role in the ecosystem as prey and predators will be considered. We will also study the impact of the 1988 fires on small mammals as well as their behavior.

Don Streubel is Director of the Yellowstone Institute. He holds a Doctor of Arts degree in biology and is a professor of biology at Idaho State University. Recently he authored Small Mammals of the Yellowstone Ecosystem.

Three Days at the Buffalo Ranch (Ages 8-12): 719

July 19-21

Limit: 20

\$105 (Member's fee \$95)

This three-day stay at the Lamar Buffalo Ranch is especially for children. It provides an exciting time for youngsters to learn and explore in a national park and make new friends. Each day includes a hike to observe wildlife and learn about plants, ecology, and the park's history. Supervised projects such as making books, silkscreening, plaster casting, painting murals and sculpture may be a part of each day, depending on interests of the students. Active days of fun and learning are concluded each evening with games, songs, and wildlife films. Fee includes meals and lodging. Children must provide their own sleeping bags, canteens, and day packs. (Parent's Note: Classes for adults have been scheduled to coincide with the children's course to give parents class options. See write-ups for "Exploring The Yellowstone Ecosystem," and "Geysers, Mudpots, and Hot Springs.")

Cynthia Andrus, see write-up under "Women and Wilderness."

Louise Bruce has a degree in recreation management. She has extensive experience in outdoor and environmental education through work with nature centers, schools, and camps and at Yellowstone and Grand Canyon National Parks. She has taught at the Institute for five years and currently works as an organizer for the Northern Plains Resource Council.

Gillian Bowser holds an M.S. in zoology and has worked in Yellowstone as a wildlife biologist and entomologist for the past five years.

Exploring the Yellowstone Ecosystem: 720

July 19-21 Mammoth

\$75 (Member's fee \$65)

This course will look at park geology, wildlife, botany and history in the context of an ecosystem. It will examine Yellowstone's fiery birth, its frozen past and how these events prepared the stage upon which plants and animals act out their interdependent roles. The class will look at geysers and hot springs and many wildlife species and will consider what they are, why they are present in Yellowstone and the threats they face. An abiding interest in nature, not scientific training, is the only requirement. The class will meet from 1:00 pm, July 19 through early afternoon July 21 and will headquarter at Mammoth Hot Springs. Contact the Institute office for lodging and camping information. (Note: See schedule tie-in with children's class, "Three Days at the Buffalo Ranch.")

Don Streubel, D.A., see write-up under "Small Mammals."

Tom Watson teaches high school biology and geology in California. He has spent 11 summers studying the Greater Yellowstone ecosystem at the Yellowstone Institute and has worked as a volunteer for the Institute.

Geysers, Mudpots, and Hot Springs: 721

July 19-21 Old Faithful

\$90 (Member's fee \$80)

Credit available (U, 1 quarter hour; MSU)

The rare, spectacular geothermal features of Yellowstone will be explored in this course. After a short introduction, visits to mudpots, hot springs, and geysers will begin with hikes timed to see several of the less common geysers erupt. The class will meet at the Grand Canyon at noon on July 19 and then proceed to the Old Faithful area for a full day of geyser gazing on July 20. Norris Geyser Basin and other sites will be visited on July 21, and class will end in early afternoon. No background in geology is required. (Fee does not include lodging. This class will headquarter at Old Faithful. Early lodging reservations are essential, contact the Institute office for information on lodging and camping.) (Note: See schedule tie-in with children's class, "Three Days at the Buffalo Ranch.")

Duncan Foley, Ph.D., teaches geology at Pacific Lutheran University in Tacoma, Washington. He has worked throughout the western United States and Guatemala in volcanoes and geothermal systems and has taught Institute classes for the past eleven years.



Wilderness Horsepacking

July 19-23, Teton Crest Trail: 722 Limit: 12 per class

July 25-29, Exploring the Bechler Canyon Trail: 727

July 30-August 3, The Traditional Nez Perce Trail: 733

August 4-8, Indian Trails: 803

August 9-13, Nez Perce Trail: Alternate Route: 808

August 14-18, The Washburn Expedition Trail: 815

\$405 per 5-day session (Member's fee \$395)

Along with its specific theme, each course will stress low-impact use of pack stock in the backcountry. In addition to instruction in the use and care of pack and riding horses, participants will also learn how to camp and travel in the wilderness without damaging the fragile country. Courses are participatory rather than catered trips. *Fee includes horses, special equipment and food. Participants must provide their own sleeping bags.*

The July 19-23 Teton Crest trip will emphasize the special concerns of horseback trips through the fragile alpine ecosystem found along the west slope of the Tetons. At times the route passes through 10,000 ft. elevations with spectacular views of the Tetons—including striated walls, tarn lakes and braided streams.

The July 25-29 trip takes place in the seldom-traveled Bechler Canyon country between Old Faithful and the southwest corner of the park which features spectacular meadows and scenic canyon waterfalls.

The July 30-August 3 course will explore the probable route taken in August 1877 by Nez Perce Indians while pursued by the U.S. Army. To this day, their route through one of Yellowstone's most remote areas is unknown. It was wild and rugged then and remains so today.

The August 4-8 session will explore portions of Indian routes through Yellowstone, such as the Bannock Trail. The ride will take participants through sections of the upper Lamar Valley, Mirror Plateau, and Pelican Creek and provide a chance to examine the effects of the Clover-Mist fire of 1988.

The August 9-13 session will explore an area that has interested some historians as a possible Nez Perce route. The ride will loop through portions of the Pelican Creek and Broad Creek areas and end near Canyon.

The August 14-18 course will follow a portion of the original Washburn Expedition trail along the east and south shores of Yellowstone Lake through country that is still much as it was in 1870 when Washburn's party rode through it.

Richard Clark, Ph.D., see write-up under "Jedediah Smith Wilderness Horsepacking."

**Mammal Tracking:
Interpreting Tracks, Scat, and Other Sign: 723**
July 22-25

\$175 (Member's fee \$165)

Credit available (U, 2 quarter hours; U of MT)

Mammals are elusive and hard to observe in the wild. Much can be learned about them from detecting and reading their sign. Nature detective work will teach enrollees the joys of interpreting natural history from mammal sign. Emphasis is placed not on track identification, but on tracking as a process for understanding animal behavior.

Course content includes the role of natural history and ecology, keeping field notebooks, taxonomy, anatomy, terminology, measurements, track averaging, relative size, estimating track age, print identification, gait patterns, estimating speed, field techniques, finding clues, following trails, and teaching tracking. Slide lectures will provide access to Dr. Halfpenny's years of field experience, and laboratories will introduce concepts of gaits and speed. Field sessions will aid in learning to trail and read stories in tracks. (The fee includes a copy of the instructor's book plus other course materials.)

Jim Halfpenny, Ph.D., is coordinator of the University of Colorado Long-Term Ecological Research Program and a Research Fellow of the Institute of Arctic and Alpine Research. He has taught for 21 years in the greater Yellowstone ecosystem and is the author of Mammal Tracking in North America and Winter: An Ecological Handbook. Recently he has tracked mammals in Tanzania and Africa and studied endangered mammals of the Tibet-Quinghai Plateau of China.

Backcountry Llama Trekking: 724

July 23-27 Shoshone Lake Trail

\$360 (Member's fee \$350)

Limit: 10

Participants in this course will have the opportunity to hike the backcountry of southwestern Yellowstone for five days using llamas to transport group gear and food. The instructor will discuss topics such as natural features, plant identification, outdoor skills, nature awareness, minimal impact camping, and use of pack animals.

Enrollees should be prepared to hike 4-7 miles per day at



elevations of 7500 to 8000 feet with day packs of 5-15 lbs. Cost includes food and group camping gear. Each enrollee must bring a sleeping bag, canteen, and day pack and will be allowed 20 lbs. of personal gear for llama transport. This is a participatory rather than a catered trip.

Kari Black is on the Recreation Education faculty at Ricks College and also serves as an instructor for Wilderness Education Association. She has been a llama owner and packer for 6 years and a backcountry expedition leader in Yellowstone and Teton Parks for 12 years.

14

Hydrothermal Systems & the Yellowstone Caldera: 725

July 23-28

\$245 (Member's fee \$235)

Credit available (U or G, 3 quarter hours; U of MT)

The class will present a thorough discussion of the geological evolution of the Yellowstone caldera and the nature and occurrence of hot springs, geysers, and mudpots. Lectures will include discussions of volcanic rocks, caldera cycles, and development of geologic structures that influence the location of hydrothermal systems and the geology of geothermal features and the chemistry of thermal waters. Field trips will visit areas which feature the many types of rocks produced during several stages of the Yellowstone caldera and famous and unusual hydrothermal features that are off the beaten path.

The class will have special appeal for teachers of earth science and others with serious interest. Though there is no prerequisite, a background knowledge of geology will help in understanding many of the topics.

Duncan Foley, Ph.D., see write-up under "Geysers, Mud Pots, and Hot Springs."

Roy Mink, Ph.D., was a manager of geotechnical science with Morrison-Knudsen Engineers and is now Director of the Idaho Water Resource Research Institute with the University of Idaho. He has extensive experience in geothermal systems, was formerly chief of the geothermal energy branch of the U.S. Department of Energy at Idaho Falls, and has worked on national geothermal programs with the DOE. He is presently working on a geothermal power project in Guatemala.

Clay Nichols, Ph.D., is deputy assistant manager for Projects and Energy Programs at the Idaho Falls office of the Department of Energy where he manages programs at the Idaho National Engineering Laboratory and many universities. He has also worked on national geothermal programs for the DOE and has been a seasonal naturalist in Yellowstone.

Family Days:

Exploring the Park with a Ranger Family: 726

July 23-25 (Grant Village)

Limit: 8 families

\$80 for one parent and one child plus \$20 per additional person (Member's fee \$70 plus \$15 per additional person)

This is a class for families—taught by a family. Two former National Park Service rangers and their 3-year-old son will lead you off the beaten track, sharing their years of experience in Yellowstone. The course is based at the Grant Village Group Campsite, but families may stay in nearby lodges. During the class we'll take easy walks and even a strenuous hike, but all at a family pace. We'll explore the West Thumb Geyser Basin, hike to two vantage points overlooking Yellowstone Lake, learn about how fish are managed in the park, and sharpen photography and compass skills. Time for craft making, family picnics, and a special Yellowstone gift exchange and skits that will conclude the final evening. You may stay at the Grant Village Group Campsite starting the evening of Sunday, July 22. Class begins at 9:00 am Monday, July 23 and runs until 10:00 pm on Wednesday, July 25. (Contact Institute registrar for more information about lodging at Grant Village.)

Jack de Golia is the Public Affairs Officer for the Beaverhead National forest in Dillon, Montana. For seven years he was an interpretive naturalist in Yellowstone, in charge of the environmental education program. He has written two books, about Everglades National Park and fire.

Louise Bruce, see write-up under "Three Days at the Buffalo Ranch."

Alex de Golia, age 3, first came to Yellowstone from the the hospital in Livingston, Montana when he was five days old. His first word was "elk" and his first phrase was "big elk eat." He brings his unique perspective of Yellowstone that only a little kid can have!

Horsepacking: Bechler Canyon Trail: 727

July 25-29 (see description p.13)

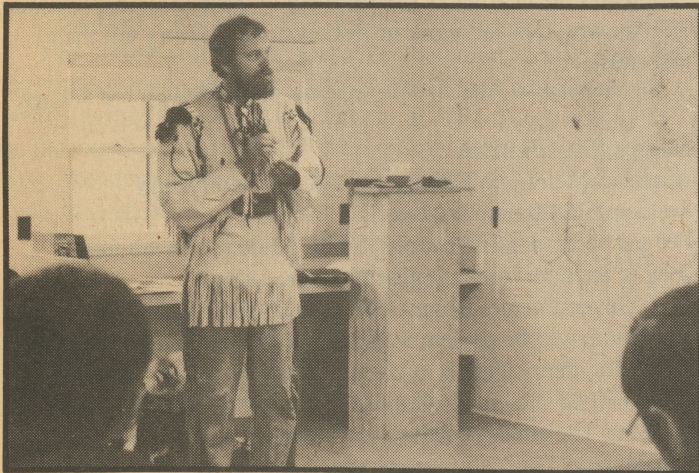
The Ways of the Mountain Men: 728

July 26-28

\$105 (Member's Fee \$95)

This course will introduce the participants to the "Old Ways" of the people who lived and wandered the region now known as Yellowstone National Park. Discussion, demonstration, and fieldwork will be utilized to help participants develop an understanding and appreciation of the history, crafts, and skills of the people who inhabited and explored Yellowstone prior to the mid-19th century.

The emphasis will be primarily experiential in nature, with brief lectures. Enrollees will practice the crafts of beading and quilling, will learn the outdoor game "coup" based on the skills of tracking and stalking and will wander into the surrounding mountains to practice tracking and stalking skills.



Fred Donaldson has a Ph.D. in geography and has taught a wide variety of courses on Native American studies, beading and tanning, tracking and stalking, and environmental education. He has authored articles on the mountain men and is a member of the Beartooth Mountain Men.

Intro to Hiking & Camping for Youth (Ages 12-14): 729

July 26-28 Pebble Creek

\$105 (Member's fee \$95)

From the group campsite at Pebble Creek, in northeast Yellowstone, we will dayhike into Cache Creek and the upper and lower reaches of Pebble Creek. Emphasis will be on hiking and backpacking skills; including discussing wilderness ethics, map reading, natural interpretation, and fire ecology. Evenings will be spent learning more about wildlife, equipment, stargazing, Yellowstone history, and cooking.

Cynthia Andrus, see write-up under "Women & Wilderness."

Bill Williams holds a B.S. in Urban & Regional Planning and Environmental Studies. His first summer with the Institute was in 1981, teaching a children's class and assisting with backcountry classes. He co-leads a photo tour in the park in the summer and teaches 6th grade in Southwest Colorado during the school year.

Family Days: Camping Rendezvous: 730

July 27-28 Tom Miner Campground

\$75 for one parent and one child plus \$20 per additional family member (Member's fee \$65 plus \$15 per extra family member)

Limit: 7 families

Families in this class will rendezvous at an isolated mountain campsite with their tents, campers, or RVs. From the group encampment near the northwest corner of the park, on the Gallatin National Forest, they will take day hikes into the scenic backcountry and be introduced to a sampler of Institute topics

such as geology, meteorology, wildflowers, nature photography, animal behavior, and Yellowstone history. Around camp there will be discussion on campcraft, gear, outdoor skills, and wilderness ethics. The evening will feature a program on astronomy and Indian sky mythology. Topics will be geared for a variety of age groups. A map and directions to the campground will be provided in the student packet. Class begins at 10 am July 27 and runs through the night of July 28.

Robert C. Hoyle has taught astronomy at Lenoir Rhyne College and Catawba College and as a visiting lecturer at the University of North Carolina. He has trained Park Service personnel in sky interpretation and is the author of "Watchers of the Sky," a Native American sky mythology program produced by Morehead Planetarium.

Blair Hoyle has served as a seasonal ranger in both the Interpretive and Resource Management Divisions of Grand Teton National Park since 1975 and has a degree in medical technology.

Fire Ecology: 731

July 30-August 1

\$105 (Member's fee \$95)

Fire has always been a major force in Yellowstone. Ancient evidence is preserved in lake bottoms, and historical evidence can still be found in the trees themselves. This course will examine the interplay of fire and its environment, factors influencing ignition and spread, response of biotic communities to fire, and the role of fire in determining the characteristics of plant communities. The instructor will lead field trips to gather



data at both old and recent burn areas and to an ongoing fire if the opportunity arises. One day hike will cover 5-6 miles.

Don Despain, Ph.D., has worked in Yellowstone studying the park ecosystem since 1971. He helped develop and apply the park's natural fire program. He is a plant ecologist and the author of Flora of Yellowstone National Park, a field identification key.

Yellowstone's Night Skies: 732

July 30-August 2

\$140 (Member's fee \$130)

Participants will explore the wonders of the universe from the magnificent, unspoiled skies of Yellowstone during four days and three nights. Under a real-life planetarium, topics range from ancient and timeless observation techniques (such as keeping track of the planets, and predicting eclipses) to the mind-boggling concepts of the present (black holes, the slowing of time, where the universe ends). Special visual presentations, such as a 3-D movie filmed on Mars, and others taken in space by astronauts and by spacecraft arriving at various planets, supplement the indoor sessions and outdoor observing periods. The course is designed for people with no previous astronomy knowledge but will also be enjoyed by those with some training in the subject. Class begins on the evening of July 30 and concludes by noon on August 2.

Bob Berman is director of the Catskill Astronomical Society and author of hundreds of articles on astronomy, including "The Night Sky," a popular weekly column which has appeared for over a decade in New York and Massachusetts publications. He teaches astronomy in central New York and appears regularly on National Public Radio.



(Photo by Bob Berman)

Horsepacking: Nez Perce Trail: 733

July 30-August 3 (see description p.13)

Backcountry Photography: 734

July 30-August 3 Buffalo Horn Lakes

\$305 (Member's fee \$295)

This course will cover all of the subject matter in "Wildlife Photography" (June 13-16) but will take place in a backcountry setting. The group will spend most of its time in remote locations shooting infrequently viewed scenes. Outings will involve moderate hiking with light packs. Group equipment, food, and other heavy items will be moved by camp outfitters.

Camp gear will be taken by a horsepacker to a wilderness campsite in the Gallatin National Forest near the northwest corner of the park. Participants will accompany the instructor on a 4 mile hike to the site. Hikes are in mountain country at 6500-8500 feet elevations.

Each person must provide sleeping bag, pad, and pack. *Fee includes group equipment and food.*

Tom McBride, see write-up under "Wildlife Photography".

Yellowstone Storytelling Festival

August 4 Mammoth Elementary School Auditorium

Session I: 2:00 pm Session II: 7:30 pm

Fee per session \$2.50 Adults, \$1.50 Students & Children (Pay at the door; no preregistration necessary.)

Even though much has been written about Yellowstone, the majority of literature and history of the Yellowstone country is oral. A great diversity of stories about Yellowstone; this festival is an attempt to bring together storytellers and folklorists to share and swap their yarns with the public. The afternoon session will include an open microphone session when anyone can get up and tell a tale. The evening session will feature experienced storytellers who will keep you well entertained and, perhaps, on the edge of your seat. Yellowstone breeds stories to match the natural wonders of the park. The tales are worth the telling and the hearing. Come and enjoy these sessions, listening to folks who live and work in Yellowstone Country tell their favorites.

Jim Garry, moderator, see write-up under "Bears: Folklore and Biology."

Nature Film Festival

August 5 Mammoth Elementary School Auditorium

Session I: 2:00 pm Session II: 7:30 pm

Fee per session: \$2.50 Adults, \$1.50 Students & Children (Pay at the door; no preregistration necessary.)

Several nature filmmakers who emphasize the Yellowstone ecosystem will be present to discuss techniques and intricacies of filming their subjects in the wild. A series of award-winning films will be shown. Different films will be featured in each session. The ethics of nature photography will be discussed and considered. The Yellowstone area has been the site of filming of many excellent nature films. Come and enjoy an intensive review of some of the best. No advanced registration required. Seating will be on a first-come-first-served basis.

Sandy Nykerk, moderator, see write-up under "Close-up Photography in Yellowstone."

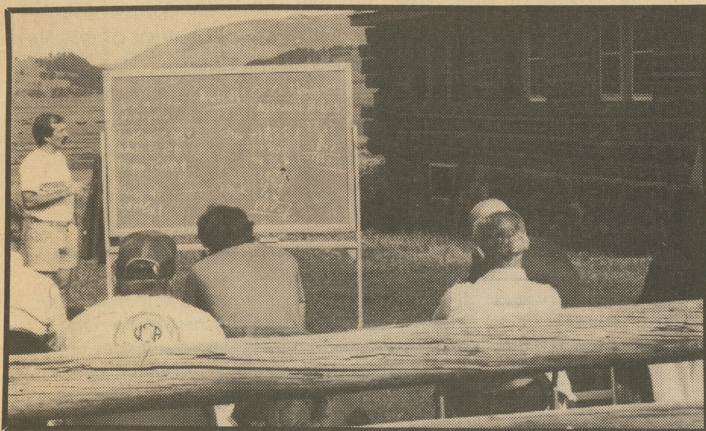
Fire in Paradise: The Second Year: 801

August 4-5

\$75 (Member's fee \$65)

During the summer of '88, Yellowstone was enveloped in wildfires of historically unprecedented magnitude. Thousands of acres were burned in some fashion. News stories told of Yellowstone's "incineration" and the blackening of the first and best national park. What really happened in Yellowstone? Is our park blackened forever? Were the predictions of devastation accurate? After two years the press coverage has died down. Towering flames generate much more interest than the patient efforts of streams in removing ash or the tiny lodgepole seedling emerging through charred soil. Dr. Shovic's course focuses on these changes, as well as reviewing what happened in Yellowstone during the fires. Like last year's course, we will examine different types of burns and soils, learn how soils are sampled and interpret the results. You will come to understand that soils are not just *dirt*; they are an essential part of the ecology of Yellowstone and its post-fire changes. Come prepared to be in the field.

Henry Shovic, Ph.D., is an interagency soil scientist for Yellowstone National Park and the Gallatin National Forest. He played an active roll collecting and analyzing samples for preliminary reports on fire effects during the summer of 1988.



Early Exploration in Yellowstone: 802

August 4-5

\$75 (Member's fee \$65)

This course will review the earliest attempts to map and chart the Yellowstone wilderness, from James Stuart's trip in the 1860's to the famous Hayden Survey of 1871-72. It will focus on the explorations of 1869-71 which led to the creation of the park. Readings, maps, historic photographs, and on-site visits to areas first visited by explorers will be included in the course.

Bill Lang, see write-up under "Flight of the Nez Perce-1877."

Horsepacking: Indian Trails: 803

August 4-8 (see description on p.13)

Star Trails West: 804

August 5-7

\$95 (Member's fee \$85)

This class will study early explorations of the West and the use of astronomy for navigation and map making. Emphasis will be given also to Native American astronomy and sky mythology and to the history of early American astronomy. Discussion will be augmented by three nights of observation of the clear, dark skies of the Lamar Valley, from a location on the old Bannock Indian trail. The class begins at 8 pm August 5 and concludes at midnight on August 7.

Bob Hoyle, see write-up under "Family Days: Camping Rendezvous."

Glacial Geology and Alpine Ecosystems: 805

August 5-8 Beartooth Mountains

\$250 (Member's fee \$240)

Limit: 12

Credit available (U or G, 1 semester hour, ID State U)

The Beartooths present an unusual combination of easy access, living glaciers, and alpine tundra. Utilizing a base camp at Upper Goose Lake in the Beartooth-Absaroka Wilderness near Cooke City, Montana, the class will have the rare opportunity to explore the dynamics of existing, living glaciers, glacial processes of erosion and deposition, peri-glacial features, climate, plant and animal communities as they combine to form the alpine tundra. Effects of the last major glaciation will be contrasted with modern, ongoing processes. Ecosystem damage caused by modern man will be analyzed, also. Camp gear will be hauled by a horsepacker to a high elevation campsite. Participants will hike about 8 miles to the site. *Fee includes horsepacking, food and camptender.*

James Halfpenny, see write-up under "Mammal Tracking: Interpreting Tracks, Scat and Other Sign."

John Good, see write-up under "Fire, Ice & Fossil Forests."

Geology of the Yellowstone Country: 806

August 6-10

\$195 (Member's fee \$185)

Credit available (U or G, 2 quarter hours; U of MT)

This course, conducted in the natural field laboratory of Yellowstone Park, will concentrate on the geological evolution of the area. Topics to be covered include volcanic rocks and processes, glaciation, earthquakes and faulting, hydrothermal features, sedimentary rocks and processes, metamorphism and tectonics. Completion of an introductory geology course is preferable but not required.

David Fountain, Ph.D. is a professor of geology at the University of Wyoming. He has taught field courses in Yellowstone and Glacier National Parks and served as co-instructor in a National Science Foundation course for science teachers. His research interests are crustal evolution and structure which he has studied in Europe, Canada, the northwest Pacific Ocean, and the Rockies.



Interpreting Yellowstone with "Ranger Ted": 807

August 9-11 (see description on p.10)

Horsepacking: Nez Perce Alternate Route: 808

August 9-13 (see description p.13)

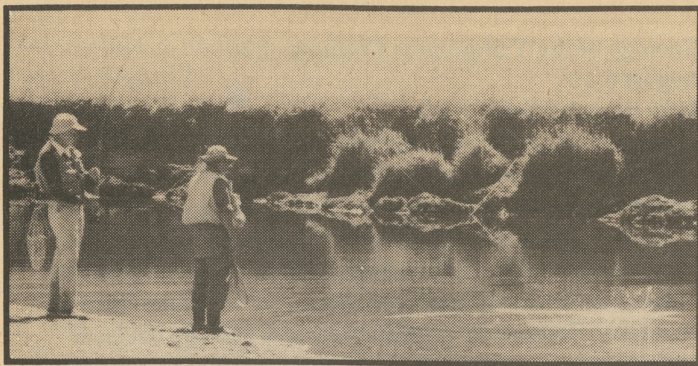
Natural Geothermal Tracers: 809

August 10

\$20 (Member's fee \$15)

In this field and laboratory exercise you will investigate geothermal connections between Yellowstone and private lands near the park boundary. It will involve soil sampling and testing to help map geothermal plumbing by locating associated unusually high concentrations of mercury and radon in the soil. The day begins with a short presentation on hydrothermal systems and groundwater. The group will collect soil samples on a line that crosses a fault suspected of transmitting hot water toward the north boundary. In the afternoon we will prepare the samples for analysis at the laboratory and late in the day we will calculate mercury concentrations on the computer. Finally, we will plot the data to see what shows up regarding leakage of volatiles from the fault zone. If we are fortunate, we may find new concentration values.

Wayne Hamilton, Ph.D., is a research geologist with the National Park Service in Yellowstone and adjunct assistant professor at Montana State University. His research involves measuring and mapping the subsurface geothermal systems in boundary areas subject to nearby geothermal development. He is also active in research at Yellowstone Lake, using records of lake levels to reconstruct a caldera deformation history.



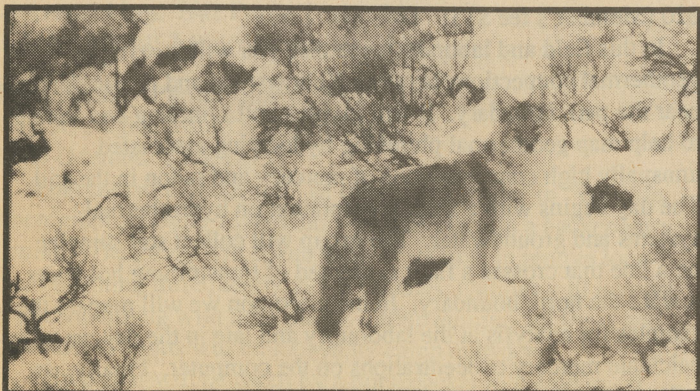
Fly Fishing the Catch-and-Release Way

August 10-12 less experienced: 810 Limit: 8
 August 17-19 more experienced: 819 Limit: 9
 \$145 (Member's fee \$135)

Both sessions of this course will emphasize the special nature of Yellowstone fishing—its abundance of native fish and the special regulations and fishing philosophies which have enabled park managers to protect and maintain a sport fishing resource. The course for less experienced persons will concentrate on the basics and is intended for those who have progressed far enough to purchase their own equipment but who have not spent much time actually fly fishing. About half the course time in this first session will be spent away from the water practicing casting and other techniques. During the second and third days, the instructor will work with half of the group each day on the stream. He will be available each evening for discussion. The limited enrollment will allow time for the instructor to work with each person one-to-one.

The session for the more experienced is for persons who have mastered the basics and will focus almost exclusively on fishing Yellowstone's waters. The instructor will act primarily as a resource person in assisting participants in polishing their skills. Most instruction will be on an individual basis or in small groups. The instructor will work intensively with three persons each day. During the other two days of each course, instruction will be limited to morning and evening discussions.

Richard Parks is the manager of Parks' Fly Shop, a family business that has been in Montana for over thirty years. Richard is highly respected as a fly tier, a teacher and a river guide and is intimately familiar with Yellowstone's waters.



Investigating the Ecology of Coyotes and Mountain Lions: 811

August 11-12
 \$40 (Member's fee \$30)

The ecology of coyotes and mountain lions in Yellowstone Park will be compared during two morning classroom periods

and two afternoon field trips. Discussions will focus on population dynamics, foraging ecology, and social behavior of coyotes and mountain lions, as well as other large predators. Research design, methods, and materials will be explained during "hands-on" seminars with radio-collared individuals. The ecological role of Yellowstone's other carnivores will be a part of the discussions. Participants should be prepared to hike 3 miles per day in possible rain and wind.

Robert Crabtree, Ph.D., is co-director of the Yellowstone Coyote Ecology project being done by the Wildlife Research Institute. His B.S. and Ph.D. degrees were earned at University of Idaho, Moscow, and a M.S. from Utah State University. He has taught at U.C.-Berkeley and his special interests include predator biology, socio-population dynamics, and quantitative ecology.

Kerry Murphy is a field biologist working on the Yellowstone Lion Ecology project. He received his M.S. from University of Montana and is completing his Ph.D. at the University of Idaho. His special interests include the population dynamics and predator-prey relationships among wild felids.

Yellowstone Streams Through the Eyes of a Trout: 812

August 13-15
 \$105 (Member's fee \$95)

Credit available (U or G, 1 semester hour, ID State U)

Designed for experienced anglers and others interested in aquatic systems in Yellowstone, this course will help you gain a better understanding of the behavior of stream-dwelling trout and the ways in which they are adapted to their environment. Discussions will focus on diet, habitat use, and sensory perception of trout in Yellowstone streams, and will include life histories of the species important in the park and factors affecting their populations. Field trips will provide the chance for students to don wet suits and directly observe fish behavior.

Jack Griffith, Ph.D., is professor of biological sciences at Idaho State University. His research specialty is the ecology of trout in streams such as Idaho's Henry's Fork and Silver Creek and in the park, the Yellowstone and the Firehole Rivers.

Road to Controversy: 813

August 13-15 Mammoth
 \$105 (Member's fee \$95)

This course will examine historical developments concerning the road from Cooke City to Gardiner, Montana. The only road in the park that is kept open in the winter, it was developed amidst controversy. Gold was discovered in 1870, two years before the park was established, and the road, complete with a toll bridge over the Yellowstone River, was laid out from Gardiner to Cooke City. The road not only served as a mining road, but it was a route used by poachers, illegal homesteaders and scoundrels of every stripe. The course of the old road will be traced by vehicle and on short day hikes. Specific historical locations and events will be discussed. Problems in the 1880's will be compared with those in the 1980's, including the mining history of Cooke City.

Jim Garry, see write-up under "Bears: Folklore & Biology."

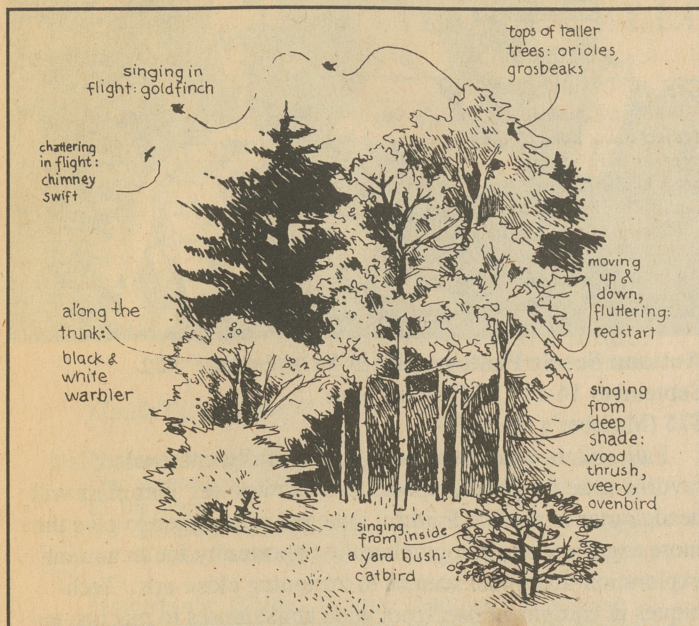
Deepened Perceptions:

The Art of Keeping a Field Journal: 814

August 13-16
 \$155 (Member's fee \$145)

This course is for the student of nature who wants to deepen his or her outdoor experiences by keeping a journal. During this three day workshop we will explore the sublimity of Yellowstone's rich ecosystems, drawing and writing in the field. We will work both on quick recording and on more extended, reflective studies. By observing the works of some of the great

naturalists and artists we will learn about their techniques and intentions. The emphasis of this course will be less on amassing information and more on finding methods of discovery.



Hannah Hinchman has kept an illustrated journal for 20 years. She has a BFA from Portland School of Art, Maine, has studied writing and literature at Earlham College and received naturalist training through the National Audubon Society. Her work has appeared in Northern Lights and Sierra magazine. Currently, she is revising a book on journal keeping for Peregrine Smith Press.

Horsepacking: Washburn Expedition Trail: 815
August 14-18 (see description on p.13)

Llama Trekking Yellowstone: 816
August 15-17 Bechler Meadows Area
\$225 (Member's fee \$215) Limit: 8

This three day outing will explore the waterfalls, thermal features, and meadows of the Bechler River area in southwestern Yellowstone.

(See write-up on page 14 under "Backcountry Llama Trekking" July 23-27 for more information.)

Wilderness Photography: 817
August 15-19 Absaroka Beartooth Wilderness
\$255 (Member's fee \$245)

This course will cover all of the subject matter in "Wildlife Photography" (June 13-16) but will take place in a wilderness setting. The group will spend most of its time in remote locations shooting infrequently viewed scenes. Outings will involve moderate hiking with light packs through untracked wilderness. Group equipment, food, and other heavy items will be moved by camp outfitters.

Camp gear will be taken by vehicles to a base camp on the Shoshone National Forest adjacent to the wilderness. Participants will accompany the instructor on daily hikes and an overnight trip from base camp into the Absaroka Beartooth Wilderness. Hikes are in mountain country at 6500-7500 feet elevation.

Each person must provide sleeping bag, pad, and pack. *Fee includes group equipment and food.*

Tom McBride, see write-up under "Wildlife Photography".

Experiencing the Spirit in Nature: 818

August 16-18

\$105 (Member's fee \$95)

After the biologist, geologist, physicist, and ecologist have probed as deeply as they can into nature, we still have unanswered questions; wanting to know more about the mystery that remains. Is a rock, a geyser, a glacier, and elk only what we see and measure, or is it possible to go beyond rational science and continue to learn from the mystery we intuit at the heart of all existence? It may be necessary if we are to be instrumental in healing the environment. Our goal is to become deeply aware of all that surrounds us by taking time to see, question, and reflect. This will enhance our personal connection with nature and, hopefully, lead to a better articulation of our values as planetary citizens. We will listen to what the rock, the tree, the stream, the sky, the mountain, the elk and the buffalo have to say to us, using techniques developed by the instructor through 40 years of experience in the Greater Yellowstone area. Our classroom is the outdoors with day hikes of moderate intensity to areas that have a special "sense of place," with frequent pauses for questioning and listening.

John Kirsch has been a rancher, big game biologist and priest in Montana during the past 40 years. He has a M.S. in Wildlife Management and trained for the priesthood at John XXIII Seminary in Boston. He also taught a course on "Eco-Theo" (ecology and theology) at Carroll College in Helena, Montana.

Flyfishing: More Experienced: 819

August 17-19 (see description on p.18)



Contemporary Resource Issues in Yellowstone: 820
August 18

\$20 (Member's fee \$15)

Perhaps no national park generates a level of public concern greater than Yellowstone. Resource issues garner local, regional and national attention, and sometimes the rhetoric is shrill. Though this has been the case since the park's founding, there are more varied and volatile issues now than at any time in its history. John Varley will act as moderator for a number of experts who will give presentations on such issues as the "greater Yellowstone ecosystem concept," encroachment of civilization on park boundaries, the plight of threatened and endangered species, wildlife management policies, and the Fishing Bridge controversy. Emphasis will dwell on clear, concise presentations followed by dialogue with the audience.

John Varley is Chief of Research for Yellowstone National Park and coauthor of Freshwater Wilderness: Yellowstone Fishes and Their World. He will coordinate presentations by authorities on a variety of resource issues.

Women & Yellowstone: A Historical Perspective: 821

August 25-26 Mammoth

\$75 (Member's fee \$65)

This course examines Yellowstone as seen by women in the late 19th and early 20th centuries. Using diaries, letters, photographs and other historical resources, the group will discover the variety of experiences encountered by women residents and visitors to the park during its early years. Day hikes will include exploring old tourist sites, cemeteries, and natural features which encourage an understanding of how women interacted with Yellowstone. Day hikes of 2-4 miles can be expected. Information about lodging and camping in the Mammoth area is available on request.

Karen Krieger has worked in museums (including the Buffalo Bill Historical Center in Cody, Wyoming) and historic sites, published articles on women in wilderness, led outdoor trips for women and conducted nature hikes for children and adults. Currently she is a graduate student at Utah State University, studying folklore and researching the history of women in the West.



Tracking: Earth as Manuscript: 822

August 25-26

\$75 (Member's fee \$65)

This course is designed to be an intensive two-day field study on observing and interpreting animal sign. Minimal time will be spent in formal lectures. Field trips will be along the Lamar River and surrounding areas. Emphasis will be placed on acquiring the skills necessary to learn the art of animal tracking.

Gerry Green is currently a field ecologist for the Interagency Grizzly Bear Study Team. He has a degree in wildlife biology from the University of Montana, and is studying for his Master's Degree at the University of Idaho. Gerry has studied tracking under Tom Brown, Jr. and will be teaching for his fifth summer at the Yellowstone Institute.

Wildlife Photography in the Fall: 901

September 7-9 Mammoth

\$75 (Member's fee \$65)

With wildlife in focus, this course will emphasize various techniques of wildlife photography. The course occurs during the peak of the elk rut, when their bugling and breeding behavior is on full display. Other wildlife, as well, will be easily observed. The course will also emphasize wildlife behavior, including human behavior in the presence of wildlife and the ethics of wildlife photography will be continually stressed. Fall weather can be extremely variable, but many photographic opportunities will occur. Class starts at noon on Friday.

Tom McBride, see write-up under "Wildlife Photography."

20



Autumn Scenic Photography in Yellowstone: 902

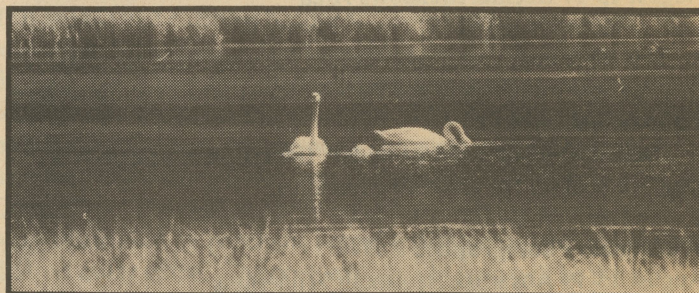
September 14-16 Old Faithful Area

\$75 (Member's fee \$65)

Fall, rich in wildlife and color, peacefully uncrowded, is a favorite time for photographers in Yellowstone. This class will headquarter in the Old Faithful area and is designed to give the more experienced photographer the opportunity for an autumn exploration—from vast scenics to intriguing close-ups. Techniques in equipment use, from wide angle lenses to macros, to fill flash, will be covered. Special emphasis will be placed on the photo essay—combining pictures to illustrate a unified theme. Discussions on potential uses and marketing of photography will also be included. Class will begin with a Friday evening lecture and slide presentation followed by field trips on Saturday and Sunday.

(Note: Lodging is available at Old Faithful; reservations should be secured early. Contact the Institute registrar for assistance.)

Pete Houdeshel, see write-up under "Learning Outdoor Photography."



Swan Identification and Ecology: 903

October 27-28 West Yellowstone, Montana

\$75 (Member's fee \$65)

Limit 12

Late October is a unique time of year, in that large numbers of swans concentrate in the Greater Yellowstone Area. Two species of wild swans can be found in the area at this time—the trumpeter swan and the tundra swan. The course will examine a wide variety of subjects, such as identification, habitat requirements, life history/life strategy, populations, migration, environmental threats, and conservation. Field trips are an important component of the course. Areas visited will include Yellowstone Park, Red Rock Lakes National Wildlife Refuge, Harriman State Park and Hebgen Lake. The course will headquarter in West Yellowstone and begins at 7:00 pm on Friday, October 26. Enrollees will be sent a list of nearby motels and campgrounds, as well as other pertinent information.

Terry McEneaney, see write-up under "Waterbirds of Yellowstone."

BOOKS, MAPS AND PAMPHLETS

ABOUT YELLOWSTONE NATIONAL PARK

Your trip to Yellowstone can be more rewarding if you do some basic preparation. The following materials provide either general information or may be directed specifically at an Institute class topic. If you'd like help deciding on a class or a book, our phone number is (307) 344-7381, ext. 2384 for class information, ext. 2349 for mail orders. Our office is generally open Monday through Friday from 8:00 am until 4:30 pm MST.

Remember, too, that the proceeds from your Yellowstone Association purchase will be used to support the Yellowstone Institute and to fund other scientific, historic and educational programs in Yellowstone in the future.

Guide/Picture Books

National Parkways, Yandell, large color pages with maps. Our best-selling photographic and comprehensive guide to the Park.

- Yellowstone, 80 pages.....\$5.50
- Grand Teton, 68 pages.....\$5.50

Hamilton's Guide, Lystrup, 160-page guidebook to Yellowstone with information on facilities and services. Color photos and maps.....\$3.95

Hiking and Camping

Yellowstone Trails: A Hiking Guide, Marschall, 120-page backcountry guide covering over 2 million acres and over 1000 miles of trails. (Available April 1990).....\$4.95

Day Hiking, Carter, complete Park trail descriptions, including history, geology, plant and wildlife facts. 4x6 in., 76 pages.....\$3.50

Yellowstone Trail Map, outdoor, waterproof, illustrated topo map. Completely updated 1986 (1:168,500).....\$5.95

Birds

Birds of Yellowstone and Grand Teton, Follett, descriptions and habits of 64 of the region's most common species, color photos, 73 pages.....\$6.95

Birds of Yellowstone, McEneaney, 171 pages. A practical habitat guide to the birds of Yellowstone National Park – and where to find them.....\$8.95

Peterson Field Guide to Hawks, Clark and Wheeler, 198 pages. A guide to all 39 species of North American hawks and other diurnal raptors, including eagles, falcons, and vultures.....\$13.95

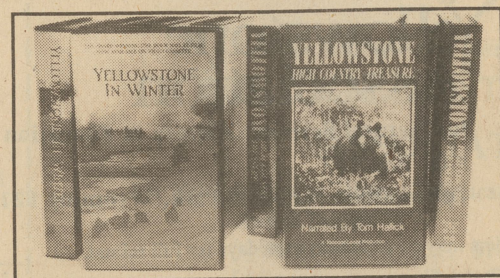
Birds of North America, A Guide to Field Identification, Robins, Bruun, Zim, illustrated by Singer. Golden Press. Each bird is captured in full color with descriptive text on facing page, 360 pages.....\$9.95

Geology

Geologic Story of Yellowstone National Park, Keefer, 92 pages, describes in layman's terms the events that shaped present-day land forms and thermal features.....\$3.95

Roadside Geology of the Yellowstone Country, Fritz. Covers geologic formations along all roads in Yellowstone and all major roads leading to the North, East, and West entrances to the Park.....\$9.95

Videos



Yellowstone: High Country Treasure, Landis and Johnson, VHS, 78 min. An excellent introduction to the Park ranging from rare wildlife footage to mesmerizing sequences on mudpots.....\$29.95

Yellowstone in Winter, Bayer, 60 min. VHS or European PAL. A fascinating film about life in Yellowstone during the frigid months.....\$29.95

Elk of the Northern Herd, Landis, VHS, 27 min. In-depth look into Yellowstone's northern herd throughout the changing seasons.....\$24.95

1988 Yellowstone Fires, Video Visions, VHS, 60 min. Experience Yellowstone Park's summer of 1988 when wind-driven flames raged across the Park, and witness man's struggle against this incredible force of nature.....\$24.95

Wildlife

Wildlife of Yellowstone and Grand Teton, Scott. 64 pages, includes mammals, birds, fish, reptiles and amphibians. With complete up-to-date checklist.....\$4.95

Large Mammals, Craighead, handy 30-page booklet on how to identify mammals and where to see them in Yellowstone, color photos.....\$1.75

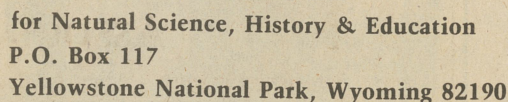
The Wolves of Yellowstone, Weaver. A 37-page research report providing information on the population history, ecology, and current status of the wolves in Yellowstone National Park and vicinity.....\$0.95

Bear Attacks, Herrero, 287 pages. This study of bear reactions to human intrusion aims to make bear country safer for both bears and people.....\$9.95

— **Plants of Yellowstone and Grand Teton**, Shaw, 160 pages of color photos and descriptions of park vegetation from trees to flowering plants.....\$6.95

— **Plants of the Alpine Tundra**, Marinos and Marinos, 64 pages. Beautifully illustrated alpine plant guide. Color photos and pen and ink drawings with descriptive text.....\$6.95

— **Wildflowers of Yellowstone and Grand Teton**, Shaw, 56 pages with color photos and descriptive text.....\$4.95



For Phone Orders Call: 307-344-7381 Ext. 2349

A black and white illustration of a woman's face with a wolf's head superimposed on top. The woman has long, dark hair and is looking directly forward. The wolf's head is positioned above her forehead, with its eyes and snout visible. The entire image is framed by a thick black border.

Poster.....	\$15.00
Signed, limited edition print.....	\$90.00
Postage and handling.....	\$5.00

NEEDS LIST

With over 80 classes and 700 plus students, the Institute has a diversity of needs. Each year many people have generously supported the Institute by donating items on our needs list, but we continue to have other needs as equipment wears out and new classes are established. Below is a list of our needs for 1990. Gifts are tax deductible and anyone who has a surplus of something on our list or knows of a possible source is invited to contact the Institute Director.

*ball jar glasses for kitchen
30 cup electric coffee pot
microphone/speaker system for vans
small portable copy machine
25" or larger video monitor
rustic chairs for kitchen or cabins
duffle bags
dissecting microscope (2)*



Please
accept this
invitation
to join.

Benefits of Membership

When you become a member of the Yellowstone Association you will have a role in a non-profit, educational project which began in 1933. The Association was founded to serve Yellowstone National Park and its visitors through support of educational, scientific, and historical programs.

To acknowledge your interest and support as a member, you will be entitled to the following benefits:

- * A family membership (covering donor, spouse, and children through age 20)
- * A 15% discount on items sold by the Yellowstone Association (in Visitor Centers or by mail)
- * Discounts on Yellowstone Institute field courses
- * Informative newsletters
- * Discounts on Yellowstone Institute products
- * Tuition credit for late course cancellations
- * Institute course information sent by **First Class Mail**
- * Invitations to special members' activities
- * Unusual volunteer opportunities
- * Association with other individuals with similar interests
- * Opportunity to support scientific, educational, and historical programs in Yellowstone Park
- * Credit for a tax-deductible gift (to the extent allowable by law)
- * Discounts at many association bookstores in visitor centers at other national parks

You may be assured that your membership gift will be gratefully received, immediately acknowledged, and efficiently used.

Please enroll me as a member of THE YELLOWSTONE ASSOCIATION

For Natural Science, History & Education, Inc.

Annual Dues:

- ☐ Benefactor \$1000
- ☐ Sponsor \$500
- ☐ Patron \$250
- ☐ Sustaining \$100
- ☐ Contributing \$50
- ☐ Associate \$25

- ☐ Renewal
- ☐ Joining for the first time

Give name as you prefer for Association records:

Name _____

Address _____

City _____

State _____ Zip _____

Identify other family members for whom membership cards are desired. (Memberships include donor, spouse, and children through age 20.)

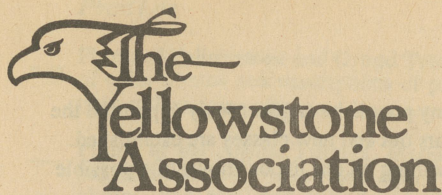
Make check to "Yellowstone Association" or
Charge to: ☐ Visa ☐ MasterCard

Number _____

Expiration Date _____

Signature _____

DETACH AND MAIL TO:
Yellowstone Association
P.O. Box 117
Yellowstone National Park, WY 82190



P.O. Box 117
Yellowstone National Park, Wyoming 82190

Non-Profit Organization
U.S. POSTAGE PAID
Permit No. 104
Livingston, MT 59047

ADDRESS CORRECTION REQUESTED

Please help by sharing your
Institute catalog with a friend

Institute Office 307-344-7381 ext.2384

Duplicate this form for multiple registrations if necessary

REGISTRATION FORM

Name(s) _____ ☐ Male ☐ Female
Please list names and ages of children for family classes
Address _____ ☐ Check if different from address on Institute mailing list.
City _____ State _____ Zip _____ Wk phone() _____ Hm phone() _____
Where can you be reached one month prior to course? Address _____ Phone() _____
How did you find out about the Yellowstone Institute? _____
☐ Check here if you are a current member of The Yellowstone Association or are joining now. (Memberships begin at \$25)

Course Title and Number	Dates	Tuition
_____	_____	_____
_____	_____	_____
_____	_____	_____

Lodging

☐ I want to stay in the Institute cabins at Lamar the following nights at \$7 per person per night. Dates _____
☐ My class does not meet at the Lamar facility. See my attached note regarding need for lodging or camping reservations, dates, etc.
☐ I will make my own lodging or camping arrangements.

Total Tuition Fee(s) _____

Cabin Fee at \$7 per night _____

Membership or donation (optional) _____

☐ joining now

☐ renewal

Total Enclosed _____

Charge to ☐ Visa ☐ MasterCard

Number _____

Expiration Date _____

Signature of Cardholder _____

Detach and mail to: Yellowstone Institute
Box 117
Yellowstone National Park, WY
82190

Release and Assumption of Risk

I am aware that during the courses or activities that I am participating in under the arrangements of the YELLOWSTONE ASSOCIATION and its agents or associates, certain risks and dangers may occur, including but not limited to the hazards of traveling in rough terrain, water, and thermal feature areas; accident or illness in areas remote from medical facilities; the forces of nature; and travel by automobile, bus, air or other conveyance. In consideration of, and as part payment for the right to participate in such courses or other activities, I have and do hereby assume the risks and all legal responsibility for injury to myself or loss of my property resulting from participation in these courses or other activities, and do hereby hold the YELLOWSTONE ASSOCIATION harmless from any and all liability, actions, causes of action, debts, claims and demands which I now have or which may arise in connection with my participation in these courses or other activities. The terms hereof shall serve as release and assumption of risk for my heirs, personal representatives, executors, administrators, and for all members of my family. I affirm that my general health is good and that I am not under a doctor's care for any condition which will endanger my health or the health of other participants. In case of injury and/or illness, I will bear the cost of any evacuation procedures such as ambulance, helicopter, rescue team and professional medical care. I understand that I must provide my own health and accident insurance. My participation in the Yellowstone Institute course(s) and attendant activities, including photographs for future publicity in which I may appear, is entirely voluntary.

Date _____ Signature(s) _____
(Signatures for all participants required)

If under 21 years of age, parent or guardian must sign: _____

If under 21 years, give age: _____ years