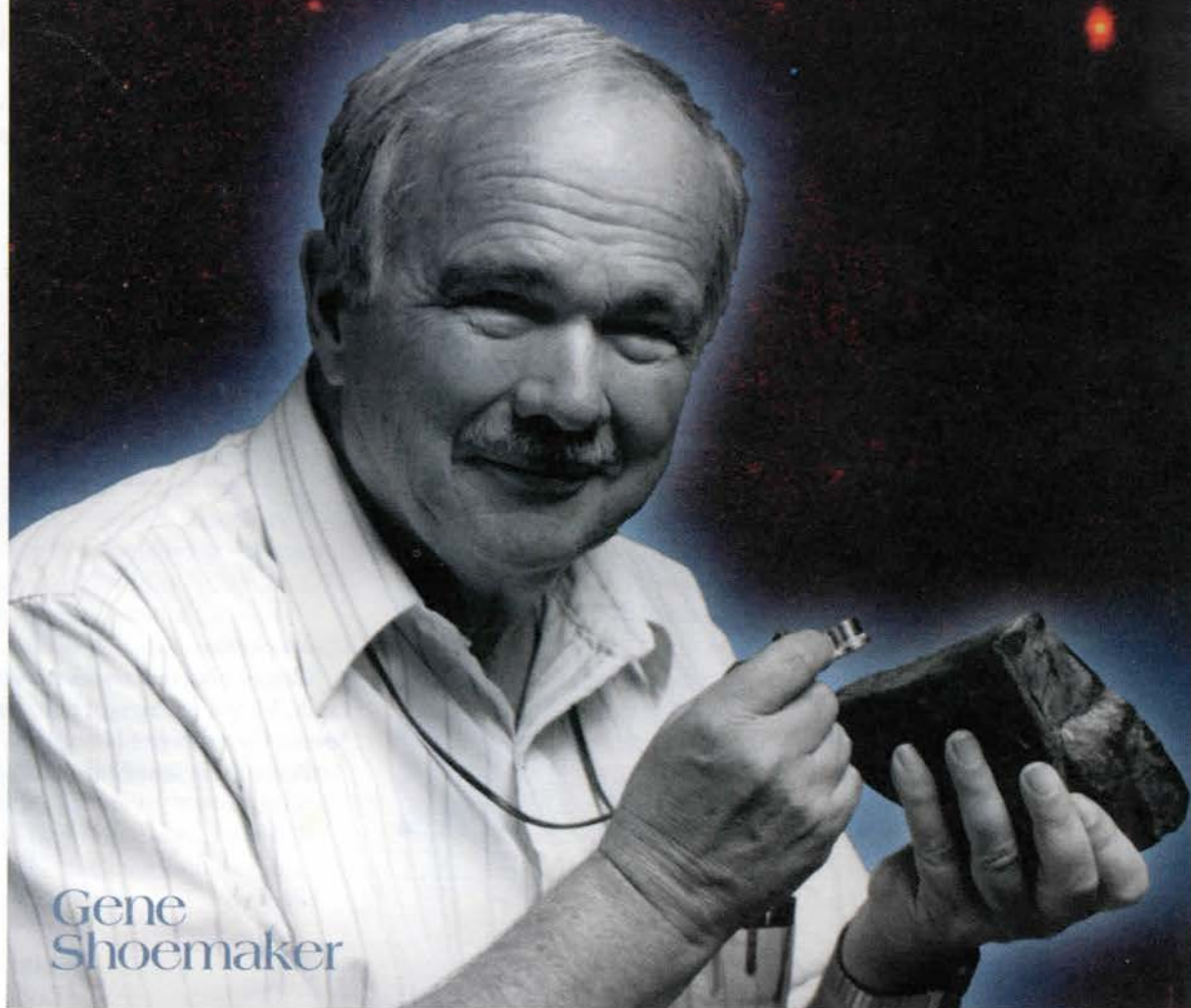




the journal of  
Grand Canyon River Guides, Inc  
volume 13 number 1  
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Thanks!

# boatman's quarterly review



Gene  
Shoemaker



## *boatman's quarterly review*

...is published more or less quarterly  
by and for GRAND CANYON RIVER GUIDES.

GRAND CANYON RIVER GUIDES  
is a nonprofit organization dedicated to

*Protecting Grand Canyon  
Setting the highest standards for the river profession  
Celebrating the unique spirit of the river community  
Providing the best possible river experience*

General Meetings are held each Spring and Fall.  
Our Board of Directors Meetings are held the first  
Monday of each month. All innocent bystanders  
are urged to attend. Call for details.

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Our editorial policy, such as it is: provide an  
open forum. We need articles, poetry, stories, draw-  
ings, photos, opinions, suggestions, gripes, comics,  
etc. Opinions expressed are not necessarily those of  
Grand Canyon River Guides, Inc.

Written submissions should be less than 1500  
words and, if possible, be sent on a computer disk,  
PC or MAC format; Microsoft Word files are best but  
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return envelope if you want your disk or submission  
returned.

Deadlines for submissions are the 1st of January,  
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Our office location: 515 West Birch, Flagstaff, AZ  
Office Hours: 10:30-4:30 Monday through Friday

Phone	520/773-1075
Fax	520/773-8523
E-mail	gcrg@infomagic.com
Website	www.gcrg.org

## Grand Canyon River Guides Mission Statement

GRAND CANYON RIVER GUIDES is a non-profit  
organization of volunteers; an association of  
river guides and fellow river travelers. Collec-  
tively we spend more time in the Grand Canyon than  
any other agency or group of people. We act as care-  
takers of the Grand Canyon and the Colorado River,  
helping preserve, protect and defend them and the  
magic they bestow on all of us. Through annual guide  
training seminars and our journal, the *boatman's quar-  
terly review*, we educate, entertain, preserve oral history  
of river running, foster dialogue, and negotiate with  
outfitters and the National Park Service to manage  
Canyon resources. We will work together with all who  
share vested interest in Grand Canyon and the  
Colorado River to ensure the following:

- Protect the Grand Canyon
- Set the highest standards for the river profession
- Celebrate the unique spirit of the river  
community, and
- Provide the best possible river experience



### Cover photos:

Comet Shoemaker-Levy on its way to the big  
crash, March 27, 1993. Photo by Jane Lau & David  
Jewitt, University of Hawaii.

Portrait of Gene Shoemaker by Dugald Bremner.



## Dear Eddy

SINCE 1975, I have had the incredible good fortune to experience the Colorado River through the Grand Canyon seventeen times (all private), or just short of *one full year* of user-days. Three of those trips have been in the “off” or non-motorized season. Prior to my off-season trip experience I was completely opposed to any and all motor use in the Grand Canyon. I hated the noise, the smell, the crowding and that sinking, deflated feeling as I watched 30 to 50 people motor by on their way to the campsite that I had been hoping to get. But my experiences on the off-season trips have, at least partially, changed my mind about motors.

During the motorized season, the hoards come into view upstream, then pass you by and within minutes, they are gone from view downstream, leaving you once again with the quiet and solitude of the River.

During the non-motorized season, it is easily possible to be within sight and hearing of the same group *for days!* During one late October trip we encountered the same OARS commercial trip for five days in a row, sharing hikes, scouts and (almost) campsites. At that time of year, there was probably no one within 20 miles of us in either direction, but it felt like it was incredibly crowded. We finally took an unscheduled layover day to let them get ahead of us, and let us get back our Canyon solitude that is such a major part of the experience.

If, in a non-motorized Grand Canyon, the commercial and private launch numbers stay at or anywhere near current levels, the feeling of crowding in the Canyon would *seemingly* be greatly increased with the elimination of motors.

Added to this argument is the advent of the four-stroke outboard motor. These things are so quiet that, if it weren't for the apparent speed, you often can't even tell that it is a motorized trip until they are within 50 feet of you.

So maybe the politics, the lust for the dollar and the public's desire for recreation that fits the family vacation schedule will forever prevent true wilderness designation from reaching the river corridor. But the use of *quiet* motors on commercial trips in the Canyon can actually increase the wilderness experience from at least one point of view.

Fairness of allocation is the biggest issue. While I have been lucky enough to have had more than my share of the Canyon experience, I will *never* get the chance to run my own trip with my own choice of companions. But if I had the money, I could get together 20 or 30 friends and run my own (commercial) trip with less than a year's wait. If I had the money. Now *that's* not fair.

Steve Larkin

## Something to Think About

IT IS VERY IMPORTANT for all of us to realize as guides and/or private boaters that everyone of us shares a very deep burning love for the Colorado River here in the Grand Canyon. We all have a right to this land. We all seek those private moments when and wherever we can find them. We all share this river, this canyon. Yet we must face this one fact: the Grand Canyon is a National Park. It is meant to be open and it has to be open to everyone, private and commercial. Yes, the quiet, silent, splendid beauty of the canyon is one of its most powerful and majestic attributes. I can understand why we all search for those almost surreal, splendid seconds of solitude with such passion.

Certainly it is unfortunate to read comments from boaters who have had the good fortune to have been on more than a half dozen private trips within the past 20 years, who write how unfair the current allocation system is. They feel that they cannot run a trip without seeing another trip in the Canyon and

having to negotiate for campsites (unless they go through a commercial company and pay the “big bucks” for the trip). Commercial guides deal with these issues on a weekly basis. Most of the time they are with people they never met before or will ever have the good fortune to see again after the trip is over. Why? Not for the money. But rather because they love the Canyon deeply. We all have to pay a price. None of us have exclusive right to the Canyon. Is it really so unfair to have to share this paradise?

Treasure the moments of quiet solitude when you have them. Embrace others when you see them. Realize that they are, after all, looking for same thing you are. The quiet unspoiled beauty of nature. Communication is the key to understanding one another. Whether you realize it or not most people you meet in the Canyon are kind, giving souls. They will give back to you what you give to them.

Bob Grusy



## “Tolio” Revisited

**T**HANKS TO ALL who returned surveys, sent photos, and talked to us; we have some answers and advice on the “Tolio” problem. Obviously, there are many factors that contribute to the condition, so we expect to learn more with time.

Biopsies have shown the skin lesions to be typical of chilblains, also termed pernio or immersion foot. Cold and wetness cause this. It is not a primary bacterial, fungal, or viral disease, although there can be secondary bacterial infections. The condition is not contagious person to person. The textbooks describe chilblains as itchy, burning, painful blisters of violaceous color taking up to three weeks to clear. Some people are obviously more susceptible than others and repeat cases were common. We feel that the cold water temperatures and relatively long time frame of Grand Canyon river trips make the condition more common than on other rivers. The roles that sun, sand, minor dings, prolonged sitting and water quality factors play are certainly of interest.

What can one do to avoid or minimize this problem? First and foremost, take good care of your feet! Try to avoid sunburn especially on the first trip each season. Use a potent waterproof sunscreen frequently *before* getting red or sore. One could wear kayak boots or river socks or the like. Wiggle your toes and move your feet a lot



so they are not just stationary in the water on the floor of your boat. Keep your feet clean and the skin well hydrated by using Super Salve, Bag Balm, Lubri-derm, Vaseline Intensive Care Lotion or some similar goop in camp daily. Do *not* soak your feet in the river. It may numb the pain, but it makes the condition worse. Anti-inflammatory agents may help the pain. Steroids may help the symptoms, but of course, have numerous problem side effects when taken orally. Antibiotics help only if there's a secondary bacterial infection.

We received 44 completed questionnaires and these were very informative. We particularly want to thank the folks who had biopsies. Big thank you's go to Dr. Carl Bigler and Brad Baack of Northern Arizona Dermatology who looked at photos and a biopsy and spent time helping us understand the condition better.

Marlene Gaither of the Coconino County Health Department was also helpful, as was Dr. Dennis Nousaine of Jackson, California. Obviously, there are still unanswered questions about the relative roles of cold, wetness, sunburn, irritants, age, past history of cold injuries, medication use, etc. pertaining to this condition. We hope to gather more data this coming year.

Please continue to report cases on the new form shown and, if possible, send photos and reports from doctors. We hope to write or call reported cases to ask more detailed questions about possible predisposing factors. Any of you who've had the problem repeatedly are encouraged to contact one of us before your first trip this season as we'd like to get your cooperation with some experiments involving different footgear, skin protections and medications. Thanks in advance for your cooperation.

Walt Taylor, MD  
1355 N. Beaver; Ste 120  
Flagstaff, AZ 86001  
Phone (520) 779-0361  
Fax (520) 779-7143

Tom Myers, MD  
301 S. 7th St.  
Williams, AZ 86046  
Phone (520) 635-4441  
Fax (520) 635-4403







## Wilderness and the End of Guiding?

THE GRAND CANYON RIVER GUIDES Association, as our bylaws proclaim, is dedicated to 1) "protecting Grand Canyon," 2) "providing the best possible river experience," and 3) "setting the highest standards for the river profession." These lofty goals would be best accomplished through wilderness designation.

For example:

Goal One: Wilderness designation of National Parks provides the highest degree of legal protection for lands, native biodiversity, and the human experience dependent on wild conditions.

Goal Two: Wilderness designation would preserve the type of experience unique to and dependent on Grand Canyon's natural environment. Grand Canyon, as we all know, is the most beautiful place on earth. Here the Colorado River provides the longest stretch of wilderness whitewater in at least the lower 48 states. Protecting the Canyon's wilderness character assures the river experience we all cherish.

Goal Three: Protecting the Grand Canyon and providing opportunities to experience conditions and qualities unique to this wonderful place define guiding's "highest" professional standard. How else would you define it?

So, why don't "we," the Grand Canyon River Guides, support wilderness in Grand Canyon? Well, wilderness means the end of motors on the river (you can't guide without a motor...?). Wilderness, they tell me, sounds the death knell of the professional guide. Wilderness means the end of the guiding world as we know it...right?

Actually, wilderness designation, good for the canyon, would be good for guiding. It would mean more jobs for boatmen and a longer season. For example, the current user day allocation is derived from wilderness alternatives presented in the 1980 Colorado River Management Plan (CRMP) and Environmental Statement. That plan called for a six-month season (mid-April to mid-October) with two commercial launches a day. For argument's sake only, assume a maximum group size of 20 passengers on the river for 14 days and you end up with approximately the same current level of commercial use. One important difference is that rather than one or two motor boats (and boatmen) per trip; there would be five rowing boats per trip and ten commercial boats (and boatmen) leaving Lees Ferry each day. That's about 140 boats (boatmen) on the river on any given day for a six-month season. Twelve trips per year would insure a steady income and assure complete burnout.

Of course, that happy scenario depends on launching and filling every trip. Although the goal of any allocation is to establish limits, not set use targets, guides have a genuine concern regarding their livelihood (passengers are necessary to conduct commercial trips). Currently, most outfitters depend on short motor trips to fill most of their allocation and they cringe at the thought of having to sell 14-day trips. The fact of the matter is that the preponderance of current oar-powered use consists of shorter exchange or partial trips anyway. We can have short or long trips with or without motors.

Fortunately, conversion to oar-powered trips presents a few challenges, but no obstacles to a viable guiding community. First of all, commercial boating in Grand Canyon is safe regardless of type of craft. The most recent safety study confirms this and also demonstrates that, contrary to general assumptions, oar-powered craft enjoy a better safety record regarding serious injury than motor rigs.

Cost is another criticism of longer oar-powered trips. As mentioned above, much of the current oar-powered use consists of shorter (three to nine-day) trips. In any event, commercial trips are expensive, more so per day than many cruise line vacations. When cost is interjected into the argument, the concern really lies with commercial trips in general, not oar-powered trips in particular. According to recent studies, about half of current clients make over \$100,000 a year. Since most Americans don't make that kind of money, our concern should focus on providing guided trips to a larger public and still retain the existing high level of professionalism.

In the Fall 1998 edition of the *boatman's quarterly review*, I presented ways to "expand the spectrum" of commercial trips. In summary, the proposal suggested using a significant portion of the current commercial allocation to reach special populations currently disenfranchised by physical, social, or economic barriers. These populations include youth groups, educational groups (university students), the physically challenged and other folks with disabilities. The Park Service should establish, as part of the wilderness and river planning process, a workgroup or panel to identify additional "special populations." Once these populations are identified and concession contracts completed, the outfitter would work with special advisory panels of experts to develop and implement the program.

For example, the educational advisory panel could consist of representatives of regional or national



colleges and universities. This group would develop the selection criteria, curriculum and schedules for students participating in the program over the life of the concession contract. The proposed collective effort would assure equitable access by avoiding dominance of any single institution or organization.

Seeking grants and other funding support would become another essential role of the advisory panel. The concessioner would then run the trip at cost only (including staff, equipment, and supplies), that is at a price substantially less than the traditional outfitter charges. The Park Service would create similar concessioners and advisory panels for youth groups, physically challenged and other currently disenfranchised groups. Another frequently requested concession service, support trips for kayakers and other boaters who prefer the company of a qualified guide, could be offered. This would differ from the current traditional service in that a group (similar to a private group) could actually hire someone to lead the trip. Of course, the traditional outfitted trip would be offered, but it wouldn't consume the lion's share of the allocation. All these recommendations combined broaden the spectrum of commercial services, providing guides with a diversity of employment opportunities.

Its important to remember that private river runners also represent a broad diversity of socio-economic levels. Their plight (10- to 20-year waiting list) is well known and must be resolved. Reverting back to (and slightly modifying) the 1980 wilderness plan allows increasing private launches to two trips a day (four total including commercials) increasing their access by about 75%. Additional winter launches allowed under this wilderness alternative could further increase their allocation.

The scenario presented above is offered as food for thought. It is only one out of many possible wilderness alternatives that will emerge during the Grand Canyon wilderness and river planning process. I believe it demonstrates that wilderness protection benefits the Canyon, the visitors, and the guides. This particular proposal explores ways to expand current commercial emphasis to include a broader representation of Americans, provide relief for the privates, as well as assure long-term employment for river guides. I hope it dispels some wilderness myths and sparks a lively, productive debate.

*Kim Crumbo*

Southwest Forest Alliance  
P.O. Box 1033  
Grand Canyon, AZ 86023  
520-638-2304  
kcrumbo@swfa.org

## Tooting the Bottle

**A**S A RIVER GUIDE, I LOVE MY JOB. We are with our friends, passengers are on holidays, strangers want to meet one another, and we are all in the great outdoors. This feels good, but there can be personal challenges and difficult choices related to the excitement of being in the Canyon. It often leads to drinking.

Having spent time around people who have suffered from serious alcohol abuse, I now know the importance of monitoring my own intake. However, the process of not drinking on the river is difficult. For people who have serious issues with drinking and want to control the situation, the river environment becomes very challenging. I do not believe there are a bunch of drunks or serious alcoholics that I work with or see within the guiding community, but I want to encourage guides to help one another with drinking issues.

As I plan for the future of the Canyon (deciding on overflights, Canyon Forest Village, Wilderness, CRMP), I want to make plans to take better care of my body, and my relationships with family, friends, co-workers, and bosses. How I treat them now will affect my relationship with them in the future. Knowing how easy it is to influence one another, as I drink with my buddy I want to know how the drinking affects them. If drinking is something that my buddy wants to control, then I want to support him. So the idea is to encourage planning for the future, relish your relationships, and plan to enjoy this planet with your body, friends, and family for a long time. And remember to listen to the echoes when you toot the bottle.

*Jon Hirsh*



## Goodbye Roger

IT CAME AS A SURPRISE to learn Roger Henderson was from the Chicago area. He was as much a part of this country as the coyote nights and getting stuck in the mud. “Whatever the truth is,” he said, “it seems to be in the land itself.”

Northern Arizona University drew him west, and by the late 1970s he had rowed his first baggage boat down the Colorado. The hook was set, and his river running spanned fifteen years and several river companies. He also worked as a cameraman, ran a seismic survey crew, and at times dreamed of wilder places and went looking for them. He might head off to Patagonia or north to Alaska, but he always returned to the Southwest.

And no matter where he traveled, the stories kept coming. Roger would sit behind the wheel of his pickup, a roostertail of dust following him down a backroad as he hauled a load of firewood for a ceremony, laughing as he told about a trip to France for the opening of a Navajo exhibit. He described hanging out at the Ritz, smoking Cuban cigars in the bar where Hemingway showed up with a Tommy gun and a thirst during the liberation of Paris. And then he would be on to the next story, and then another.

After leaving the river, he became an archeologist for the Navajo Nation. Medicine men called him “the ghostbuster,” since his job was to rebury the bones whenever heavy rains or a cat churned up an Anasazi burial. They taught him how to protect himself from the dead—to eat the bitter herbs before digging, to brush out his tracks as he walked backwards from a burial to confuse whatever might be following, to

leave a line of *tádidíín*—corn pollen—across the road, to smoke his tools with juniper, to take a purification sweat. He had the highest respect for Navajo culture and considered it a great honor when a chanter introduced him to another medicine man as someone who knew more about tradition than most Navajo.

Roger first learned he had non-Hodgkin’s lymphoma about 15 years ago. Successfully treated, the cancer remained in remission for many years. During that time, he walked away from three plane crashes. But he told friends the best luck he ever had was meeting his fiancé, Regina Wilson. Finally his luck wore thin, and last year the cancer returned. Roger died in Tucson on December 19, 1999. *Hágoónee shí*—buddy.

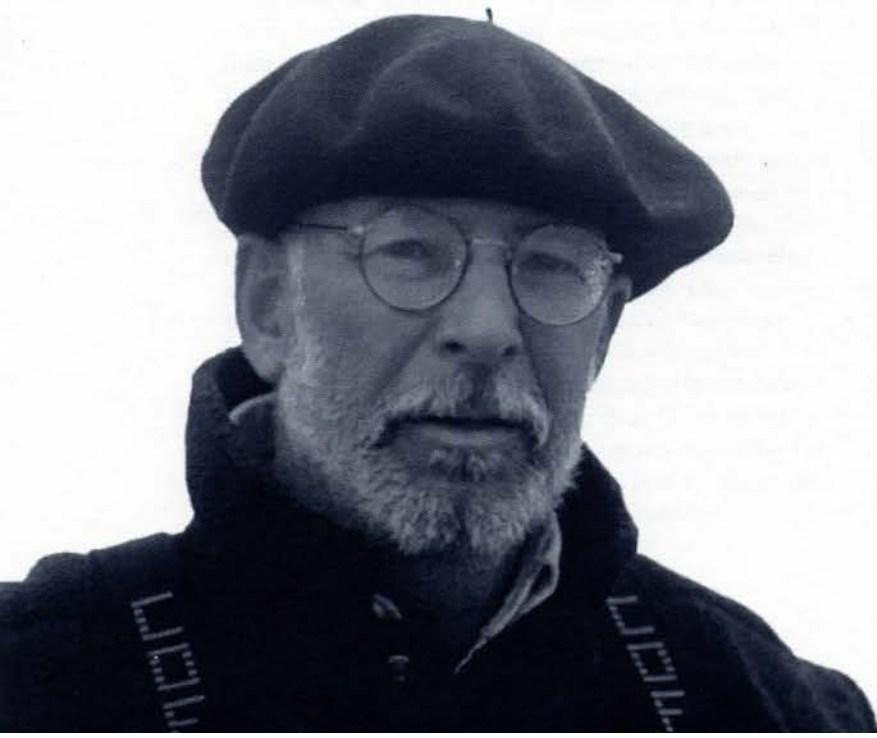
Scott Thybony

WHAT IS IT ABOUT SOME PEOPLE that when you meet them for the first time you have a sense you can trust them anytime, anywhere? That’s the way it was with Roger Henderson. He covered the ground he stood on and more than that—he watched your back.

When my father died, I was in the small shack where I lived packing some stuff in a duffel to go back to Virginia. I heard the tell-tale whine of a Willys jeep approach the cabin. There was a knock on the door, and Roger entered without saying hello. He just started writing in his open check book. Without looking up he asked, “Now, just how much was that airline ticket?”

Roger liked to talk. We would sit in his hogan or lean against a bar sipping Guinness, talking late into the night. Always the talk was of books, films, rivers, Alaska, Navajo tales, holy places, skinwalkers, adventures, mishaps, parallel realities, justice, values, good people we had known, plans for the future—and of course, women. He had a way of telling you stories that would kind of creep up on you and keep you awake at night. They would come to mind on long drives or while rowing the river.

“I’ll tell you what,” Roger said, “the Navajos don’t just believe in a parallel reality. They *know* it is out there. I watch pretty closely. I see things and hear things and never let on. It is no place to ask questions. And I can tell you this: it exists, it is there. I have fuckin’ seen it. I have seen what they didn’t want me



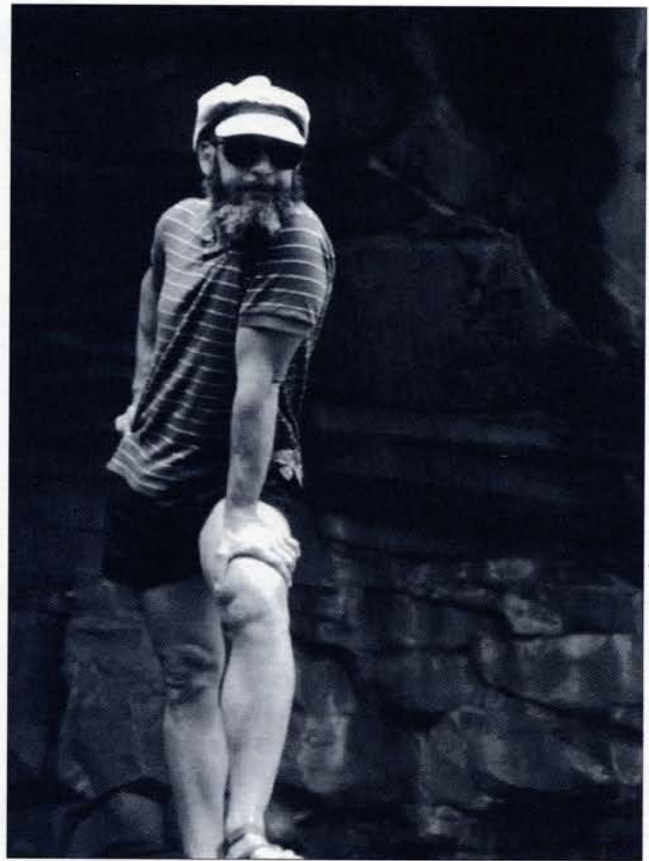


to see. Remember the sing in New Mexico before we went down in that plane? Well, I walked into the big hogan when I wasn't supposed to. I didn't tell you at the time, but the sand painting was floating about two feet off the floor. It was luminous and glowing from the inside out. I couldn't believe my eyes. They made me come inside and sprinkle some white sand to make clouds in the sand painting sky. Later I remembered they were the same damn white clouds I had seen flying in. Our own people can never understand this stuff. They sit watching television in big box-like homes and move through life like robots. How many people do you know, boatmen even, who will sit down and stay in one place and look at the world? Open your eyes—and I'm telling you, it is quite a ride. Medicine people know that. It is an open secret." Then he added dryly, "A safe secret around here."

One time an old Navajo woman told Roger that when you have a fire you are never alone. "I thought about that," he said. "She's right; there is something about a fire. You know how you can tell? Because when it goes down to nothing, something has actually left, gone, split! Think about it. The fire didn't really stop in place and die; it up and left. After she told me that, I have never seen a fire in the same way. You tell that to some people and you might as well be talking to a parking meter. A fire is company."

Jeffe Aronson and Roger were guides on a googaloo trip. A lot of people were emoting, singing, sobbing at the beauty, talking sweetly to insects, incoherent drumming—that sort of thing. "Finally," Jeffe wrote, "we arrived at Blacktail Canyon. Entered that magic place and sat at the end listening to the water dripping into that silence. There were about eight or ten of us, Roger and me included. After a while, Eagle Feather (not her real name) came along and, raising her arms high above her head, said, 'The Rock speaks to us!' Roger looked over at me and I at him...oh boy, here it comes. 'Listen to the Rocks!' she says. I can relate to that on a certain level. We look around and everybody but us has their hands cupped around their ears, ears against the walls listening, eyes closed in rapture. Roger looks over at me again, cups his hands over his ears. He puts his ear against the rock and listens. He then leans over and whispers in my ear, 'It's for you.'"

"How many lives can a man have?" Roger once wrote. "I'm on my third, and I think that I have four. What makes a life is the style, people you know, health and head space. I was on a corkscrew of a path from birth to cancer. That was one. Then cancer, which took my thirties and eight to ten years to deal with it physically and psychologically, and that was two. Now this one."



*"Roger Henderson was the quintessence of humanity, standing at one man's height upon the face of mother earth. Roger was a rock, one of those living rocks that's been standing firm for such a long time on the ridge of the Colorado River that no one can think that he will ever be removed."*

*—Christophe Magny*

Roger mailed a letter to me two years ago. It never reached me in western Mongolia and traveled about 26,000 miles before I finally opened it a month before he died. "My soul yearns for the simple life of a fisherman," it read. "Alaska still pulls me like nothing else does. The last of what is left that is wild, clean, open." He liked being where you were still part of the food chain. "It is a place of beauty without a drop of mercy. Our time is limited on this earth. We need to live in its magnificence. This requires that we make as much of it as we can. To live in a big, free way."

Roger didn't get sick and die of cancer. Cancer had to hunt him hard, track him down, and kill him. Roger never gave up.

*Dave Edwards*

*Photographs by Dave Edwards.*



## Glen Hyde's Pop

January 30, 1929

Dear Mrs. Haley,

...Papa is home, tho I haven't seen him. He got off the train at Hansen, and I have been snowed in at Kimberly for a week. We tried to drive to Hansen to meet him, but could not get through the snow. He walked out to the ranch and now he is snowed in...

Jeanne Hyde

**R**OLLIN C. HYDE SAT ALONE in his old house by the wood stove. He was 69 years old. He had no electricity, no plumbing, no phone. The snow shrieked across the barren bean fields and rattled the windows. There was little hope that his son, or his son's bride, was alive. He had just spent nearly two months and every cent he had in western Grand Canyon in a desperate search for Glen and Bessie. He had found their sweep scow snagged midstream with all gear aboard and in order, but not a trace of either honeymooner. They had simply vanished. He had mortgaged everything he had to keep the search going on the river and both rims, calling on every agency and expert he could enlist. Nothing.

Rollin Hyde had been beaten numerous times before. He made his first fortune in the tiny new settlement of Spokane, Washington, where he and his siblings had elected to make their stand. By 1892 Rollin Hyde had built one of the largest buildings in the emerging city, the Fernwell Building. It still stands. But he lost it all in the Panic of 1893, and was soon working as a janitor in the building he once owned. His first two sons, Fernwell and Lynn, died as infants. With his wife Mary he went west and homesteaded near Davenport, Washington. They had three more children, Edna, Glen and Jeanne. But Mary's health was poor, and they had to sell out and head south to a better climate in San Diego. To no avail. At the age of 44, Mary succumbed. The next day on the ship returning to Washington, Mary's sister Louise, who had been at her side, passed on as well.

Hyde and his family continued north, all the way to Prince Rupert, British Columbia, and started over. He began building in Prince Rupert—homes, a bank, other businesses. He prospered. But with the onset of World War I his finances again collapsed. They headed south now, to the broad windswept fields of southern Idaho where Hyde's brother-in-law owned 80 acres. Hyde arrived with three teenage children and 50 cents. He planted on credit, worked every waking minute, and within two years bought the ranch. By hard labor he was able to expand his holdings, and



Rollin C. Hyde at Diamond Creek, December 1928. Emery Kolb in background. Photograph courtesy of Norm Tessman.

young Glen homesteaded another nearby parcel. Edna married the operator of the local grain elevator, and in April of 1928, Glen brought home the love of his life, Bessie Haley, and married her. Life was once again good for Rollin Hyde.

And now this. He shoved another stick into the fire to drive off the howling Idaho chill. He was beaten again, busted again. But he was not through. He would go back. Somehow, somewhere, he would find them.

Brad Dimock



## Bessie Hyde III

I AM FINISHING RESEARCH on a definitive book on Glen and Bessie Hyde, due out this fall. The story on Rollin Hyde is a glimpse of one small part of the tale. Another part of the story involves rumors and legends: Bessie's return to the Canyon, Glen's survival, Glen's bones, and Bessie's second return.

Most river folks know the frequently published story of the woman who came on a 1971 river trip and, around the fire, confessed to being Bessie Hyde. She told of killing him with her pen knife, hiking out Diamond Creek, and starting a new life in Ohio.

I am now asking for help in tracing down the *other* Bessie Hyde's return. This story was circulating in the river community in the early 1980s. On a *different* river trip, a *different* woman claimed to be Bessie Hyde. This woman's story was similar, yet had several unique features. She also killed Glen, but used a butcher knife. She also hiked out, but went out the north side. And she also started a new life, but as a

waitress in Circleville, Utah. Or Kanab. Or Hurricane, depending on the version of the rumor.

The details of this rumor were distinct when I heard them a decade and a half ago. But, of course, I failed to follow up on it then. Now I can find no one else who remembers the story, or where it came from. So this is a plea to any of you with more surviving brain cells than I, to find any details of this third Bessie Hyde. Please call, write, fax or email me. (Or if you have yet another Glen and Bessie story, by all means, do let me know!)

Brad Dimock

1000 Grand Canyon Avenue  
Flagstaff, AZ 86001  
phone 520/spittle  
fax 520/779-9552  
email braddimock@aol.com

## Grand Canyon-Parashant National Monument

GRAND CANYON WILDLANDS COUNCIL is pleased to announce that we will once again receive a grant from the Grand Canyon Conservation Fund. Many thanks to outfitters and passengers for the much-needed support.

We are even more excited to relate that President Clinton has created the Grand Canyon-Parashant National Monument. This new million-acre monument, almost as large as Grand Canyon National Park, covers over half of the Shivwits Plateau (the southwestern and western portions), and the entire Grand Wash drainage in Arizona. To the east it includes the Mt. Trumbull/Mt. Logan area and Toroweap Valley. The headwaters of some of our favorite side canyons—Parashant, Andrus, Whitmore, Secret—will now be recognized for their ecological, historical, and scenic features.

As part of the Wildlands Council ecological assessment of the ecoregion surrounding the Grand Canyon, we prepared a detailed report on the Shivwits Plateau region. You can request a copy of "An Ecological Assessment of the Shivwits Plateau Region" from Grand Canyon Wildlands Council (we have a few left) or download it off the web at <http://home.earthlink.net/~gcwildland/>.

Here is a brief summary:

The Shivwits Plateau is a vast tableland and its

western edge forms a dramatic escarpment, one of the nation's most remarkable ecotones (ecological transition zones). Most of the Shivwits Plateau lies at elevations of 6,000–7,000 feet, with a capping veneer of basalt flows and volcanic peaks that rise above 8,000 feet. These lands encompass remarkably long cliff lines, the boundary between the Basin and Range and Colorado Plateau geologic provinces, extensive archeological features, pinyon-juniper and ponderosa pine forests, desert spring ecosystems, and desert tortoise, California condor, desert bighorn sheep, and pronghorn habitat.

We had great fun working as part of a coalition of groups, encouraging President Clinton to designate. We heartily thank The Wilderness Society, Sierra Club, Grand Canyon Trust, Southwest Forest Alliance, National Parks and Conservation Association, National Resources Defense Council, and the Grand Canyon Private Boaters Association and Grand Canyon River Guides. We especially thank all of you who responded to our emails and called the White House. It helped.

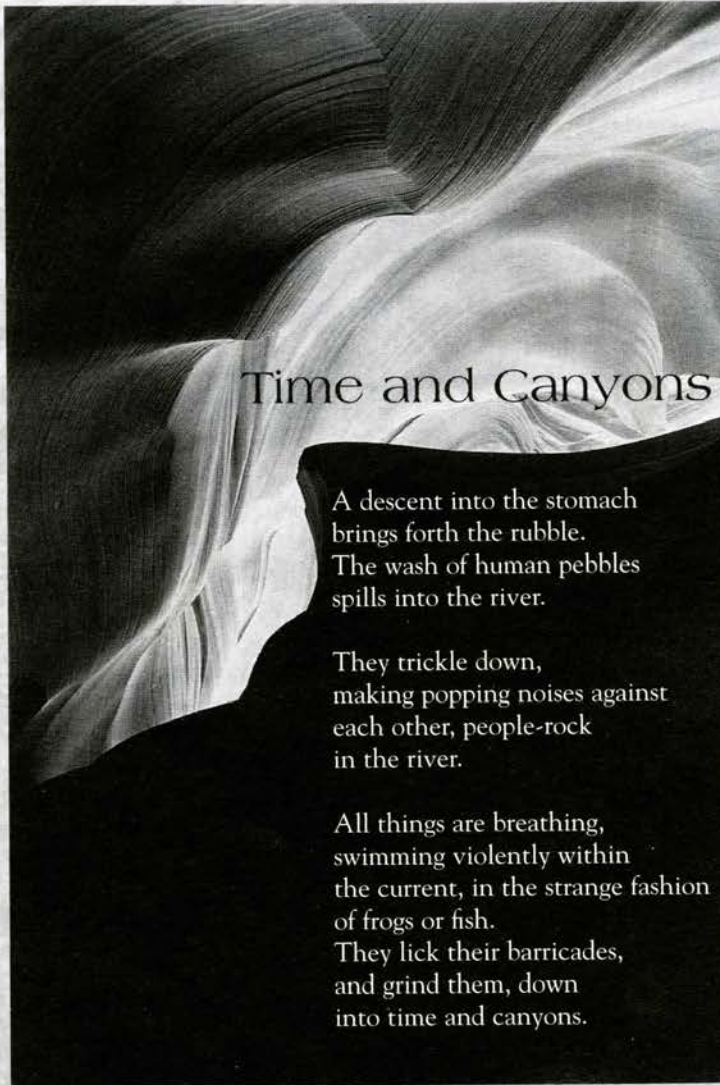
President Clinton sat before a small brown table at Tuweep on January 11, 2000 and signed the proclamation designating this and two other monuments, at the same time expanding a fourth, all in Arizona and California. Now this is the right way to kick off a millennium.

Kelly Burke



# The Grand Canyon Semester

**I**N THE LAST ISSUE OF THE BQR, we mentioned the Grand Canyon Semester, a program for 33 selected honors students from 33 different universities to participate in an immersion study of Grand Canyon and the Colorado Plateau. On the following two pages are poems by Ben Brzeski, a student on the Grand Canyon Semester and photos by Michael Collier, an instructor in the program.



## Time and Canyons

A descent into the stomach  
brings forth the rubble.  
The wash of human pebbles  
spills into the river.

They trickle down,  
making popping noises against  
each other, people-rock  
in the river.

All things are breathing,  
swimming violently within  
the current, in the strange fashion  
of frogs or fish.  
They lick their barricades,  
and grind them, down  
into time and canyons.

## Genesis

I play with little plates  
of rock. Tectonics.  
The red hardness is sandy  
in my hands. Grinding against,  
I play godhead, making  
continents run, spreading the center,  
and pushing plateaus to the sky.  
The rocks crumble, the land melts  
into crack and crevice, and the sun  
continues to set upon the land.

How much time can I sit here,  
shifting the slabs, and building?  
An eternal morning  
passes on and becomes itself  
softly in my hands.  
The dirty rock fingers,  
the dust colored eyes  
are still burning. Rock  
is burning.





## River

In this I am swimming too.  
A pebble brown in color, I am  
screaming as I sail by,  
charging as the river takes me.  
I am listening, searching  
for the shore I will set upon.

## Faces in the Muav

There are people in the Muav Limestone.  
You can see their eyes and noses  
in the rock, Cubist portraits  
stacked upon each other  
one mile after another.

At Olo Rapids, the sun breaks  
down between the myriad,  
the rays carried on a wave  
of North Rim smoke.

The motion of a boat makes no imprint,  
but the eyes can see.  
The Muav People know  
each eddy, and who has floundered  
within them.

Stone sees these things,  
records them. It has  
no time for joking.



## The Sun Has Set At Last Camp

I think it has, but  
the sky is still  
blue.

The feeling has come,  
though, which follows

every sun dusk.

Calm,  
waiting,

a dying of sorts.  
A sigh, at last,

telling us it is ok  
to let go.



# Colorado River Science Below the Dam

## Adaptive Management Program Update

**T**HE ADAPTIVE MANAGEMENT PROGRAM (AMP) for the operation of Glen Canyon Dam is an effort by Interior Secretary Babbitt to satisfy the mandate of the Grand Canyon Protection Act of 1992...“to operate the dam to preserve, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreational Area were created.” The Adaptive Management Work Group (AMWG) is a Federal Advisory Committee composed of 25 stakeholders from the river basin appointed by Secretary Babbitt, including government agencies, tribes, basin states, and public groups. This committee advises him on how best to manage the dam for the benefit of downstream resources. The Secretary chose GCRG to represent the recreational river-runner community on the committee. GCRG AMWG representative Andre Potochnik, reports on some river science issues below.

### I. Development of the Strategic Plan

Much of the work of the Adaptive Management Work Group (AMWG) in 1999 was on development of a cohesive Strategic Plan for the Adaptive Management Program. Once completed, it will consist of a “nested” set of four documents, each of which will follow from the previous document. In this way, the AMWG is developing an internally consistent document, based on collective consensus, which will give clear direction for the objectives of river science for years to come. These documents step from the general to the specific and include: Vision-Mission > Principles-Goals > Management Objectives > Information Needs > Glossary of terms.

#### *Vision-Mission Statement:*

The AMWG members ran a river trip through Grand Canyon in May of 1999 to learn first-hand from researchers about the condition of physical, biologic, cultural, and recreation resources below the dam. The second purpose was to write the first component of the Adaptive Management Strategic Plan, a Vision-Mission Statement. Both objectives were accomplished (see “El Condor Pasa” in BQR 12:3). The Vision-Mission statement for the Adaptive Management Program is printed below.

#### *Principles:*

These are a set of eight statements or assumptions that clarify the philosophical and institutional framework under which the Goals are constructed. Once completed, the Principles, Goals, Management Objectives and Information Needs will be printed in a later

edition of the BQR. Please, contact me if you would like to give us input or feedback on these documents.

#### *Goals:*

Goals are broad statements of long-term results to be achieved, which link the Mission to the more specific Management Objectives. I serve on the AMWG Strategic Planning committee to develop the Principles, Goals, and Management Objectives. The committee is nearing completion of the Principles/Goals document. I am advocating for language that enhances the quality of the recreational experience, protects cultural resources, and restores natural patterns and processes to the river environment.

#### *Management Objectives and Information Needs:*

Management Objectives translate the goals into operational terms and need to be specific, measurable, achievable, and time-specific. More than one of these might contribute to a single goal. Information Needs are research and monitoring statements that define the actual research or monitoring projects that achieve the Management Objectives. I believe that Information Needs should be primarily developed by the science staff of the Grand Canyon Monitoring and Research Center (GCMRC), without excessive micro-management by the Technical Work Group (TWG).

The Strategic Planning Committee has been very productive so far. At the Jan. 20-21 AMWG meeting in Phoenix, the committee will be requesting the AMWG's support to develop the first draft of the Management Objectives with subsequent review by the Technical Work Group. We are working to complete the Goals and the Management Objective documents for acceptance by the AMWG in their April 4-5 meeting. Please feel free to attend any of the AMWG or TWG meetings in Phoenix. All are open to the public with meeting dates published in the Federal Register and Bureau of Reclamation web site <http://uc.usbr.gov/amp/>.

### *Vision and Mission*

*Adopted by the Glen Canyon Dam Adaptive  
Management Work Group  
July 21, 1999*

*The Grand Canyon is a homeland for some, sacred to many, and a national treasure for all. In honor of past generations, and on behalf of those of the present and future, we envision an ecosystem where the resources and natural processes are in harmony under a stewardship worthy of the Grand Canyon.*

*We advise the Secretary of the Interior on how best to*



protect, mitigate adverse impacts to, and improve the integrity of the Colorado River ecosystem affected by Glen Canyon Dam, including natural biological diversity (emphasizing native biodiversity), traditional cultural properties, spiritual values, and cultural, physical, and recreational resources through the operation of Glen Canyon Dam and other means.

We do so in keeping with the federal trust responsibilities to Indian tribes, in compliance with applicable federal, state, and tribal laws, including the water delivery obligations of the Law of the River, and with due consideration to the economic value of power resources.

This will be accomplished through our long-term partnership utilizing the best available scientific and other information through an adaptive ecosystem management process.

## II. Public outreach

Interior Secretary Babbitt informed the AMWG that he would like to see it develop a better public outreach program. I sit on the AMWG Outreach committee whose purpose is to do just that. The Grand Canyon National Park, Grand Canyon Association, Bureau of Reclamation, and GCRG (through the BQR, annual meetings, and the Guides Training Seminar) are beginning to move forward on this topic. I would like to hear ideas from you on how to better communicate river science issues and results to the public in the coming year.

## III. Hydrology of the basin and management of the dam

The most recent report on predicted runoff from the upper basin into Lake Powell indicates that the Rocky Mountain snow pack is far below normal for this time of year. Since the beginning of the water year on Oct. 1, 1999, Reclamation has significantly drawn-down the reservoir because it was so full. Of course, it's still early winter, the weather could change significantly. But, if this drought trend continues, Reclamation may declare a minimum release year (8.23 million acre feet). This would likely trigger a "hammer clause" in the Glen Canyon Dam Record of Decision which stipulates that the Seasonally Adjusted Steady Flow alternative be enacted for restoration of endangered native fish. This means constant low water, possibly 8,000 cfs for much of the summer and fall season!

## IV. Beach habitat building flow (BHBF)

With low expected runoff, the hydrologic trigger criteria for initiating a BHBF will not likely be reached. Even if we get low flows, I still see the need to advocate for a spike flow for the following reasons:

- The river channel and eddies still hold much of the sand from the unusually big Paria River sediment influx of the past three monsoon seasons. Use it or lose it to Lake Mead.

- The canyon needs new beach sand due to the excessive erosion of beaches over the past several years from releases above 20,000 cfs.
- Big flash floods have wiped out much beach sand no longer replaceable by natural floods.
- Vegetation continues to encroach and eliminate camping areas.

Some have suggested the following spike flow regime (what do you think?):

- 1) 45,000 cfs for two days (put lots of sand up high).
- 2) 31,500 cfs (power plant capacity) for the next two days (rework the new high sand to a useful docking/kitchen level).
- 3) Less than 18,000 cfs constant (to conserve sand in the system and find out if endangered native fish do better as a result).

## V. Funding needs

GCRG is very grateful to the Grand Canyon Conservation Fund for partial funding of our participation in the Adaptive Management Program, the Guides Training Seminar, and the Adopt-a-Beach program. We believe this is money well spent. Commercial passengers volunteer \$1 per day of their trip to this fund under participating outfitters. These dollars are administered for river conservation purposes by an outfitter committee to individuals or groups involved in river conservation efforts.

We also appreciate funding from the Grand Canyon Monitoring and Research Center for partial support of our Adopt-a-Beach program.

Most importantly, it is you...the members of GCRG whose unqualified support enables GCRG to continue being actively involved in current river-running issues in the Grand Canyon...thanks to you all.

## VI. My opinion on some big issues in coming years

- The temperature control device (TCD) being considered for installation on Glen Canyon dam by the Bureau of Reclamation, could have a profound effect on river running in Grand Canyon. The TCD, intended to help native fish downstream, remains contentious as to whether the native fish will be more helped than harmed. Also, with warmer water, I wouldn't be surprised to see profuse blooms of nutrients and fecal coliforms washed-in from the Page golf course and sewage plant, both of which sit near the brink of Glen Canyon just below the dam.
- AMP Strategic Plan (see above). I'd like to hear your management vision and values of the river experience and river ecosystem, because the AMWG plans to complete the Strategic Plan by April, 2000.



- Native American issues. In working with the native tribes in the Adaptive Management Program, I have gained greater sensitivity and respect for their concerns in the Canyon, whether they be Hopi, Navajo, Hualapai, Havasupai, Paiute or Zuni. Human visitation is perceived by them to be a major factor in the loss of cultural sites to theft, vandalism, or erosion. I think that some sites should be off-limits to visitation, and that all sites should be respected as much as any other holy place. River runners need to actively change the perception that we are part of “the problem” by becoming more aware that native peoples have occupied the river corridor for many hundreds of years, and that cultural sites and areas of traditional importance are common throughout the river corridor. We need to be more aware of our “footprints” by staying on existing trails and not making new ones, in order to be better stewards of this precious cultural legacy.
- GCRG needs to develop its fund-raising capability if it is to keep the river community involved in an ever-widening set of complex societal issues that govern our relationship to the river experience.

- In my opinion, GCRG should support Glen Canyon Institute’s Citizens’ Environmental Assessment of Lake Powell. The long-term viability of southwest communities and natural resources is at stake. We need to continue to confront the issue of the viability of the dam. It’s easy to take potshots at the dam, it’s a lot harder to create viable long-term solutions.
- The Adopt-a-Beach program continues to need your participation and support. It remains an excellent, cost-effective means for monitoring condition of camping beaches.

Thanks to all of you who continue to give us feedback and support our continued involvement in river science. Feel free to contact any of the following people for more information or input on issues at [gcrg@infomagic.com](mailto:gcrg@infomagic.com):

Andre Potochnik: Adaptive Management Work Group representative.

Matt Kaplinski: Technical Work Group representative.

Gary O’Brien/Lynn Hamilton: Adopt-a-Beach Program.

*Andre Potochnik*



©John Running

*Sneak preview...look for more great photos by John Running in the Spring issue of the BQR*



### Grand Canyon Lesson

Silent, I drift between geologic layers,  
like stacks of weathered parchment,  
tablets towered;  
a record of all life since planetary birth,  
and grow aware that  
beyond these stacks are infinite others  
marking the mollusk, the millipede, the carp,  
the reptile, bird, nautiloid,  
the Anasazi, the deer  
Adam and Eve.

I imagine all the civilizations' monuments  
fortresses, temples, tombs, tabernacles,  
the statuary of every human endeavor;  
grand edifices, thrones, battlements,  
castles, caverns, columns  
of the Inca, Buddhist, Mayan, Aztec,  
Egyptian, Tibetan, European, Asian and  
Neanderthal,  
there in relief in rock.

I dream of the dark core of the earth,  
the billion year bones of prelife,  
Precambrian upheaval,  
tectonic cataclysm,  
the sooty layer of eradication,  
rebirth in compressed, crenulated molten centuries,  
upon centuries,  
upon centuries.

I feel a hot dragon breath, blasting wind,  
hurled sand powder the color of dried flesh,  
and ride a bursting Goliath river  
powering through rock.  
It roars like thunder,  
explodes like novas,  
swirls,  
frigid, silty brown;  
it's serpentine,  
cold-blooded even at rest.

The canyon whispers in the ruins  
of ancient dwellers, holy places,  
abandoned granaries, mines,  
shattered boats, dreams and clay pottery,  
secret gardens, private Edens,  
star-sprinkled nights; sings in  
Canyon wren song, guitar chords and  
companions.

Silent again, I drift.  
I behold the visage of God  
and understand—  
all becomes stone.

*Marion Boyer*



## Adopt-a-Beach Update

**G**CRG WANTS TO THANK all of you who again adopted a beach and stopped to photograph it throughout last summer. Happily, participation was back up again over the 1998 season (from 21 beaches adopted in 1998 to 36 beaches in 1999, out of 41 originally adopted in 1996)! This is excellent news because the program really needed a jump-start after 1996 and folks stepped up to help the program out. As a result we've gathered more support than ever from the funding agencies, allowing Adopt-a-Beach (AAB) to continue as a monitoring program. We are incredibly grateful to the Grand Canyon Conservation Fund and many of our steadfast GCRG members for their continued support of our program since its inception. The additional support this past year from the Grand Canyon Monitoring & Research Center and Grand Canyon National Park through the Grand Canyon Association, have gone a long way to strengthen the program even more as we move into 2000! Together, we all make this program a successful one and something to be proud of!

Thanks for getting your cameras and data sheets sent back in. *If your packet is still molding at the bottom of your can, please shake out the sand and send it back to GCRG!* Each and every photo is important and your comments critical in identifying the trends of beach change, especially with all the wild monsoon activity that occurred in July of last summer. Evaluation of all beaches within the critical reaches of the Canyon should yield some very interesting results given that rainfall was so heavy between May and August, and that there were no high summer flows to speak of that might have deposited new, high elevation sand.

As in previous years, the new 1999 AAB results will be presented at the Spring GTS. This will be an excellent time to adopt a new beach for summer of 2000. Our goal this year is not only to find a steward for all 41 beaches in the AAB inventory, but also to add a few and retire a few as well. As many of you have suggested in the past, there are some beaches (i.e., Talking Heads, First Chance) that either haven't changed noticeably in the last three years, or have become so depleted of sand that they are no longer useful as camps. We want to develop a new upgraded set of beaches to adopt, one that is more representative of present conditions. What do you think? If anybody has any suggestions as to sites that might be added or dropped, please contact GCRG. The idea is to have the list finalized in time for the Spring GTS. And FYI, the 1999 results will also be presented in the annual report that is distributed to pertinent agencies

and adopters (see below). We also present the results at Adaptive Management Workgroup meetings.

*Why is the Adopt-a-Beach Program important? Why should you keep adopting a beach year after year and if you never have before, why should you begin? Because it's still the most thorough, complete rephotography program operating in the Grand Canyon. And it's not just about measuring sand loss and gain for sedimentation studies—that's the job of physical sciences at Grand Canyon Monitoring and Research Center (GCMRC)—it's about measuring the effect on recreation as well. AAB reports to GCMRC under its cultural program. Why? Because the concern is over the quality of recreational resources and therefore, the visitor experience (all of us and the folks we bring down with us). In short, we're looking at the condition of our camping beaches, noting their change over time and are attempting to identify flow release trends that are causing those affects. The information we generate by annual AAB monitoring is available to the Adaptive Management Workgroup by GCMRC (cultural) and through the representation of recreational interests on the Technical Work Group (TWG) by Matt Kaplinski, and the Adaptive Management Work Group (AMWG) by Andre Potochnik.*

So what? The key thing here is that AMWG is the political conduit through which interested parties give input into Colorado River resource issues, and the operation of Glen Canyon Dam. So it's important that we guides give this input, and maintain a presence on the board that decides ultimately whether to recommend future Beach/Habitat Building Flows (BHBF) to the Secretary of Interior.

Grand Canyon National Park is also interested in the findings of our study. Last July, Nicole Corbo and I spent time on the river with the Park and its contributing social scientists. We presented information about the Grand Canyon Youth and the Adopt-a-Beach programs. There is some major focus going into visitor experience issues, primarily in the interest of developing the next Colorado River Management Plan. It's not just endangered species that dictate how the corridor will be managed; from the park's perspective, the visitor experience (read: commercial and private river runners) is also a critical component. And yet, in addition to recreational representation, AAB does gather information about morphological changes to beaches in the canyon. Much information can be gleaned through rephotography about changes in elevation and shape of sand beaches. Over time, the Adopt-a-Beach program is developing a clear



historical record that can be linked to the effect of regulated flow releases from Glen Canyon Dam.

One of the big things that will be focused on this next year in the program will be the degree of vegetative encroachment into common camp areas. Is the vegetation reducing campable area to the extent that it's a concern? Overall, the beaches have lost sand consistently since the last BHB, and I expect 1999 results will be similar. We want to be able to quantify the relationship between the flow schedules, beach sand longevity and growth of vegetation over time.

We're going into the fifth year of the study now. Results of the AAB may become even more important in the future as goals for the cultural program in GCMRC are more carefully defined.

Thanks again to everyone who participated in 1999!

Gary O'Brien

## Adopt-a-Beach 1999 Adopters

Badger Canyon	8.0	Dave Trevino	Bass Camp	108.3	Can-X
Salt Water Wash	12.2	Gary O'Brien	110 Mile	109.4	David Brown
19 Mile	19.1	Clinton Anderson	Upper 114 Mile	114.3	Ed Hench
20 Mile	19.9	Nicole Corbo	Lower 114 Mile	114.5	Ed Hench
North Canyon	20.4	Can-X	Below Bedrock	131.1	Jon Baker
23 Mile	23.0		Galloway Canyon	131.8	
Silver Grotto	29.3	Jed Koller	Stone Creek	132.0	Can-X
Nautiloid Canyon	34.7	Tillie Klearman	Talking Heads	133.0	
Tatahatso Wash	37.7		Racetrack	133.5	Bob Grusy
Bishop Camp	38.3	Jeff Pomeroy	Tapeats Creek Mouth	133.6	
Buck Farm Canyon	41.0	Sam Walton	Lower Tapeats	133.7	Lora Colten
Below Nevills	75.6	Can-X	Owl Eyes	134.6	Gary O'Brien
Hance Rapid	76.6		Backeddy	137.0	Jeff Sorensen
Clear Creek	84.0	Charly Heavenrich	Kanab Creek, above	143.2	Nikolle Brown
Above Zoroaster	84.4		Olo Canyon	145.6	Lynn Roeder
91 Mile Canyon	91.0		Matcat Hotel	148.5	Can-X
Trinity Creek	91.6	Can-X	Upset Hotel	150.4	
Above Salt Creek	92.2		Last Chance	155.7	David Desrosiers
Schist Camp	96.0	Bert Jones	First Chance	157.7	Nikolle Brown
Boucher Canyon	96.7		Tuckup Canyon	164.5	Paul Smolenyak
Crystal Creek	98.0		Upper National Canyon	166.4	Andre Potochnik
Lower Tuna Rapid	99.7	Jon Hirsh	Lower National Canyon	166.6	Dave Christensen
Ross Wheeler	107.8	Jeff Sorensen			



## News Flash: Lake Powell Is Still There

**G**UESS WE HAVE TO postpone our Glen Canyon float another year.

At Glen Canyon Institute, we've been chiseling away at the notion that Glen Canyon Dam is an indispensable, impenetrable, permanent monument to human dominance of the natural landscape that you and I can't do without. We've gotten a bunch more folks to ask, what if? What if we decommissioned the dam and drained the reservoir?

We've been busy trying to answer some questions as well. We completed nine technical studies as part of our Citizens' Environmental Assessment of the proposal to drain Lake Powell in 1999. Here are a few things that we learned:

- The reservoir lost an average of 882,000 acre feet of water per year due to evaporation and bank seepage between 1963 and 1997.
- At least 860,000 acre feet of sediment is trapped in Lake Powell.
- Lake Powell will fill with sediment in 200 to 800 years, depending on the rate of sediment inputs from tributaries.
- When the reservoir is drained, Glen Canyon will recover quickly from the sediment that buries the mainstem and side channels (from one to six years in different areas of the canyon).
- In 1998, 2,458,990 recreationists visited Glen Canyon National Recreation Area, generating \$380,194,100 (this is 24% less than has been quoted by Congressman Cannon).
- Visitor numbers have been decreasing steadily at Glen Canyon National Recreation Area since 1993, except for 1996, with a total decrease of 32.1%.

(Data are from studies by Tom Myers, Center for Science in Public Participation, and SWCA, INC.)

We're going to keep conducting studies and learning more about what will happen if we drain Lake Powell, until we can convince the federal government to do an EIS on the proposal. Hopefully that day is not far off.

You probably had lots of questions from your passengers about draining Lake Powell last season.

What were they asking you? Did you feel prepared to answer their questions or provide them with information about the Glen Canyon Dam debate? Let us know if there are questions out there that we are not addressing or if we can help you be better prepared for those discussions this season. We will also gladly provide you with extra copies of our newsletter, *Hidden Passage*, and our membership brochures to pass out on your trips. You can reach us at Glen Canyon Institute, Box 1925, Flagstaff, AZ 86002 or at [info@glencanyon.org](mailto:info@glencanyon.org). Or check out our web site at [www.glencanyon.org](http://www.glencanyon.org). If you would like to join Glen Canyon Institute, it's \$10 for students, \$25 for individuals (or just write us the biggest check you can!).

If you'd like to come on my Glen Canyon float when the reservoir is drained, I'm starting a list...

Pamela Hyde





# Grand Canyon River Guides on the Future of Glen Canyon Dam

*The following was written by Andre Potochnik for his presentation to the Utah Associated Municipal Power Systems Annual Meeting on behalf of GCRG. It was part of a panel presentation on the "Removal of Glen Canyon Dam" held in August, 1999, Ephraim, Utah.*

**T**HE QUESTION OF THE REMOVAL of Glen Canyon Dam is a complex issue that never fails to stir-up a debate among our members. We love free-flowing rivers and their beautiful canyons, but some of us also appreciate the job benefits and hydroelectric power produced by the dam.

We all recognize that the dam won't last forever. The river will eventually remove it, as it has the numerous volcanic dams in western Grand Canyon during the recent geologic past. We view Lake Powell as a temporary feature on this timeless landscape. And when the lake is full of mud, what will be left?... a 180-mile-long tamarisk-choked silt flat that leaves little hope for the restoration of Glen Canyon, one of our country's greatest natural wonders. Page, Arizona will likely become just another ghost town. So, the issue of the removal of the dam raises big questions on the sustainability of Colorado River dams, the value of national parks, and the destiny of civilization in the southwest.

In our hearts and minds, we share a common vision for the future of the river in Glen Canyon. It is a vision of a free-flowing river, wild and muddy... coursing to its own rhythms through a renewed desert ecosystem. We envision the establishment of Glen Canyon National Park, which will oversee the healing of this vital and exquisite landscape as it emerges from its watery slumber. We wish to leave this river and canyon better than we found them, for the enjoyment of future generations.

A major public addressing of this very complex issue is essential. Now is the time to plan a sane, non-catastrophic path to a post-dam environment, rather than deny or ignore this eventuality. We support the Citizens' Environmental Assessment, and the efforts of all those willing to develop a sustainable future for the Colorado River in Glen Canyon.

Following are three articles excerpted from our newsletter, the *boatman's quarterly review* that capture many of the thoughts and concerns of our membership.

- 1) "GCRG on the Future of Glen Canyon Dam" (BQR 11:1, Winter, 1998). This statement from the board of directors recognizes the inherent non-sustainability of the present system, and proposes that we manage the dam concurrently for both short term and long term goals.
- 2) "A Geologic Train Wreck, the Long View on Colorado River Dams" (BQR 10:2, Spring, 1997). This statement conveys the importance of long-term planning to avoid ecological disaster.
- 3) "Where Should GCRG Stand on Glen Canyon Dam" (BQR 11:3, Summer, 1998). This is a listing of member comments from a straw poll about the removal of the dam. In a series of "one liners" it conveys the variety of sentiment held by our members.

Back issues of the *boatman's quarterly review* contain a variety of views from our members on the future of Lake Powell and may be found in these previous issues, some of which are on our website [www.gcr.org](http://www.gcr.org):

- Bailey, Ric, BQR 12:1, Points, Counterpoints.  
Beard, Dan, BQR 11:1, Dan Beard on Restoring Glen Canyon.  
Dimock, Brad, BQR 10:2, Glen Canyon Institute.  
Eberz, Noel, BQR 10:3, Dam Riddance?  
Elliot, Rob, BQR 10:4, Congressional Testimony.  
Ghiglieri, Michael, BQR 10:4, Why Not Bring it Back?  
Ledbetter, Jeri, BQR 11:1, Restore Glen Canyon.  
McElya, Bruce, BQR 12:1, Points, Counterpoints.  
Potochnik, Andre, BQR 10:2, A Geologic Train Wreck, the Long View on Colorado River Dams.  
Stevens, Larry, BQR 10:4, A Butt Pygmy's Rebuttal.  
Stevens, Larry, BQR 12:1, Science, Values, and Vision for the Colorado River.  
Valdez, Rich, BQR 10:2, Save the Dam.  
Weisheit, John, BQR 10:3, Why I Choose to Charge at the Glen Canyon Windmill.  
Werbach, Adam, BQR 10:4, Congressional Testimony.

*Andre Potochnik*  
AMWG Representative  
August 10, 1999



## Glen Canyon: Images Of A Lost World

Every once in a while some one or some thing comes along and sets a whole new standard. Previous attempts become just that, attempts. A month ago I finally got my hands on one of the first copies of Tad Nichols' long awaited *Glen Canyon: Images of a Lost World*. It is a book of black and white photographs he began in 1950, on the first of thirty-some trips through Glen Canyon.

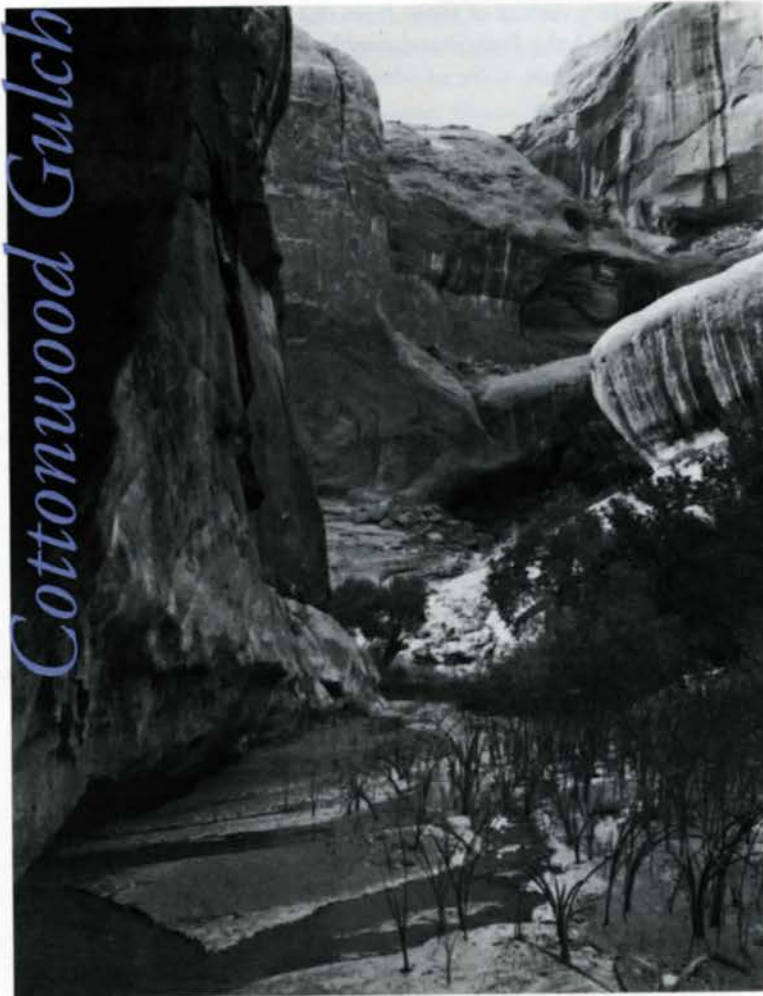
It was worth waiting 40 years. In a disarmingly beautiful layout by graphic designer Larry Lindahl, some 140 of Nichols' images take us from the put-in at Hite to the takeout at Lees Ferry. There is no hurry. Nichols takes time to explore the unending variety of side canyons, to scale the cliffs, to visit the Anasazi ruins and glyphs. Accompanying the images are Nichols' recollections and journal notes, giving body and breadth to the visual feast.

Oddly enough, both Nichols and his life-long pal and fellow Glen Canyoneer Katie Lee waited more than forty years to pass on to us their versions of Glen

Canyon. In Lee's *All My Rivers are Gone*, she gave us a very emotional, sensual, and extremely personal account of Glen Canyon. Now Nichols, true to his quiet, gentle, and elegant self, has given us an utterly different, perfectly complimentary vision. As a photographer, Nichols is exacting and patient—as a visual artist he is sharp, sensitive, and has an uncanny eye for composition. Perhaps a few sample images can give you an idea—the book defies description. All I can really say is that *Glen Canyon: Images of a Lost World* is the most beautiful book I have ever seen.

*Glen Canyon: Images of a Lost World*, by Tad Nichols, Museum of New Mexico Press, 1999, ISBN 0-89013-330-1. Available for \$35 from Glen Canyon Institute, Box 1925, Flagstaff, AZ 86002 or online at [www.glencanyon.org](http://www.glencanyon.org). It is also available online at the GCRG bookstore, at [www.gcr.org](http://www.gcr.org).

Brad Dimock



Water flowed all along the way.

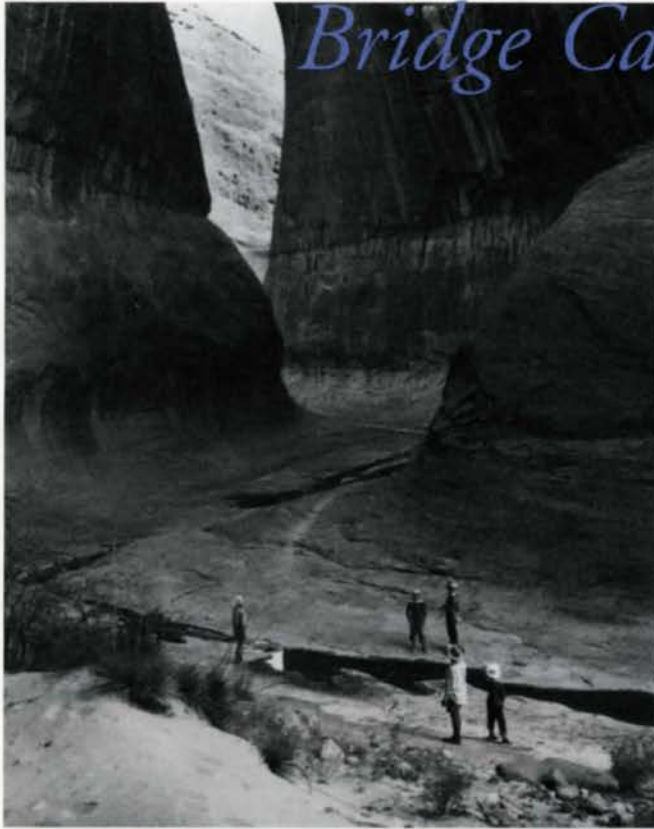
Little rivulets streamed across the bedrock, formed by springs that bubbled out of the canyon floor. You could get down on your hands and knees and drink from these cool bubbling springs—refreshing on a hot day.

You lived day by day, hour by hour.

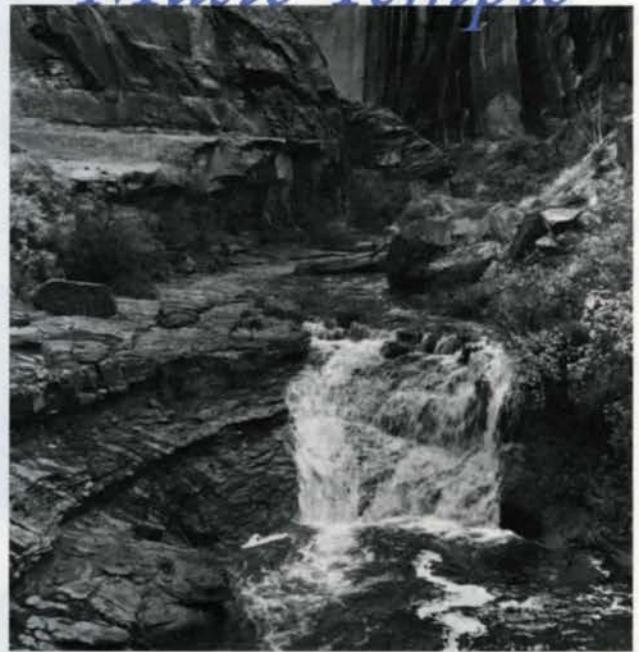
You didn't know what was coming the next day, and you didn't care. You just lived and enjoyed the day as much as possible. That was the beauty of it. You totally forgot about the rest of the world. It didn't exist. All your existence was this beautiful place.



## *Bridge Canyon*

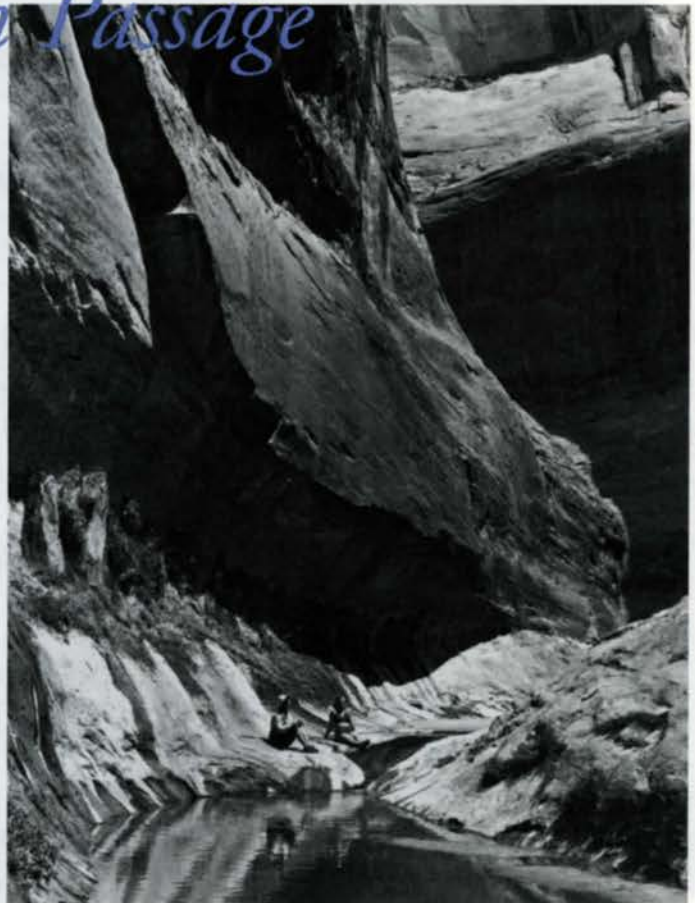


## *Music Temple*



## *Hidden Passage*

How can you describe the experience of standing in these places, being surrounded on all sides and above by a grand amphitheater or temple? It's almost impossible to describe because you have to be in there, you have to stand there, you have to see and feel the whole thing around you. It was an enveloping experience that no photographer could take; no person can really describe to you...the beauty of the sandstone and the tapestry walls, the designs on the walls, and the pool of water at the end, a little trickle coming down and echoing over the whole place. It's like standing in a great cathedral. There's a spirituality in that. I can't describe it any other way.





## Grand Canyon: Time Below The Rim

**H**ERE IS A BOOK for people who ask you why you keep going down there. What is it that makes you piddle your life away in that godforsaken hole? Gary Ladd and Craig Childs, photographer and writer respectively, spent much of the last two years chasing the elusive, pervasive, addictive soul of Grand Canyon. Of course it can never be caught, but this is as close as anyone has gotten.

Childs clammers through dozens, perhaps hundreds of the Canyon's side gulches in every season, listening, touching, feeling the place both physically and emotionally. His writing draws you on to the next, and the next, much as the Canyon draws him on. His impressions of his river trip by dory are vivid, perceptive, and amusing.

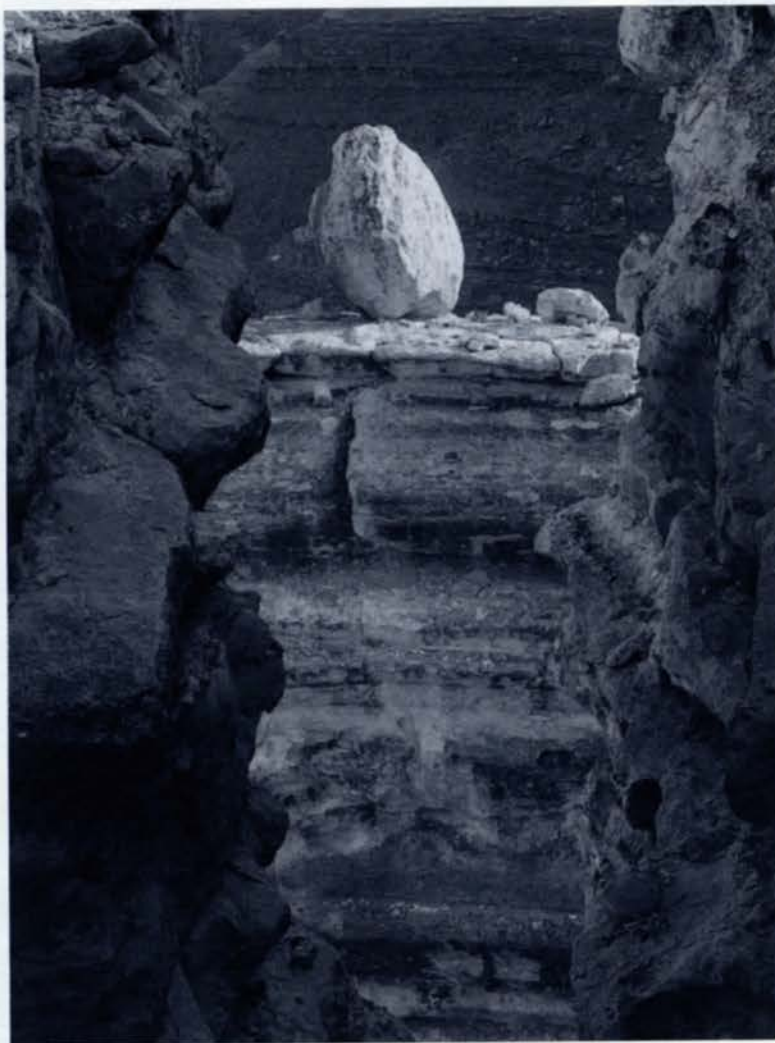
Gary Ladd composes striking color images of the myriad magical places we live in, work in, and wander through. His eye for composition and color is

exquisite, his knack for finding the right place amazing. For those of us that don't spend much time down there any more, this book has the ability to take us back, reawaken the senses, and make us smile. For those who haven't lived down there, it can give you a hint and perhaps even lure you in.

At \$49 it is hard for a boatman to run out and buy this book. But it is a good one to put at the top of your indulgence list.

*Grand Canyon: Time Below the Rim*, text by Craig Childs, photography by Gary Ladd. Arizona Highways Books, 1999, ISBN 0-916179-78-8 \$48.95. Available at your favorite independent bookstore or the GCRG online bookstore at [www.gcr.org](http://www.gcr.org).

*Brad Dimock*



“Each kind of rock can change your mood. Not in some subtle, subliminal way, but like a sudden turn of emotions. Like a slap in the face, then a kiss on the back of the neck. Sand will rub differently in your boots. One night it will provide good dreams; another, nightmares. You will grow meditative on the rims of the Esplanade sandstone, with all of the open light and long vistas, then become wild-eyed and tense in the dusky narrows of Redwall limestone. Each of your sensations will be scratched down to whatever formation lies below your hands or feet.”





“Like a needle, the Colorado River sews the Grand Canyon to the planet. The stitching starts below Lees Ferry, in a narrow chamber in the rock. Here, the Grand Canyon first says its name out loud. Here, its cliffs first reach enormous height and breadth. Water hisses and rumbles. The sound comes from the rising and receding swells that coil off the walls and boulders. The first heavy shadows appear. In the calmest stretches, the water chases its own tail, boiling, bunching up, turning out spirals.”

“At the top of Granite Rapids, the water swells, then slopes inside. All eddies and whirlpools are drawn tight. We sail across this tongue, where the gradient of the water and the underside of the boat adhere to the same mathematical constant. Just below the dory, the rapid inhales, and it looks like you could lose a boat in there. This is a moment of beauty, the run of the dory just before the rupture of the first wave, before the oars are pounded back, before the river slams against the deck. This is the sweet curve of power, the water taut as a drum head. I hold my breath as we cross.”





## News From GCMRC Logistics Coordinator

**A**S PROMISED, here is a schedule of Grand Canyon Monitoring and Research Center (GCMRC) science trips coming up this winter/spring. I asked each of the scientists to give me a one or two sentence "blurb" describing their projects. After spending up to a half-hour getting that sentence or two, I, well, learned a lot. Hopefully my interpretation helps communicate to you what's going on down there. If you want to know more, let me know, I'll try to help or get you in touch with folks who can. Once again I encourage feedback from everyone about how they think science can work to effectively monitor,

manage and ultimately protect the Grand Canyon's natural environment and how the guiding community and science can be better working partners.

And just a note—be advised GCMRC does not hire boatmen per se. Boat operators are hired through our contractors. So it is useless to contact me if you are looking for work—sorry.

Write, call, whine,...I want to hear from you!

Fritz

520-556-7207

cfriz@flagmail.wr.usgs.gov

### GCMRC Science Trips: January–April 2000

Trip	Dates	Principal Investigator
<i>Winter Avifauna 00-I</i> The winter bird trips census the over wintering bird population along the river corridor. Censusing involves stopping at designated study "patches" and counting passing waterfowl, raptors and resident birds.	January 8–20	Jennifer Holmes
<i>Winter Fish Studies</i> This is the last trip for the USFWS contract to study native fish in the main stem and the Little Colorado. The winter fish trips survey overwintering survivorship of the previous year's native fish spawn. Study areas are at and around mile 30, the Little Colorado, "Randy's Rock" and tributary streams.	January 12–27	Dennis Stone
<i>USGS Streamflow Monitoring 00-II</i> The USGS trips perform measurements and maintenance at the Lees Ferry, Little Colorado, Grand Canyon (Phantom Ranch) and Diamond Creek gages. At each gage a manual discharge measurement is taken from the cableway. This measurement provides a way to verify the relationship with the automatically recorded stage and discharge rating established for the gage. Accurate flow readings can then be calculated and posted as real-time flow measurements to all of us on the web. Water quality information is also collected at each of these gages. On the trip, manual measurements are taken on temperature, specific conductivity, and turbidity to also insure accurate calibration of the automatically recorded measurements.	February 9–18	Nancy Hornewer
<i>Winter Avifauna 00-II</i> The second and final winter bird trip (see above).	February 12–24	Jennifer Holmes
<i>Survey Control</i> Survey control trips are conducted by the GCMRC survey department. The crew uses GPS receivers and conventional survey methodology to expand the Geodetic Control Network and georeference control points throughout the Canyon. The data base established by this work is used for all research study projects and also for GIS (Geographic Information System) integration.	February 13–29	Mark Gonzales
<i>Terrestrial Biological Program PEP</i> The Biological Protocol Evaluation Panel consists of experts in the areas of vegetation, avifauna, conservation biology, ethnobotany, and statistical analysis. The panel will be joined on the river by principal investigators of terrestrial biological study projects and other personnel from agencies representing stakeholders in the Adaptive Management planning process. While on the river they will get a first hand view of the terrestrial resources along the river corridor and will have a chance to review the data collection effort for the purpose of development and planning of a long-term monitoring program.	March 5–15	Barb Ralston



*Cultural Resources PEP*

March 6-12

Ruth Lambert

The cultural Resources Protocol Evaluation Panel (PEP) consists of four experts from each of four areas; Native American issues, archeology, geomorphology, and compliance and monitoring. The panel will be joined on this trip by representatives from the Hopi, Navajo, Southern Paiute, Hualapai, and Zuni tribes as well as other personnel from agencies representing stakeholders in the Adaptive Management planning process. Together they will have a first hand view of the cultural resources in the canyon and have a chance to discuss and plan issues involved in the long-term Adaptive Management process.

*Hualapai Cultural Monitoring*

March 21-April 2

Loretta Jackson

Each year a trip is funded by the Bureau of Reclamation for each of five participating tribes (Hopi, Navajo, Southern Paiute, Hualapai, and Zuni) by an arrangement called the Programmatic Agreement. This trip will involve Hualapai elders, youth and tribal cultural resource personnel to monitor traditional Hualapai cultural resources along the river corridor.

*Sandbar/Channel Margin Survey*

March 18-31

Matt Kaplinski

On this trip the "Namdors" will team up with the GCMRC Survey Department to analyze sediment storage in the channel margin bars using conventional survey methodology and multibeam translocation sonar equipment.

*Breeding Avifauna 00-I*

April 1-14

Jennifer Holmes

As early as April each year a variety of breeding birds begin arriving in the Canyon. This is when the excitement begins for the "bird-nerds." Their days start early when the newly arrived breeders greet the day with their songs. Each "patch" is surveyed for density and diversity of breeding species.

*USGS Streamflow Monitoring 00-III*

April 12-21

Nancy Hornewer

In addition to stream gage maintenance (see above) this trip will include an annual survey of the Grand Canyon Gauge to verify accuracy of the gage control point. Work will also be done on the stream gage on Hermit Creek (above the hiker campground) in order to monitor discharge from springs and seeps in the Hermit drainage.

*Kanab Ambersnail Monitoring 00-I*

April 13-26

Jeff Sorensen, Clay Nelson

Kanab ambersnail researchers can be found at Vaseys Paradise and other seeps/springs where they look for the elusive little snails, map vegetation area, measure various habitat characteristics, and document natural or man-made disturbance. If you are interested in learning more about these endangered creatures, ask Jeff or Clay to provide a science talk to your river trip.

*Bird-Bug 00-I*

April 22-May 6

Helen Yard

Helen and her partner Neil Cobb have a new contract for 2000. The objective of this pilot study is to determine if there are multi-trophic links among plants, insects, and birds in the riparian system of the Grand Canyon that can explain the structure of avian communities. Assessing the strength of these trophic linkages and developing bird "breeding currency" bioassays are crucial for constructing models to predict avian community dynamics in the Canyon.



# Gene Shoemaker

*He considered himself a scientific historian, one whose mission in life was to relate geologic and planetary events in a perspective manner. He brought geologic principles together with the mapping of planets, resulting in more than three decades of discoveries about the planets and asteroids of the solar system.*

*Gene Shoemaker began exploring for uranium deposits in Colorado and Utah in 1948, and these studies brought him to the many volcanic features and the one impact structure on the Colorado Plateau—the Hopi Buttes and Meteor Crater. During the late '50s, he did his classic research on the structure and mechanics of meteorite impact, and invented the Branch of Astrogeology within the United States Geological Survey.*

*It is said that Gene Shoemaker longed to go to the Moon as an astronaut and study its geology firsthand. A medical condition kept him from doing that, but he helped select and train the Apollo astronauts in lunar geology and impact cratering. He led teams who were investigating the structure and history of the Moon and developing methods of planetary geologic mapping from telescope images.*

*Obviously, Gene was a smart man. He soon figured out how to make work by combining his knowledge of the geology of the Colorado Plateau with his love of river running, and came up with the idea of rephotographing the pictures taken on John Wesley Powell's second exploration of the Colorado River in 1871–72. Gene and his partner identified and rephotographed almost every one of the Powell trip's camera stations nearly 100 years later. Their work, "In the Footsteps of John Wesley Powell," was published in 1987, and marked the beginning of the photo matching work that now continues.*

*Gene Shoemaker died in 1997 from injuries sustained in a car accident while in Australia studying impact craters. The following year Gene got his wish to travel to the moon, when a capsule carrying a small amount of his ashes traveled aboard NASA's Lunar Prospector spacecraft. On July 31, 1999, after eighteen months of successful orbital scientific operations, Lunar Prospector was commanded to crash into the surface of the Moon. At his journeys' end, Eugene M. Shoemaker became the first inhabitant of Earth to be sent to rest on another celestial body.*

I'VE BEEN WORKING AROUND on the Colorado Plateau since 1948. I've had a long lasting love affair with the Green and Colorado Rivers. In 1949 I went with some friends down Glen Canyon. Then later on just boated on the river recreationally, all over on the river system. But...[there] was a project I undertook in 1968. It was a project I had dreamt about doing from 1954, when William Culp Darra published the first biography of John Wesley Powell. It was a good biography. In this book Darra mentioned the pictures that had been taken on the second Powell expedition. I decided right then and there that would be a wonderful project, to go back and find the camera stations of the photographs taken by the photographers with Powell. I kind of had in mind well, it would be something I would do when I retired. But in 1967, late 1967, I got home from a trip, back to Flagstaff, and read the hometown paper, the Daily Sun, and discovered there that the U.S. Geological Survey [USGS], Smithsonian Institution and the National Geographic Society were going to plan a centennial celebration of Powell's first trip down the river, in 1869. I made up my mind right then and there, now is the time to do that project. I promptly invited myself on the organizing committee. I approached the director of the Geological Survey and was able to get support to undertake a summers' long trip, in 1968, starting in Green River Wyoming and ending at the Grand Wash Cliffs, more exactly at Pearce Ferry. We

tried to recapture all the camera stations that we could, from the beginning of the second Powell expedition through to the end. I started out with Hal Stephens who was my primary partner in this and who was to be the photographer on our trip. We'd jointly located sites and I took the detailed notes of each one. We organized the trip in six sections...and the trip lasted about three months. We did indeed start off at exactly the same point that the Powell party started on their second expedition. Of course, we knew where it was because we had the photographs. In fact we photographed several sites around the town of Green River. Recaptured some of the sites that E.O. Beaman, who was Powell's initial photographer, had taken.

Of course a number of the sites as we went down were covered over by Flaming Gorge Reservoir, backed up behind Flaming Gorge Dam. I had seen the river before the dam was put in. But we were able to locate fairly closely whole series of those sites. Below Flaming Gorge Dam we then had the open river again. Down through Red Canyon, Browns Park, down into Lodore Canyon. And indeed, the second Powell expedition took a lot of photographs up in that part of the trip. They became somewhat more sparing of the photography as they went further downstream. On the second segment, then, we took the boats out at Dinosaur National Park, put them back in again at the head of Desolation Canyon, actually at the Ouray Indian Reservation. The third leg of the trip was from there





*Gene Shoemaker (at plane table) and Hal Stephens (behind camera) at Trin Alcove on the Green River in August 1968.*

on down to Green River, Utah. Then we had another group join us. We hop-scotched then, and the next segment was down through Stillwater Canyon and Cataract Canyon. In fact Tad Nichols and his son-in-law came up and met us by boat. By that time the reservoir was already getting pretty high behind Glen Canyon Dam. They gave us a tow out to the new site of Hite. But we did get some interesting Powell shots actually somewhat up out of the river banks. Some Indian ruins that they had photographed and some interesting inscriptions of the Powell party, on the rocks, now under water. Then we had to just portage around Lake Powell and put the boats back in at Lees Ferry...[and] continued that work on down through Grand Canyon.

Turned out that E.O. Beaman left the Powell party midway through the 1871-72 trip. Powell and his crew wintered over in Kanab, Utah. Beaman had a falling out with Powell. Powell bought out Beaman's share of the photographs and equipment. He hired a new photographer out of Salt Lake City who actually did go back out. They had cached one boat at the mouth

of North Wash. The party went overland and discovered the Escalante River. This is on horseback. Thompson was in charge of that, and they went back and recovered the boat that was cached there with a complete set of photographic gear. They took pictures coming down Glen Canyon the following spring. The photographer that Powell had hired really wasn't physically up to it. He was fairly sick. In the meantime he succeeded in training John Hillers, whom Powell had hired in Salt Lake City as an out-of-work mule-skinner, who had become a boatman on the trip and had just picked up photography. Having been trained a little bit along the trip, he turned out to be a superb photographer. The rest of the photographs taken down through the Grand Canyon were taken by Hillers instead of Beaman. We spent about a month, starting at Lees Ferry and taking out at Pearce Ferry; recovering Hillers' camera stations all the way down through Marble Canyon and on down through the Grand Canyon. Actually the Powell party took out in the summer of 1872 at Kanab Creek. They had a supply coming in on horseback at Kanab that brought



supplies down to the river to re-supply. They were going to re-supply but the river was so much higher than Powell had seen it in 1869 that he decided the better part of valor was to abandon the river at that point. So Hillers took a series of pictures going up Kanab Creek, which we did follow out on foot for about eight miles up Kanab Creek. That was about as far as the remaining pictures go. It turns out that during the winter encampment in Kanab, Hillers had gone with Powell's cousin and scrambled down from Toroweap Valley down to Lava Falls. So there were a series of Hillers' pictures taken at Lava Falls. Even though the second expedition didn't actually make it to Lava Falls on the river, we had a very nice sequence to recover there. So that was as far downstream as we had photographs to recover from that second expedition.

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Eugene Shoemaker  
1928 ~ 1997

*In 1994 a little handful of GCRG regulars got to go on an unbelievable trip. We started out calling it the "Legends Trip" but then that seemed kinda puffed-up after awhile (especially to all the other Legends that didn't happen to be on it), so pretty soon we dropped that for the "Old-Timers Trip," which wasn't totally true either, or at least only in a relative sense. But there actually were a few Legends on it,*

*and one of them was Gene Shoemaker. He was a world famous astro-geologist who had received the country's highest scientific honor, the National Medal of Science in 1992. He had been all over the pages of Time Magazine recently for discovering—along with his wife Carolyn and one David Levy—the Shoemaker-Levy Comet, which had then smacked Jupiter in the midst of great fanfare and applause here on Earth. And as if that alone weren't enough, here he had a river history too.*

*He only had time to go to Phantom Ranch and so we banged out a short interview with him. We hated to see him go, because his good spirits and plain-spoken style had added immeasurably to our own enjoyment on this river trip. He was a young man though, a mere 62, and in pretty good shape. So even though we weren't all that happy with the half-assed interview we'd done on this trip, we figured, as we watched him disappear around the bend, we'd catch up to him again sometime down the road.*

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*How valuable is photo matching to the United States Geological Survey? What do you get from matching these things?*

*We were basically the first persons, Hal Stephens and I, to go back and do this kind of thing.*

*Nobody had thought of it.*

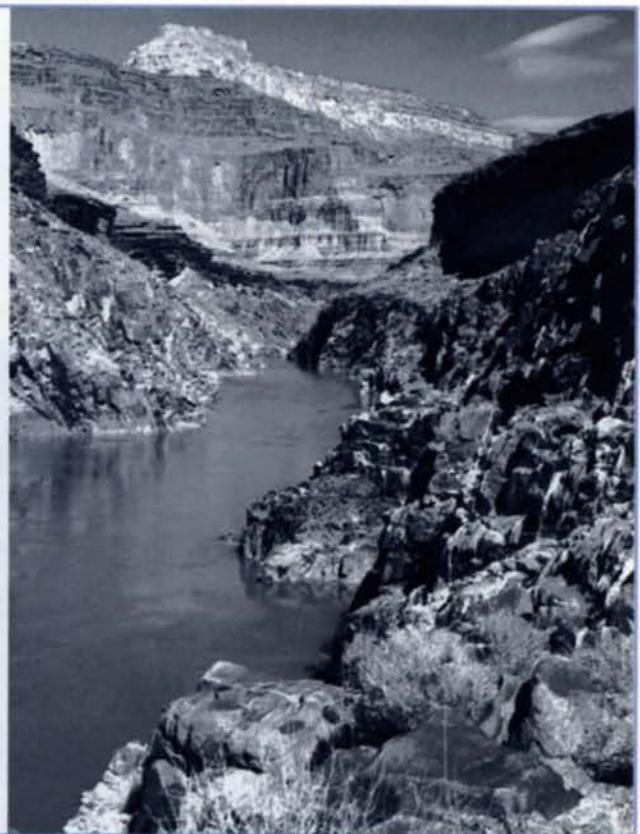


Powell Centennial trip on the Green River near Flaming Gorge, 1968. L to R: Hal Stephens, Patrick Shoemaker, Carolyn Shoemaker, Elliot Morris, Gene Shoemaker, Elliot Morris, Toby Too (in black).





In this never-before published view, Hillers climbed to an obscure point on river left at about mile 114 to take this upstream view in mid-September 1872. The water level is obviously high. Based on his river experience, Kenton Grua estimated that the Powell Expedition was travelling on about 85,000 cfs at this point. This may have been the deciding factor in Powell's sudden decision to abandon the river at the mouth of Kanab Creek several days later.



Stephens matched Hillers' view in September 1968 while standing too far behind the original camera station. This may have been the reason this view was not published in the book "In the Footsteps of John Wesley Powell."

The shrub in the foreground is a Mormon tea and has survived for 96 years, looking very similar.

Nobody had ever gone back and tried to match photographs. It soon became a popular sport. [laughs] A lot of people got into going back and looking at old photographs. And matching the sites to see what the changes were.

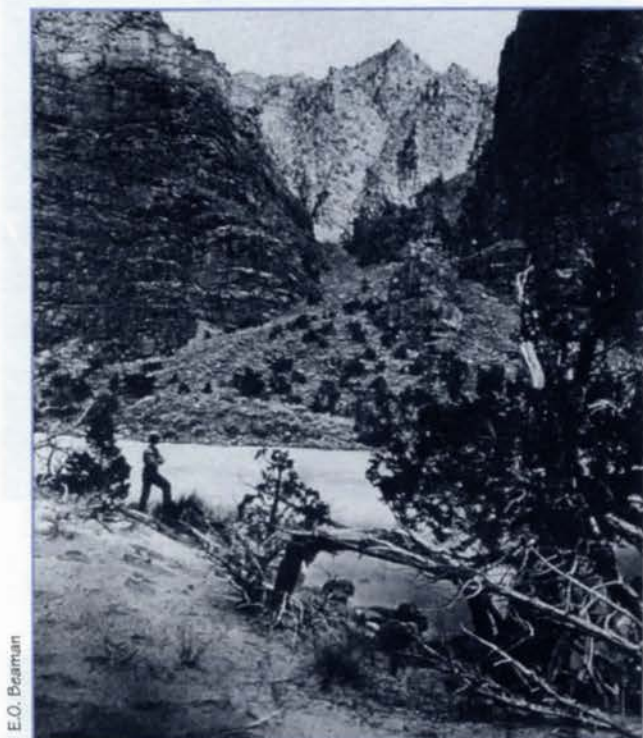
We really had two objectives in this work. One of them was simply to develop a good descriptive album of the beautiful work that Hillers and Beaman did. They deserve to be recognized as pioneer photographers of the west. While Jackson and several others had gotten quite a reputation, there had never been systematic publication of the photographs from the second Powell expedition, which was really pioneering work. So my first objective was really to publish these photographs—get them known to the public. Do it in a way to describe what's there and to give these pioneers credit for what they had done. We intended the book to be out in time for the Powell Centennial, but what happened was that I left the full time

employment with the USGS in the end of 1968 and went to Caltech. While we had all the photographic material ready, and the maps, there just wasn't time to bring it all together. The book was published after Stephens retired and had the time to sit down and finish pulling it all together. So we didn't make that one objective of getting the work out for the Powell Centennial, which was the initial intent. The second intent was that I hoped to learn something about the nature of the changes in this country. I had no idea what we were going to discover because no one had ever done it before. It's an ideal place—coming down through the canyons of the Colorado Plateau. It's one of the least disturbed areas. If you exclude the dams and all, the areas that have not been affected by the dams—that's one of the least disturbed areas left, in the conterminous United States. So you see what my idea was; to try to understand something about the rates of geologic processes. The rates of change on the



river bank or in the side canyons. The canyon walls—what I found was a surprise, frankly. We found that in 85 percent of the cases when we went back and located a scene there was hardly any change at all, either in the background or the foreground. Small rocks on steep slopes were still in the same place. Cobbles on the river bank were in the same place—that was a big surprise—in most cases. It was only in the remaining 15 to 20 percent of the cases that we

landscape. I think we're coming to understand now, that that is the way most geologic processes work. Geomorphic processes. That they are dominated by the rare several hundred year flood, or thousand year flood, not by the annual events or the decade-al events, which has been the view that has been embedded in the consciousness of geologists.... There was a view that you could go sit on the bank of a stream and see what was doing the work on an



E.O. Beaman



Hal Stephens

**Canyon of Lodore.** This camera station is on the west bank of the Green River. View is across the river to the southeast, up the gully of the Corral of Lodore. Two piñons have grown up to frame the twisted juniper limb seen in both pictures.

actually saw the changes. What was really interesting was there were very few intermediate cases where there were just a few changes. Either the whole foreground scene was changed or there was hardly anything disturbed. Just a few cases where, say, one or two rocks had been moved. That brought home to me, that the nature of geologic processes that sculpt these canyons, and for that matter sculpt all of the landscape, is such that very little happens over most of the time. Most of the change takes place in very rare events. Usually caused by storms. They will be flash floods on the main river. They will be debris flows on the side streams. Or a section of the cliff falls off. At any one place the change is basically catastrophic. Nothing happens for hundreds of years or sometimes even for a thousand years. Then there will be a catastrophe, a local catastrophe that changes the

average day. And it's not true. Very little happens on the average day. It's that one rare day in a hundred thousand in which most of the geologic change occurs. So that was...that was kind of a revelation from that book.

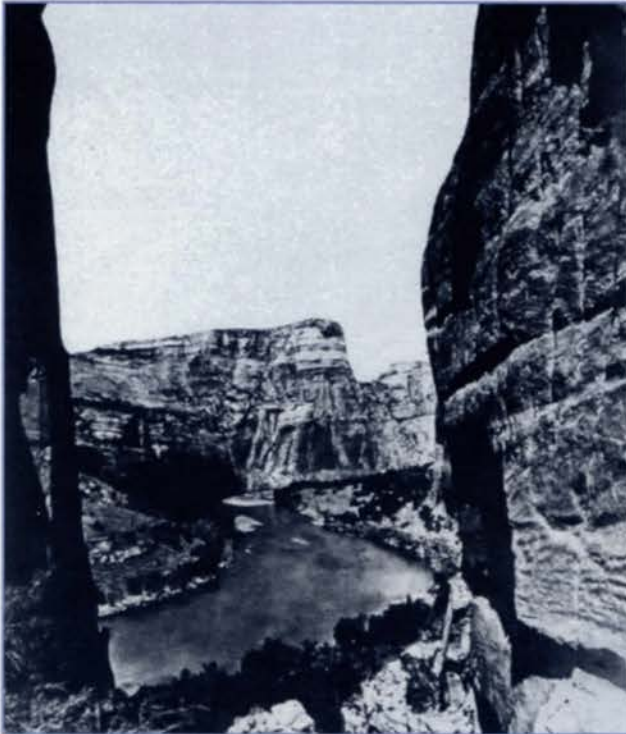
That preceded, of course, the work that is now ongoing, the beautiful detailed studies that are being carried out by Jack Schmidt and Ted Melis and Bob Webb. The way they've gone back now and looked at many many other photographs, more extensive photographs like Stanton's collection for example. And turned these photographs into a beautiful scientific resource for really understanding the frequency of these events in the canyon.

*How are the Stanton photos? How do they compare with Hillers' or Beaman's?*



Stanton took a very good set of photographs too. They were much more extensive in the Grand Canyon, by an order of magnitude over what Hillers took, 'cause he was trying to document the route of his proposed railroad. The Stanton collection, I don't know the exact number, is some order of a thousand photos. Vastly more extensive data that dates back to the late 1800s. So it's now been a century since Stanton's time. They actually provide more details,

flows—is much higher. Higher than I would've guessed. In some cases there have been multiple debris flows, such as at Prospect Canyon, in the course of less than 50 years. I would've had no way of knowing with the small coverage that we had from the Powell photographs. But I am surprised. I still think that at any given place, if you look at these really enormous debris fans that we see, there are occasionally huge floods that I think are on the order of every thousand



E.O. Beaman



Hal Stephens

**Yampa River Canyon.** This camera station is about eight miles up the Yampa from Echo Park. The view is downstream. A juniper tree on the left side of Beaman's picture may be the same one that we see today. Box elders still line the river bank.

more scientific information than was available from the Powell photographs. But the basic story was there in the Powell photographs. If you take the photographs, not just from the Grand Canyon but from the whole river system right up through the Green, all the way back to Green River Wyoming, you have a pretty good sample of the Colorado Plateau in those photos.

*Are the Stanton photos telling us the same thing?*

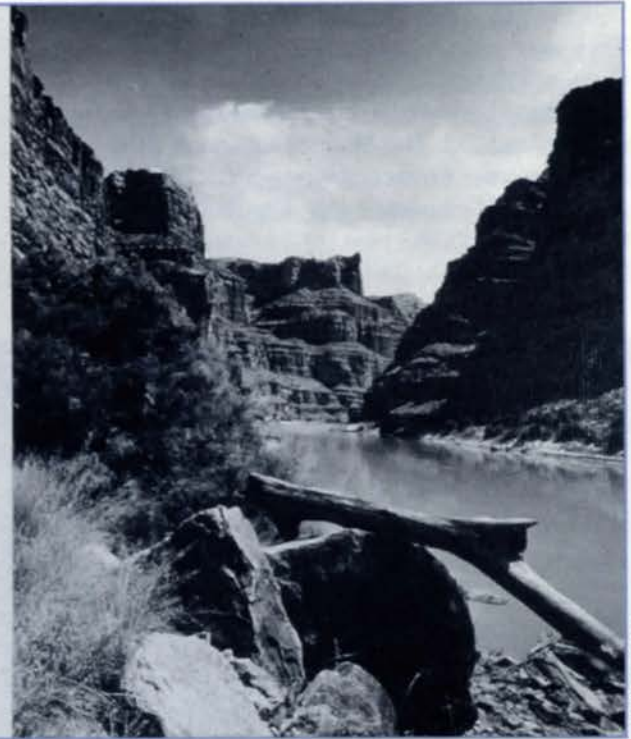
Somewhat to my surprise when I just looked at the frequency of changes from the Powell pictures, my estimate was that at any one place something catastrophic happens on order of about once every 500 or a thousand years. Somewhat to my surprise, they're finding from the Stanton photographs, and from more recent photographs, that in some of these side canyons the frequency of flooding—serious flooding and debris

flows, that build a major fan. Then you have smaller debris flows in between time, that make small modifications to that. The truly big fans in this section of the canyon probably are built with the frequency of about once every thousand years or so.

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I should mention that there were multiple purposes in the Grand Canyon part of our 1968 trip. We were doing a series of guide books. In fact, the guide book for this part of the Canyon, which was written by Simmons and Gaskill was one of those specific things. In addition, Tad Nichols and his son-in-law were along and Tad was taking photography specifically for a documentary on Powell, as a part of the Powell Centennial. So we were meeting a number of objectives on the trip in addition to Lee Silver's work with the sampling to study the crystalline precambrian





**Cataract Canyon.** Looking upstream, about a mile above Clearwater Canyon. Most of the foreground rocks were identified in Stephens' picture, but most on the far left are obscured by a tamarisk tree. The large driftwood log in Stephens' picture was a good twenty feet above water level, indicating a floodstage of at least this height since 1871.

rocks. One of the little amusing parts of getting the publications going on the guide books you might be interested in...the Powell Society really didn't have any money except what the members themselves, which was a very small group, might put in. So we were trying to figure out how to get the first guide book published. The idea was to get it published and to sell enough guide books that that would amortize the cost. Then we could publish the next guide book and get a whole bunch of them going. So someone came up with a bright idea. Might've been Henry Toll or Dave Gaskill, "Why don't we give a big public lecture on the trip?" So I agreed to do that, and they hired a big auditorium in Denver, the Phipps Auditorium. I had a whole set of slides worked up. They were the old three and a quarter by four lantern slides on glass. There were these great big projectors. And we filled the hall. We got a tremendous take. It worked! And I had this special set of slides that showed on one projector a picture taken by Beaman or Hillers. On the other projector it would be the matching photograph by Stephens. I told this story, that in most cases there was no change. You could see the same boulders sitting there on the river bank. Then in the small 15 percent case you could see dramatic changes. Then we finished the lecture with Stephens' movie that he had put together with the materials that he shot with this

small waterproof wind up motion picture camera that we carried down with us. So the lecture was a smashing success. We published the first guide book. But you know the funny thing is that lecture wouldn't die. I thought I had prepared that material for a one shot deal. And I kept on giving that lecture for years and years. It was so popular and people would see it at one place and word would get around, next thing I'd know they would want me to give it some place else. I kept on giving that lecture for twenty years.

*Your first trip through here was in 1968, when you were doing the Powell match up. But you started boating in the 1950s?*

I started boating in 1949 just with friends, you know. After 1951, Carolyn and I with other friends would run Cataract Canyon, or the San Juan or up through Flaming Gorge. In fact we spent some time getting around making sure we ran through all of the canyons before they disappeared under reservoirs. So we, for example, went back down the San Juan and the lower part of Glen Canyon the year just before the canyon was closed with the construction then. Say a last good-bye to it...

Working on the Colorado Plateau I knew the geology intimately, over a broad area. That's of course

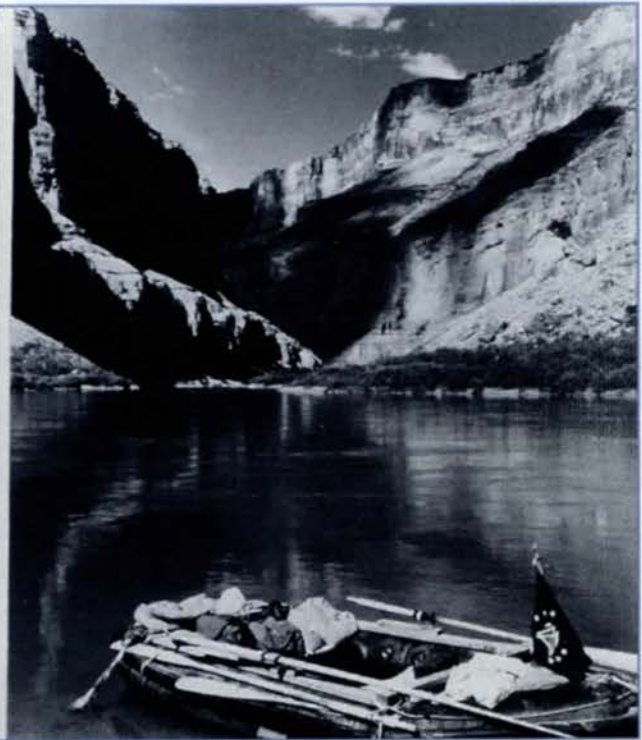


what made it possible. Having seen all the canyons and the upper part of the river system, and knowing the geology is really what made it feasible to do that 1968 trip, and know where to look, and get all the pictures sorted out. It turned out that the photographs were not very well identified. The photographs from the second Powell expedition had plates. These old classical wet plate photographs had gone into the USGS collection and never been systematically cataloged. There had been an album of prints made from these plates, but it was all mixed up with other things. It was something that was done in Jack Hillers' lab. Jack Hillers went on to become the chief photographer for the USGS when the Powell Survey was amalgamated with the other surveys in 1879. Hillers had those plates and they were just part of the survey collection. I would judge that it was about twenty years after the trip that someone sat down and tried to identify—and say oh yeah, this picture was from here and that was from there. My hunch is that Thompson did it, but I'm not sure. Thompson was really the guy in command of the river trip, most of the second Powell expedition, because Powell himself was off making trips back to Salt Lake City and working on logistics and things. Most of the captions were reasonably close. But you couldn't tell for sure where they were. Some cases they had the pictures on the wrong

river. So it was a task to sit down and figure out where these photographs were taken. Those were the first order of detective work. Having done all the previous boating on the rivers was a good head start to finding these things.... We didn't know how tough it would be. It turned out we hit our schedule right on the nose. There were a few we didn't catch. We realized we had gone past them and it was too late. Just a few in that case. We lost a couple prints in the river when we were running through a rapid or something. But we recovered most of the existing pictures. Actually there is a story about that collection itself that most people don't know. During the 1930s there was an edict that went out that the Government had to reduce its files. So a decision was made that the collection of negatives was going to have to be reduced in the USGS photo lab. Believe it or not they actually removed, presumably destroyed, some of the original plates from the Powell Expedition. The man that made that decision was Julian Sears, who was assistant director at the time. I have a hunch that those plates still exist somewhere. Can't imagine that they broke them, and threw them away. [laughs] But we did have prints, at least had the prints, even if the original negatives were gone. Some of the pictures that we published are just from those prints. The original plates don't exist anymore.



John Hillers



Hal Stephens

**Marble Canyon.** This view is looking upstream, just above the mouth of Little Nankowep Creek. The sand beach on the right is now fringed with tamarisk, but mesquite is growing at its top at the same level as in 1872.



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*What was [your first Glen Canyon trip] like?*

That was a total surprise. Our very first trip when we went down Glen Canyon, there were just two other companions with me. One was a young lady geologist, who was Doris Blackman. She is now Doris Weir, who I have known over the years. In fact she has just retired from the USGS. Another was a draftsman by the name of Ken Gardner. We all worked in the USGS offices in Grand Junction where the uranium exploration program was being carried out. We came down in Ken Gardner's home made car, made out of various pieces and parts of other vehicles. We called it the Gardner-Mobile. In fact there was a Gardner car. He actually had hubcaps that said Gardner on them. [laughs] We drove very slowly down North Wash and in those days there wasn't much of a road. Camped over night in the wash and ended up down at Hite—at the Ferry that was run by Art Chaffin. It was an interesting thing in itself, that old Ferry. We got down there fairly early in the day. So we had these two dinky little river boats from Sears Roebuck that we tied end to end. [One of those became known as the good ship Sink-well.] And Gardner was going to go along behind in the one boat, 'cause he only had one hand. He had sawed off his



Hite Ferry in 1950.

hand in a sawmill as a young man. He'd made his own hook and he could paddle that with a kayak paddle. With his hand and his hook. Doris and I were going to paddle up front, and that's the way we were going to go down this river. Well, Doris and I had paddled around a little on the Gunnison River. We had a pretty good idea how to do it. But we had never put these boats together and paddled with Gardner. We put the boats together and said "Well, let's take a little spin out in the river, out by the Ferry." And we dang

near didn't make it back to shore, because we were not coordinated.

Well we knew...Doris and I knew...a few hundred yards down the river and we'd get coordinated all right. But it scared the daylights out of Gardner, because his density was actually greater than water and he couldn't swim a stroke. He was deathly afraid of the water. So there we were, trying to persuade Ken that it was OK to go. And we went to bed that night



The good ship Sink-well in Glen Canyon. Looking upstream towards the mouth of Lake Canyon, 1949.

thinking "Well, the river trip is over because Gardner isn't going to go with us." We woke up the next morning and here comes a row boat, down the river. Turned out there had been a party that camped at the mouth of North Wash about five miles upstream that night, unbeknownst to us. This fellow pulls in at the Ferry to talk to Chaffin, and we go out to find out who it is. And it's Bert Loper. Turns out he is leading a whole troop of boy scouts—about 50 boy scouts—coming down the river. They weren't there yet. They were coming behind him. When Gardner found out who it was and we learned what he was going to do, we persuaded Ken that if we got the boats packed up and got ahead of Loper, that he would be safe. So that's what we did. [laughs] We packed up and got out there on the river ahead of Loper and the boy scouts. And that's how we got launched on the river. We pretty much stayed ahead of Loper until we got down to Rainbow Bottom, at the mouth of Aztec Creek, where you used to hike up to Rainbow Bridge. We were hiking up then and we had a pretty good visit with Loper there. Then we learned that his plans were to join his friends at Lees Ferry, and continue on down the Grand at that time. Part of the story was that Loper had gone down the Grand Canyon ten years before...and they'd made a pact with each other that if Loper lived to be 80 years old they would do it



again. And this was the time. In fact Loper would've been 80 in the Canyon if he had made it on down. We of course pulled out at Lees Ferry and drove home to Grand Junction. But Loper and his friends came on down.

*That was the one [Loper's last trip]?*

Yes.

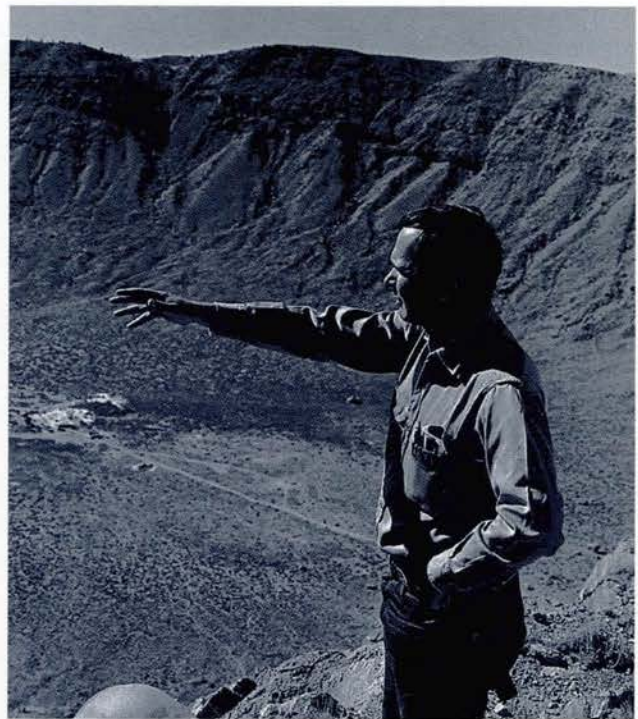
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*Well...how old do you think the Canyon is?*

I have very strong prejudices about that because I've worked in the upper end of the system, in particular the Little Colorado River Valley. Worked on the Bidahochee Formation. I'm confident there was a through-flowing stream going west, or north-west, across the Kaibab Uplift in Miocene time, but it was not connected to the lower part of the Canyon, that's clear. The lower part of the Canyon can not be much older than about four million years. But there was the beginning of the cutting of the river as it crosses the Kaibab uplift, at the nose of the Kaibab Plateau, which is much older. I think there was an integrated drainage system. There was a Colorado River System with its tributaries that was probably here on the Plateau, sort of in the configuration that you see now, going all the way back to the beginning of Oligocene time about 30 million years ago. But the river clearly didn't go out through where the lower Colorado does now. It must've crossed, I believe, over the Basin-and-Range province and emptied into the Pacific somewhere along the latitude of northern California now. You know...that's still an open story. But the upper part of the Colorado was then captured by the lower Colorado working up from the Gulf of California, which is a very young feature geologically, in the last four million years.

*What turned you toward Astronomy?*

I got into Astronomy through the back door. I was interested in the idea of going to the moon. In fact this idea came to me rather suddenly in 1948, shortly after I joined the Geological Survey. I had been a student at Cal Tech and was familiar with the development of rockets that had been going on at the Jet Propulsion Laboratory...and that they were flying these rockets as upper stages on the captured German V-2s. I just got to thinking about that. "You know, they're going to go to the moon in my professional lifetime. They are going to send human beings to the moon." I made up my mind right then and there that I



*Gene Shoemaker at Meteor Crater, 1963.*

was going to be standing at the head of the line when the time came for scientists to be chosen as lunar explorers. This was ten years before NASA was founded. I just simply took those turns in the road that I thought would lead me to being the best prepared field geologist to go study the moon. I had an opportunity to go study Meteor Crater, Arizona. I had been working on volcanic craters at the Hopi Buttes, which in fact have forms that are rather similar to some of the smaller lunar craters. I thought I ought to be working on impact craters as well, so I did seize that opportunity. Having worked on an impact crater, the first question a geologist asks is, "Well, how often does this kind of thing happen? What is out there? What kind of bullets are out there that hit the earth that make craters?" I immediately made it my business to find out what was known about earth-crossing asteroids at the time. There wasn't a lot. In fact there were about eight of them known at the time I worked out at Meteor Crater. In fact, most of them had been lost. Only a few of them had well determined orbits. In the meantime the lunar program did come along. As it turned out, I didn't become an astronaut because my adrenal cortex failed just a couple years before scientists were chosen. I ended up chairing the National Academy's ad hoc selection committee instead of being one of the guys standing in line. But that wasn't the reason for getting deeply into studying the geology of the moon...I started a lunar geologic mapping program, in the USGS, funded by NASA, and we



continued to study craters. It was important to study craters to be able to interpret what we were seeing on the moon. So my first involvement with telescopes was actually in working on lunar geology, 'cause we had to go to the telescope to get higher resolution than was available in even the very best telescopic photographs we could work from. In fact, I had a telescope built, near Flagstaff on Anderson Mesa, where we carried out part of that program of observations to work out the critical details for unraveling the stratigraphy of the lunar surface. So that was sort of my first direct involvement with telescopes. Later when I went to Cal Tech to become the Chairman of the Division of Geological Planetary Sciences, I hired a young woman to work with me by the name of Elenore Helin [Bruce (from PRO) Helin's mom]. I set her on the task of tracking down every scrap of information we could find about the discovered earth-crossing asteroids. I'd seen an opportunity to work on that problem. It turned out there were only thirteen that had been discovered by that time, all of them just accidentally. We finally decided that the best way to get any further knowledge was to go search for them

ourselves. So I started a program and Helin actually carried out most of the observations with a small Schmidt telescope on Palomar Mountain, where time was available to do the work. It turned out to be an ideally suited telescope for the work, so being at Cal Tech was an important step in having been able to start that. That started in 1973 and ended in 1983. Then Carolyn and I started an observing program on Palomar, and this year will basically be our last year of work on that telescope. So it's work that has been carried on for more than 20 years.

*It's hard to fathom all that stuff going on out there. Just to think about...trying to figure out what's going on as far as out there as Jupiter. Did your comet really make a big bang when it hit? [Refers to the Shoemaker-Levy Comet which collided with Jupiter in July of 1994.]*

The comet did its thing at Jupiter. All these years, you know I've kind of had a daydream...it would sure be fun to see a real impact in my lifetime. They are rare enough that the odds of that weren't very high. Of course I rather imagined, maybe, it'd be a small asteroid that would hit the earth maybe deep in the outback of Australia where nobody would get hurt, and I'd rush over and map the crater. If I'd really thought about it, I would've realized that if I were going to see any impact of a comet or an asteroid during my lifetime, the most likely case would be Jupiter, because the frequency of impact on Jupiter exceeds the frequency on any other planet. Partly because it's bigger, it has a very large gravitational field of influence. So it focuses the flux of comets onto it. But I hadn't really gone through that calculation. This was really a daydream. So it was a matter of extraordinary good fortune that we actually discovered a comet in 1993, in March. First of all it was broken up. It had gotten so close to Jupiter, it had been pulled apart in Jupiter's gravitational field. Then we learned, with further tracking by many observatories around the world, that this object was in orbit around Jupiter. And finally it became clear it was going to actually hit Jupiter when it came back to its closest approach to Jupiter. That was all just an *incredible* series of surprises. Then of course, we're trying to figure out, "Well, what's really going to happen?" Many people worked on this problem. There was a wide range of opinions. Some people said "Oh, we're not going to see anything at all. Those comets are going to disappear without a trace." I was pretty sure we were going to see some results that we could resolve with the telescope. In fact with colleagues, we obtained calculations of the

Carolyn Shoemaker, David Levy and Eugene Shoemaker in front of 18-inch Schmidt dome at Palomar.  
Photo by Ted Mellis.





plume that's produced by the hot fireball generated by the impact—how high it would rise, how long it would take, how far it would spread out. Those calculations were finished only about a week before the first impact. It would've been sooner but we had trouble getting the funding to do the work. [laughs] Finally National Science Foundation decided, well, I'd been co-discoverer of the comet...it would be kind of a shame if they didn't give us a little funding to work on it too. So we finally got our calculations done late. But I was absolutely delighted because the first nucleus that hit Jupiter produced a plume that we could see on the edge of the planet with the Hubble Space Telescope. It was very close to the plume that we'd calculated. At that point I knew we were going to really see something!

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*I used to be really kinda proud of being a boatman and living down here and being tapped into all this cosmic awareness that you get, just from contemplating the canyon and the amount of time that's involved here. You know, if you buy into the standard geologic line. But it wasn't until I took some astronomers down that it really jerked my head up, to think of people who are looking way, way out there. Where does boating fit into a life as varied as yours? Where do this river and river running fit in?*

The world's a tremendously interesting place. There are so many interesting problems, but for me, I really cut my professional geological teeth on the Colorado Plateau. It's been my geological backyard for 45 years, and it's a geologist's paradise. There is no other way to describe it. Rocks are exposed here in a way that you just rarely find anywhere else in the world—a tremendous variety of things to work on and fantastic scenery to go with it. So it's an old love that keeps tugging me back, while I may have my head off in the stars somewhere or the planets and comets, moons, asteroids, it's important to come back and bang on rocks. I still consider myself a rock-knocking geologist. In fact, I'm still doing regular field work in Australia, mapping impact craters there. Coming back to the canyon country and especially the Grand Canyon is just sort of a rejuvenation, gets your geological juices flowing again. There are a whole series of problems down here that have not been solved. I look at them as I go down, and a couple of them I've actually started to work on. But I've got so many irons in the fire, it's hard to finish them.

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[On the '68 trip] down the upper canyons on the Green and the Colorado, I had this arrangement worked out with a group of guys who called themselves the

Powell Society in Denver. And the mainspring in that Society was a forensic pathologist by the name of Henry Toll. They had incorporated themselves as a non-profit outfit to make themselves official and they went around and did the same thing I'd been doing with friends: going down these various canyons before they turned the water off and they started building a dam. But they had had some experience and most of the Powell Society guys had been down the Grand Canyon several times, and I was glad to have them go along. Then we got here and we had several more boats. I'd just brought two assault boats down the river from Wyoming, but down here the Powell Society guys brought some more boats. So, we actually ran four boats down the river, and put two people in each boat. We just had them rigged with rowing frames. No, I'm sorry, we had five boats. We started off and I said "I'm in good hands." Here are these old hands on the Grand Canyon. I'd never been down the Grand Canyon myself.

We got to Badger Rapid and we all got out there on the right bank and looked it over. "Ok, let's go run it." We ran most of the boats down and I looked back up and here was a boat flipped in Badger. I won't tell you who it was. I thought "Well, ok, these are experienced river runners. What have I got myself into here?" We got down to Soap Creek and flipped another boat! "Oh, boy this is going to be some trip." [laughs] Actually the second was really a kind of a fluke flip. It was just one of those things that happens to you, catching the curl of the wave in the tail waves. Things settled down after that. We did flip one more boat down at Crystal. By that time Crystal was pretty mean. It was a hard one to get through. We ran all the boats through successfully, except the first one. We had a great bunch of guys. I had with me, in addition to the Powell Society, Leon T. Silver, who was professor at Cal Tech, who was the real expert on the crystalline precambrian rocks—the older precambrian rocks in the Grand Canyon. He had been working with the samples that had been collected by a Cal Tech/Carnegie Institution trip. In fact I think there was more than one trip, in the late 1930s. He'd come in by helicopter and collected additional samples, but he had never been down the river. This was the time for him to see the river, and he really, thoroughly enjoyed it. And he started collecting like mad. And he took *big* samples. Well, he was loading most of these samples on the boat that was rowed by Henry Toll. This was just a ten man assault boat. This boat was getting heavy and heavier. It was just darn near getting unmanageable.

Toll was undoubtedly the best boatman. He was good. Well, we are camped at the mouth of Tapeats Creek and as we're camped there we see a commercial trip coming in. If I remember right, I think it was Sanderson. And we discover it's a Barry Goldwater party, on the boat. It was not Barry Goldwater Senior, it was



Barry Goldwater Junior in the party. They pulled in on river left about a mile downstream. Silver gets to thinking about this. We've got a good boat there. I think Toll knew the boatmen running the boat. "Maybe they can get those guys to carry out these rocks!" So early the next morning we all stood on the bank and Toll and Silver took off to go on down the river, row across and go talk to the Barry Goldwater party. And it turned out that Toll pulled just one of his very rare boo-boos. He went over a little bit of a drop over a rock. Silver was sitting on the back of the boat and just tumbled right out. 'Course it wasn't any heavy water or anything and he scrambles right back on. They row over there and Silver strides out of the boat, of course, dripping wet. Walks up to Barry Goldwater, pulls out his card, hands it to Goldwater and introduces himself. [laughs] Goldwater says "Well, I like to do business with a man who bathes before breakfast." Actually they did talk them into hauling out most of those samples for Silver. Took them on downstream for us.

*Oh man...did you worry on that trip? How did it feel to get to the bottom? Did you worry about Lava [Falls] and all that stuff?*

Nah, I didn't worry too much about the rapids. 'Course I hadn't seen all these rapids before.

*Were you running a boat?*

Sure, running my own boat. In fact I had George Anderman with me. He and I jointly owned this boat for years, and boated together. And he hiked down the Kaibab trail and joined us at Phantom Ranch. Yeah, we looked over Lava, it looked pretty scary, not having run it before. In fact a couple of guys lined their boats down. Elected not to run. And I was glad they did. About that time Bruce Julian who had actually flipped one of the boats up at Soap Creek, knew a good line through Lava. And he ran it perfectly. We watched him go and I thought I could hit that line too. But it was very hard to see that exact spot upstream as you know...don't know exactly where to go and it drops

off so fast. I missed it by about four or five feet. It dropped right into a hole. Got trapped in this hole—boat just stopped. I lost Anderman instantly. He hung on with all his might onto the rowing frame, but just peeled right off into the rapid. There I was, and the boat was just slamming around and all my bags that I had tied down carefully were starting to come loose. The oars were flailing around at that point. I thought I better get out of this boat before I get pinned in it. I just worried that if it flipped over I might get stuck in the boat. So I got out. And just about that time the boat popped out of the hole. Boat never did flip over. It went over the big wave down at the bottom. Stayed upright all the way and I went through in my life preserver. Which is a non-recommended way to run Lava. I've never yet flipped a boat on the river. But I have had a few episodes.

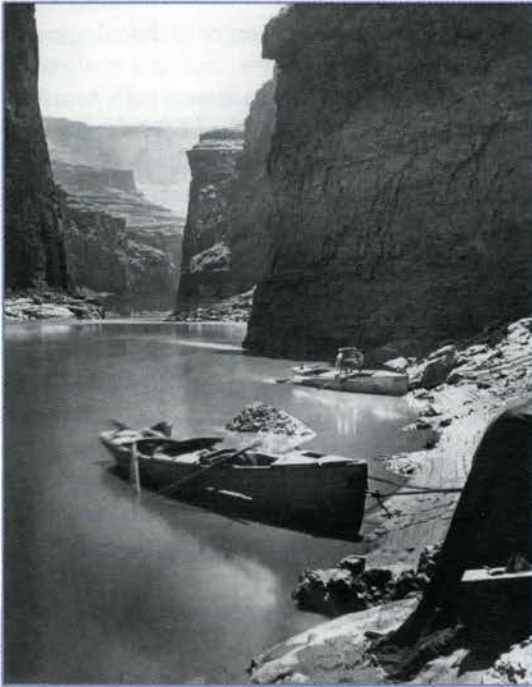


No Worries. Gene Shoemaker on the "Old Timer's Trip." Colorado River, 1994.

*Photos courtesy of Carolyn Shoemaker and Bob Webb.*



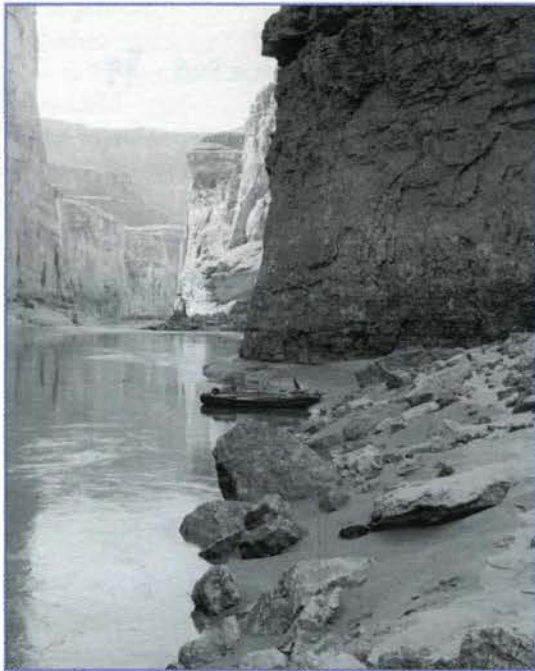
## The Photo Matching Legacy Continues



John K. Hillers, photographer of the 2nd Powell Expedition, captured this view at about mile 33 (right bank, view downstream) showing the two expedition boats, one with the Major's chair strapped to the mid-ship deck. The water level in September 1872 was fairly high (around 30,000 cfs).



Shoemaker and Stephens weren't the first to match this view. The Kolbs used Powell's book as a river guide and matched this view in November 1911. Water levels were low, and the large rock in the eddy is out of water. Sand lines the river's banks in abundance.



Stephens matched Hillers' view, again at lower water and with one of the Stephens and Shoemaker boats in the position of Powell's boat. Glen Canyon Dam had operated for 5 years before this September 1968 photograph was taken.



Tamarisk grows amongst the exposed boulders at the site in 1995. Both changes probably are the result of operations of Glen Canyon Dam. Photo by Bob Webb.



## Book Review

*"Day Hikes from the River:  
A Guide to 75 Hikes from Camps on the Colorado River  
in Grand Canyon National Park"*  
by Tom Martin

JUST WHEN IT SEEMED all possible tomes about Grand Canyon had been published, along comes another book from our intrepid community to fill a specific niche in the Ditch. Tom Martin, co-founder of the Grand Canyon Private Boaters Association has penned a guidebook rich with hikes accessible only by river runners, the first of its kind. The author offers up his considerable experience in Grand Canyon with enthusiasm for the topic and concern for hikers' safety and pleasure. He covers most of the shorter favorites along with daylong treks to less frequented destinations. Hike descriptions include handy advice on tricky pull-ins, handy camps, courtesy issues, seasonal variations, sun versus shade, historical tidbits, viewpoints, obstacles and alternate routes. However, the book falls a bit short in other key areas. Trails are characterized as either "easy, difficult, or very difficult", leading the author to rank North Canyon and Buck Farm in the same category as the Tabernacle. Trail descriptions do not include easy-to-find summaries of distance, time commitment and difficulty. There are no photos and the maps are crude and sometimes difficult to read. The book suffers from some bad grammar and poor editing. While Martin does review care of the Canyon, more discussion is needed in the opening

sections regarding protection of archaeological sites, wildlife, off-limits campsites, multiple trailing, flash-floods and what to do when nature calls (some of this is covered in the individual hike descriptions, but most readers will not tackle the book cover to cover). Though he is good on human history, Martin often misses the opportunity to add detailed descriptions of the natural oddities and wonders that make Grand Canyon hiking so wonderful—what the heck is a nautiloid and why are there some many exposed at River Mile 34.75L? There is no mention of the cool stromatolite at the top of the Carbon-Chuar Loop or description of its amazing exposed faults and rock layers not visible from the river (none of this is obvious to most Canyon amateurs). The primary market for this book is private river runners, many of whom will not have Martin's in-depth knowledge and would enjoy these tidbits. In Grand Canyon, the more you know about something, the more you appreciate it.

Overall, Martin's book is a useful volume to tuck into your dog-eared boat library, whether you are a seasoned runner or taking your first trip, private boater or professional guide. Even those on a 30-day winter trip will find plenty to choose from, along with resourceful advice. If you are plotting some longer day-hikes, detailed topographic maps would be helpful companions to the guide.

BQR Staff 

## Some People Just Don't Get It

"I'd say someone is jealous of a good time being had on the Bitterroot River in Montana."

*Skip Horner*



Skip Horner



## A Huge Thank You (to you, and you, and you)

**T**HE RESPONSE to our year-end fundraising effort on behalf of Grand Canyon River Guides (GCRG), Inc. and our many programs has garnered such an overwhelming response that we felt compelled to tell you about it. We've already exceeded last year's amount and now have over \$6,800 in donations! What a way to launch GCRG into 2000. We'd like to take this opportunity to thank each and every one of you personally so we'll take a stab at listing you here (those we've heard from to date that is!). If you're not listed it probably means it hasn't gotten to us as of this writing (it takes a long time to publish a newsletter, you know!). We of course apologize to anyone we may have inadvertently missed. Our sincere and deep appreciation goes out to:

Anonymous (you know who you are!)

Barbara & Phil Albright

Steve Asadorian

Tim Begue

Noel Eberz

Pat & Roger Essick

Mary Gratton

Robert Hirsh

Denise Hudson

Steve Jellinek

Ed Jodice

Jane & Robert Katz

Gary Ladd

Gwen Moody

Betsy Newcomer

Gloria Pfeif

Drummond Pike

Margaret Pratley

Marji Robinson

Larry Schmelzla

Thomas & Jane Schwenk

Merion Sharp

Fred St. Goar

Walt Taylor

Marja Tenney

Ellen Voorhees

Ken Wright

And while, we're in the thank-you mode, there are a few other incredibly generous folks or organizations we should mention. Major contributions were also recently received from David Hinshaw, from the Chehalis Fund of the Tides Foundation (on the

recommendation of GCRG member, Drummond Pike as listed above), from the Brown Foundation and from Newman's Own Organics. We've also received wonderful news of pending support from the Grand Canyon Conservation Fund for our Guides Training Seminar, Adopt-a-Beach program and Adaptive Management program participation and from the Grand Canyon Monitoring & Research Center for our Adopt-a-Beach program. We also want to take this opportunity to thank all of you who have supported us with your memberships, contributions and volunteer labor throughout the year.

And last but not least, we sent out a letter last fall to members who had let their GCRG memberships lapse (inadvertently, we're sure!), or those who were simply "non-members" asking them to join. We've been sending out the newsletter to these folks all this time regardless of their status and have gotten to the point where we just can't do it any more. Harsh reality overshadowed our good intentions as the number of people in those categories grew (especially the expired members!). Fortunately, as a response, we've gained over 100 new members. We're so glad to have you back on board! It was heartening, to say the least, to see many long-time expired or non-members join as GCRG life members! The point of this is that membership dues matter tremendously. They are, in fact, our biggest single source of income. So, if you want to stay involved and informed about the Canyon, send your dues in when you get that renewal notice in the mail. It's vastly important to GCRG and to the overall health of our organization!

Our sincere appreciation goes out to *all* of you who continue to support GCRG and our ongoing efforts to protect Grand Canyon and its magic. Our warmest and best wishes for a wonderful New Year.

Lynn Hamilton  
Secretary/Treasurer





## GTS 2000 — Guides Just Wanna Have Fun! (and learn something, too)

**A**ND SO DO OUTFITTERS, as seen in this photo from the record-breaking 1999 GTS. La Niña has been kind to us for both 1999 meetings, spring in Marble Canyon and fall in Kanab. Maybe the "Little Girl" will hold off again for another weekend in April, since we've already begun this winter with a less-than-average snowpack in the Colorado River Basin.

Jane and Don Foster and the gang at Marble Canyon Lodge, with open arms and hearts, have kindly consented to our return and allow us to use their Old Lodge, once again, for this year's shebang. Many and diverse speakers have been invited, promising that this year's multi-disciplinary GTS will be as informative and varied as last year's. And because John Blaustein's slide show was so much fun, photographers Gary Ladd and C.C. Lockwood will dazzle and amuse us with some incredible views.



Outfitters...Mike Denoyer-GCE, Garrett Schniewind-CanX2, Rob Elliott-AZRA, and Les Hibbert-Diamond.

- GCRG Spring Meeting (Nominations for VP and Board of Directors) — *Friday, March 31*
- GTS Land Session — *Sat/Sun, April 1 & 2*
- Adopt-a-Highway clean-up and rig-day — *Monday, April 3*
- GTS River Session, upper — *Tue-Mon, April 4-10*
- GTS River Session, lower — *Mon-Tue, April 10-18*

The Land Session is open to all GCRG members, general as well as guide, to any interested folks of the boating community (yes, even Outfitters), and the general public. The River Session is open to guides and trainees who have work for the upcoming season in Grand Canyon. Look for the GTS announcement flyer in your mailbox for more details.

Richard Quartaroli



## Grand Canyon Youth Website

**I**NFORMATION on Grand Canyon Youth can now be found at [www.grandcanyon youth.org](http://www.grandcanyon youth.org). The updated website now has the year 2000 schedule and the preliminary application online. There are still a few spots available for the year 2000 trips, spread the word to interested youths!

John Middendorf

## Downstream News

John O'Brien and Sheila Mackell gave birth to Devin Alexandra O'Brien on January 8, 2000. She was born at 6:04 A.M., weighing 7 lbs, at 20.75 inches. Mother and daughter are doing fine.



## Whale Foundation: Think About It—Talk About It—Don't Flip

**I**T'S NEVER EASY TO ADMIT that you have a problem. No one wants to go to "the doctor." Getting help when you need it is not a sign of weakness, it is not a sign that the "party is over," or that it's time to "grow up," not a cry for help, or asking for a helping hand. It is the realization that you are in the middle of a bad run. Maybe your problem is your drinking, drugs, depression, your guy or your girl, the company you keep or the company you work for. Don't go it alone. But remember it's your boat, grab hold of your oars or get your motor started, straighten it out before you flip. Talking with a friend can be your best source of feedback. If you can't find a friend, call The Whale Foundation help line at (520) 773-0773. All calls are confidential. It's not a sign of weakness. It's friends you can talk to. Avoiding the problem isn't going to make it go away. Getting drunk, angry and calling someone in the middle of the night to bitch them out isn't a solution; it's a sign that you really do need help. Don't make your friends watch you run until you hit the fence. One of the most helpless feelings that exists is watching a friend go under and feeling as though there is nothing that can be done to help. The truth is, if you need help, it's up to you to take that first step. Deal with it. Talking with someone about what is bringing you down can help. You are not alone.

To donate to or find out more about The Whale Foundation, write:

The Whale Foundation  
7890 S. Ave. Bonita  
Tucson, AZ 85747

Check Out The Whale Foundation online at:  
[www.thewhaler.org](http://www.thewhaler.org) or call : (520) 661-8739.  
The Whale Foundation help line: (520) 773-0773.  
All calls are confidential.

*Bob Grusy*

## Announcements

### **Kayak Pool Sessions:**

The pool at Flagstaff High School is open from 7:30 to 9:30 pm Monday evenings, except the first Monday of the month, for roll practice. It is a very informal group, with everyone chipping-in a few dollars to cover pool rental and life guard fees. There are usually people willing to help new boaters, and are often a couple of extra boats to use, so come on by. For more information contact Bill Bishop at (520) 779-0105.

### **First Annual GCRG Garage Sale/Auction!!**

Calling all river guides, outfitters and general members! Bring your used (but not trashed) river / camping / big ticket items to the GCRG office and donate it for a good cause: making money to keep GCRG afloat (no pun intended) so we can keep working to address guide-related issues and make the Canyon the best it can be! Your donated items may be tax deductible—please check with your tax advisor. All proceeds will go directly to fund GCRG operations (such as publication of certain newsletters...hint, hint). Please don't bring us all the junk you've been trying to get out of your closets for years; instead, bring us stuff you no longer need or use (furniture, appliances, and the aforementioned river gear) that you think might fetch us a pretty penny. Also, a special plea to the artists among us: if you are so inclined, we'd love to auction off a piece or two of your work (signed, of course!), if you are able to donate! No definitive date has been set, but we're looking at the end of April or beginning of May...a final date will be published in the upcoming BQR. You might call Lynn at GCRG if you have really big stuff before you haul it over, just in case the garage behind the office is already full of items from other generous benefactors! Start going through your stuff today!

### **Lost:**

50 cal ammo can with teal box and white lid. The contents included a Minolta X-700 camera, two lenses (a 28mm and a 75-200mm zoom), at least one spent roll of Lava shots on a Can-X trip, flash, and miscellaneous small stuff. The can was last seen at Diamond Creek during the takeout of a Can-X trip on September 7. Please contact Charly Heavenrich at (303) 545-5414.



## Businesses Offering Support

Thanks to the businesses that like to show their support for GCRG by offering varying discounts to members.

<b>Canyon Supply</b> Boating Gear 505 N. Beaver St. Flagstaff	779-0624	<b>Design and Sales Publishing Company</b> Laminated ammo-sized geology guides www.edu-source.com/fieldguide.html	520/774-2147
<b>The Summit</b> Boating equipment	774-0724	<b>River Art &amp; Mud Gallery</b> River folk art 720 S. River Rd. Suite A-114, St. George, UT	801/674-1444 84790
<b>Chums/Hellowear</b> Chums and Hello clothing. Call Lori for catalog	800/323-3707	<b>Marble Canyon Lodge</b> Lodging and trading post merchandise, Marble Canyon, AZ	355-2225
<b>Mountain Sports</b> River related items 1800 S. Milton Rd. Flagstaff	779-5156	<b>Cliff Dwellers Lodge, AZ</b> Lodging and store merchandise (excluding tobacco, alcohol & gas)	355-2228
<b>Aspen Sports</b> Outdoor gear 15 N San Francisco St, Flagstaff	779-1935	<b>Mary Ellen Arndorfer, CPA</b> Taxes 230 Buffalo Trail, Flagstaff, AZ 86001	525-2585
<b>Teva Sport Sandals and Clothing</b>	779-5938	<b>Trebon &amp; Fine</b> Attorneys at law 308 N. Agassiz, Flagstaff	779-1713
<b>Sunrise Leather</b> , Paul Harris Birkenstock sandals. Call for catalog.	800/999-2575	<b>Laughing Bird Adventures</b> Box 332, Olga. WA 98279 Sea kayaking tours Belize, Baja and Hawaii.	503/621-1167
<b>River Rat Raft and Bike</b> Bikes and boats 4053 Pennsylvania Ave. Fair Oaks, CA	916/966-6777 95628	<b>North Star Adventures</b> Alaska & Baja trips Box 1724 Flagstaff	800/258-8434 86002
<b>Professional River Outfitters</b> Equip. rentals Box 635 Flagstaff, AZ 86002	779-1512	<b>Chimneys Southwest</b> Chimney sweeping 166 N. Gunsmoke Pass, Kanab, UT	801/644-5705 84741
<b>Canyon R.E.O.</b> River equipment rental Box 3493, Flagstaff, AZ 86003	774-3377	<b>Rescue Specialists</b> Wilderness Medicine, Swiftwater Rescue, Avalanche & Ropework Box 224, Leavenworth, WA 98826 www.rescuespec.com	509/548-7875
<b>The Dory Connection</b> Dory rental 823 1/2 W. Aspen #4, Flagstaff, AZ 86001	773-1008	<b>Rubicon Adventures</b> Mobile CPR & 1st aid Box 517, Forestville, CA 95436 rub_cpr@metro.net	707/887-2452
<b>Winter Sun</b> Indian art & herbal medicine 107 N. San Francisco Suite #1, Flagstaff	774-2884	<b>Vertical Relief Climbing Center</b> 205 S. San Francisco St., Flagstaff	556-9909
<b>Mountain Angels Trading Co.</b> River jewelry, call for catalog. www.mountainangels.com Box 4225, Ketchum, ID 83340	800/808-9787	<b>Fretwater Press</b> Buzz Holmstrom biography Discount to guides. www.fretwater.com	774-8853
<b>Terri Merz, MFT</b> 1850 East Flamingo Road #137 Las Vegas, NV 89119 Individual/Couples/Family counselling. Depression/Anxiety	702/892-0511	<b>Randy Rohrig</b> Casitas by the beach for rent in Rocky Point.	526-5340
<b>Dr. Jim Marzolf, DDS</b> Dentist 1419 N. Beaver Street, Flagstaff, AZ	779-2393	<b>Dr. Mark Falcon</b> Chiropractor 1515 N.Main, Flagstaff	779-2742
<b>Snook's Chiropractic</b> Baderville, Flagstaff	779-4344	<b>Willow Creek Books</b> Coffee and Outdoor Gear 263 S. 100 E. St., Kanab, UT	801/644-8884
<b>Fran Sarena, NCMT</b> , Swedish, Deep Tissue, & Reiki Master	773-1072	<b>KC Publications: The Story Behind the Scenery</b> Books on National Parks Box 94558, NV 89193-4558. www.kcpublications.com	800/626-9673
<b>Five Quail Books—West</b> River books 8540 N Central Ave, #27, Phoenix	602/861-0548	<b>Roberta Motter, CPA</b> Taxes and Personal Financial Planning 316 East Birch Ave., Flagstaff, AZ 86001	520/774-8078
<b>Canyon Books</b> Canyon and River books Box 3207, Flagstaff, AZ 86003	779-0105		
<b>River Gardens Rare Books</b> First editions 720 S. River Rd. Suite A-114, St. George, UT	801/674-1444 84790		
<b>ERA Conley Realty</b> 123 W. Birch Ave., Suite 106, Flagstaff	774-4100		



# Wilderness First Aid Courses 2000

**Wilderness Advanced First Aid (WAFA) Date: March 23-27, 2000 (5 days)**

Cost: \$285

**Wilderness Review Course Date: March 28-30, 2000 (2 1/2 days)**

Prerequisite: Must be current WFR, WEMT, WAFA or Review by Wilderness Medical Associates (WMA)

(If your previous course was not with WMA you'll need to make special arrangements.)

Cost: \$165

GCRG reserves the right to cancel any classes due to insufficient enrollment.

**Place:** Arizona River Runners (ARR) warehouse, Flagstaff, AZ.

**Lodging:** On your own. Camping in the ARR warehouse is ok.

**Meals:** On your own.

Both courses include 2-year CPR certification.

Class size is strictly limited. Guides and private boaters welcome. Send your \$50 nonrefundable deposit with the application below to Grand Canyon River Guides to hold a space. The courses are already filling, so act now.

Circle One:	WAFA	Review Course
Name	_____	
Address	_____	
City	State	Zip
_____	_____	_____
Phone (important!)	Outfitter	_____
_____	_____	_____
Guiding since	# Trips	Type of current first aid
_____	_____	_____

## Care to join us?

**I**F YOU'RE NOT A MEMBER YET and would like to be, or if your membership has lapsed, get with the program! Your membership dues help fund many of the worthwhile projects we are pursuing. And you get this fine journal to boot. Do it today. **We are a 501(c)(3) tax deductible non-profit organization, so send lots of money!**

<p><b>General Member</b>                  Must love the Grand Canyon                  Been on a trip? _____                  With whom? _____</p>	<p>\$25 1-year membership                  \$100 5-year membership                  \$277 Life membership (A buck a mile)                  \$500 Benefactor*                  \$1000 Patron (A grand, get it?)*</p>	<p>We don't exchange mailing lists with anyone. Period.</p>
<p><b>Guide Member</b>                  Must have worked in the River Industry                  Company? _____                  Year Began? _____                  Number of trips? _____</p>	<p>*benefactors and patrons get a life membership, a silver split twig figurine pendant, and our undying gratitude.                  \$100 Adopt your very own Beach: _____                  \$_____ donation, for all the stuff you do.</p>	
<p>Name _____                  Address _____                  City _____ State _____ Zip _____                  Phone _____</p>	<p>\$16 Short sleeved T-shirt      Size _____                  \$18 Long sleeved T-shirt      Size _____                  \$24 Wallace Beery shirt      Size _____                  \$10 Baseball Cap                  \$10 Kent Frost Poster (Dugald Bremner photo)                  Total enclosed _____</p>	



