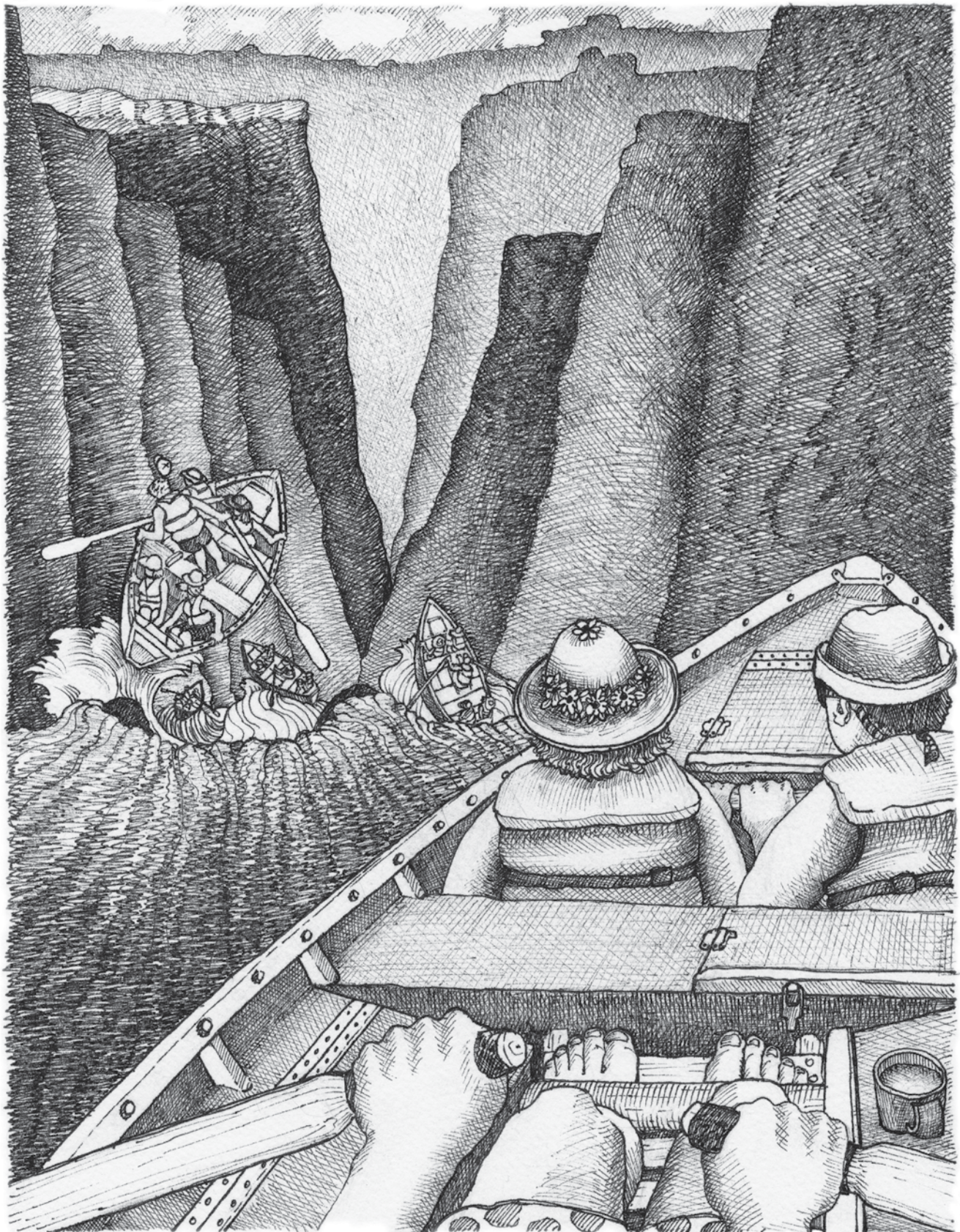




# boatman's quarterly review

the journal of  
Grand Canyon River Guides, Inc  
volume 14 number 2  
summer 2001

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Ellen Tibbetts



## 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, drawings, 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 we can translate most programs. Include postpaid return envelope if you want your disk or submission returned.

Deadlines for submissions are the 1st of February, May, August and November. Thanks.

Our office location: 515 West Birch, Flagstaff, AZ 86001

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## Get Your New GCRG T-Shirt

THE NEW GCRG T-SHIRTS are in and are they ever cool! These 100% cotton, garment-washed Ts look and feel like they've already been broken in. We have both long and short sleeve shirts in a variety of really great colors. The front and back designs are printed in black on all shirts. You're gonna want one in each color!

Drawn by Sam Jones, the design depicts Powell's party running the river, with the quote by J.W. himself that inspired the illustration.

The long sleeved Ts come in colors called brick, mocha and willow and cost \$18. The short sleeves come in yam, bay and khaki and cost \$16. Both prices include shipping. The colors of both shirts are limited so please list first, second, and third choices or don't specify at all and we'll just send you what we have on hand.



FRONT

Grand Canyon River Guides



"The book is open, and I can read it as I run"

BACK

## Rambling On

**T**HE SPRING MEETING (not to be confused with the GTS), was an informal gathering held on the lawn behind the old Marble Canyon Lodge. As usual, only the hard-core true believers showed up. What was unusual was that the weather was actually nice, verging on hot and sunny. We all sat around on the lawn and picnic tables and reminisced a little and discussed what GCRG should do next. The oft-repeated question of how to increase guide membership was raised again, as was the issue of how best to advocate guide concerns through GCRG. As most of you probably know, since we are a 501(c)(3) organization, our primary emphasis has to be preserving and protecting the Grand Canyon and the experience it offers. In that vein, we serve as guardians of the experience against the onslaught of ever-increasing demand and bureaucratic regulation. This is and must remain our number one priority. But how can we combine our role as “canyon experience protectors” with our desire to also serve as advocates for guide-related issues? While our very visible presence already benefits guides in more ways than we get credit for, we could do more. One option for addressing these complementary issues is to establish a Guides’ Advisory Panel (GAP) in each company. The panel, which would consist of guide members acting in concert with their particular outfitters’ management, could function as a liaison between guides and management, serving as a non-confrontational means of conveying guides’ concerns to management on issues ranging from trip quality to pay and benefits. While creating an effective GAP takes a lot of time and energy, we all benefit, and as our Moms always told us, we get out of it what we put into it. From the standpoint of GCRG, we could facilitate this process by being a vehicle for the collection and sharing of ideas between GAPs, thereby “filling in the gaps.”

Moving on, or back to the meeting, the remainder of the discussion centered on the concept of taking stands on various issues, for example, wilderness, motors versus oars, privates versus public allocation issues, dam decommissioning, etc. The general consensus was that we really didn’t need to take a stand, but rather served our members best by presenting all sides to issues, polling our membership and simply reporting the results. Sounded good to me. So basically, the meeting boiled down to a fairly loose and informal chat session and to me that’s what GCRG is all about, a chance to get together with old friends, make new friends, share ideas, and make a little history.

After the meeting we regrouped at Hatch land for the first of many fantastic meals, served up by Emily, Lydia, and Mark. The beer flowed, stories were told, and the Northern Lights glowed, slowly fading as guitars and songs lulled us to sleep.

*Kenton (Factor) Grua*

## From The Veep: Fall Meeting Up North??

**I**N NOVEMBER 1993, GCRG membership traveled to Moab, Utah for the fall meeting and to assist in the formation of a northern guides association. A great weekend at Ken Sleight’s Pack Creek Ranch resulted in the Colorado Plateau River Guides (CPRG) (please see: *The News*, Summer 1993 p. 21, Later Summer 1993 p. 24, Fall 1993 p. 18–19, Winter 1993/1994 p. 12; *The Confluence*, Winter 1994 p. 2–4). But, to my knowledge, this was the last combined meeting of the two organizations.

I just returned from the CPRG River Education Seminar in Moab, May 4–5, where I attended their sessions and met Pres. Annie Payne and VP Dave Focardi and shot the bull with them and Board Member John Weisheit, whom I’ve know since our Arizona River Runners (ARR) days. I’ve proposed to both the GCRG and CPRG boards that we have another combined meeting. We’re now kicking around the proposal but details need to be worked out. Thinking about the November 2–4 weekend; the group campground at Sand Island on the San Juan near Bluff has been mentioned (by me, if I recall), but who knows. It should be a good time no matter where.

*V.P. Q.*

## New Whale #

**T**he Whale Foundtion boatmen hot/help line has a new toll free phone number: 1-866-773-0773, and has just received its tax exempt status from the IRS. More about that later.

## Dear Eddy

IT WAS WITH DEEP REGRET that I read JP Running's article in Winter 2001 about the passing of a good friend to many. I speak fondly of Bryce Mackay, a.k.a. Doom Cloud. This is to set the record straight as to where the moniker came from.

It was the summer of '83 when NPS "whirly birds" dropped encoded notes to the boatmen of that era (now boat persons, I reckon). Quite simply the messages in a bottle said "Flows to exceed 65,000 cfs—Camp High, Be Safe." Some of you may recall the many safety meetings worried guides conducted to discuss the new river stages.

During all this flood-prone waterway hysteria, like being required to walk your dudes around Crystal, the Doom Cloud was first seen approaching Pierces Ferry. Hatch boatmen were haggard from a rough night at sea, floating Lake Mead from Separation to Pierces in the dark without motor power in order to conserve energy. On one float trip (with Patty, Billy, and McC) we awoke around sunrise dreading the derig and the ride home in "The Cage." This cage was the sleeper Bryce had added to Ted's semi that winter. Once inside one felt slightly better than being lowered six feet in a pine box. The only redeeming quality was since it was separate from the cab one could have a beer on the way home if Bryce stopped somewhere to get some. McC was focusing on the approaching dust storm near Meadview. McC says, "what's that" and Billy looking up says, "Aw that's Bryce." And McC says with a smirk "Kinda looks like our 'Doom Cloud.'" And so the story goes. Except the night at the Annual Boatman's bash, in Flagstaff that year, when the Doom Cloud was tied inside his cage.

My compliments to JP for his story and if I may add just a small piece to this cliff-dwelling legend, the first time I had the honor of riding in the cab with Bryce, he pulled out his Buck knife and was cleaning his fingernails. Suddenly, he stabs himself in the leg. As I looked on in disbelief, Bryce drawls "Had to put the blade somewhere so I could shift the gears." God Bless him and a one big Yee Haw.

Terry Snyder  
SACRAMENTO, CA

MANY YEARS AGO, well-intentioned caretakers of Grand Canyon realigned trails away from archaeological sites to reduce impacts to those sites. And they also improved specific trails to eliminate the impacts to vegetation of multiple trailing. Now that most of those dragons are slain, trail workers are turning their attention to improving trails for the sole purpose of easing human passage. Note the removal of the large block of quartzite at the most technically challenging spot on the Thunder River trail. This is a great thing. I would compare it to the "improvement" of Quartzite Falls on the Salt River which makes the rapid (where people have drowned) easier to pass through safely. Now, on the way up to Thunder River, guides will no longer need to give so much one-to-one attention to their passengers. Don't be too surprised if next season you find four-foot-wide incut steps chopped into the slippery travertine boulders on the route up to the first pool of Elves Chasm. OSHA would approve. Will you?

Glenn Rink

## Stewardship Reminders

SIMPLY PUT, THE CANYON needs your help! Watch where you walk and watch where you camp (and do the same for the rest of those on your trip). Dune surfaces and the soil crusts within the canyon are fragile and easily damaged by careless feet. Walk in washes or on established paths and trails. *Don't Bust the Crust!!*

When camping, stay below the historic high water mark. This means staying off the terrace at Soap Creek, or out of the higher mesquites at Nankoweap, for example.

If an area looks blocked off, or a trail appears re-vegged, there's probably a good reason for it. Restoration efforts are underway at many camps and side canyons. Please help the place heal by not walking there.

Remember, even the slight impact of you (and your twelve closest friends) is of concern and adds up. Walk wisely and spread the word!

Greg Woodall  
GRAND CANYON

# Rolling Blackouts and Releases From Glen Canyon Dam

**T**WO DECADES OF science-based management efforts of the Colorado River ecosystem below Glen Canyon dam are threatened by the electrical energy crisis in the west. Two bills presently before the House, HR 1664 and HR 1647, may force Federal generating facilities to deliver relief to California during severe electrical shortages, called Stage III or rolling blackouts, during the next few years. California's half-baked attempt at energy deregulation has failed, resulting in bankruptcy conditions for the big utilities and the fabulous enrichment of independent power producers. Who suffers? ...rate payers and the environment. The Bush administration has taken a hands-off approach, so far. Dam releases may return to patterns similar to the pre-EIS days, when hydropower and the water regulation was the only game in town; the downstream river ecosystem didn't matter to anyone except river runners, forced to ride the yo-yo of dramatic and unpredictable daily tides.

Western Area Power Administration can deliver up to 350 megawatts from Glen Canyon Dam to California. This is the maximum due to transmission limitations and is roughly equivalent to a 7,000 cfs increase in river flows from the dam. They expect a minimum of 34 days of Stage III rolling blackouts, probably more, beginning now and extending through September at least. They will only give about an hour of lead time and will notify the NPS ramp rangers ASAP. Western intends to limit California's access to emergency power to 4-5 days/month, due to limitations in monthly volumes to be released from the dam. Electrical emergency flows will most likely occur during the daytime peak energy demand periods, but no guarantee.

As of May 1, the basin is dry in the north and wet in the south. Some recent precipitation has increased the below normal snowpack. We can expect average daily releases from the dam to be 10k cfs (7k-13k cfs fluctuations) for most of the summer, except August where it will increase to 13k cfs. Watch out for frequent emergency flows of 7k cfs on top of the normal daily high release.

This is an important year for our Adopt-a-Beach program to photo monitor the effects of changing hydrology on beaches and the quality of camping. Thanks to all you great volunteers! I recommend to camp high or keep a sentry posted to watch the river level throughout the night. Otherwise, you might lose

something important, or get stranded high and dry. Keep your ear to the water and please let us know how dam releases affected your river trip. Safe journeys.

*Andre Potochnik*

AMWG

## Inside

Night undresses her shawl of stars  
Upon the river canyon.  
Driftwood piles, interlocking lines,  
White stony shores, in tandem.  
Climb the dunes, soft hand-in-hand  
Lie on our backs, stare heavenward.

Built by time that legends forgot  
Soar out of sight of man's reach.  
Great walls extend, around each bend  
Leave sand to form a young beach.  
All in place, every turn we make  
Is the current's path, drift forward.

Dreams we make, like redwall spires  
At once crumbling and solid  
Eroded down, so beautifully  
In god's country, we called it.  
Moon is half of what will be  
Bathes silver rock, face eastward.

Breeze lifts up her skirt of silt  
Sculpts new wave patterned ripples.  
Raise goosebump skin, hold close a friend  
Each sensation here, quadruples.  
So much around: water, sky and land  
Pause for yourself, going inward.

Scott Knies



## Simply Susie

**A**LWAYS PARTIAL TO THE SCENIC San Juan River, Elizabeth Mary “Susie” MacLean Reilly was one of the first dozen women to run the Colorado River through Grand Canyon. She accompanied her husband, P.T. “Pat” Reilly, and the likes of Martin and Esther Litton, Brick and Dave Mortenson, Phillip Hyde, and Francois Leydet in hand-crafted, hard-hulled boats (precursors to dories) on noncommercial trips on the Colorado from 1953 through 1964. They avoided the “dudes” and tackled the River in high water years—127,000 CFS in 1957. Susie and P.T. witnessed a rapid flowing upstream on river right at Nankoweap!

Born on August 26, 1913, Susie met P.T. in a pottery class at Los Angeles High School. Married for 59 years, P.T. and Susie shared many, many interests



P.T. Reilly

in common; however, Susie loved to dance to the big bands, and Pat preferred to appreciate the music while seated. A 1946 Desert Magazine ad piqued P.T.’s interest in the southwest, and he and Susie joined Norm Nevills on a San Juan trip in 1947 and other Nevills’ and Mexican Hat Expeditions’ trips on the San Juan, Green, and Colorado until 1952 with P.T. as boatman. P.T. spent a major portion of his life researching and documenting the history and geology of southern Utah and northern Arizona resulting in articles and *Lees Ferry: From Mormon Crossing to National Park*. Susie was an active partner in these



Karen Underhill

intellectual pursuits—as well as the typist, editor, indexer, and business manager. Because of her efforts, the Lees Ferry manuscript saw publication after P.T. died.

After P.T. “ran the last rapid” in 1996, Susie donated his vast collection of research materials from his “Gold Room” to the Cline Library. We are also honored that in 2000 Susie established the Elizabeth M. and P.T. Reilly Endowed Internship to support research projects related to the Colorado Plateau. Interns will work with us each summer thanks to her generosity.

Despite advancing cancer, Susie lived independently in her Sun City, Arizona home until a stroke and fall on April 2. We witnessed a miracle as Susie was recalled to life from her comatose state for a week of treasured visits with family, to whom she was “Auntie Bee,” and close friends. She passed away at a valley hospice on April 19, 2001 in the company of two nieces.

Susie Reilly was so much more than a paragraph in river history. She epitomized the meaning of class. Like moths to the camp lantern, people gravitated to her warmth and kind spirit—not to mention her great meals (she made the best lemon meringue pie ever). Susie offered unconditional love...of the sort that one can only hope to receive from a parent. Despite our human frailties, she made us feel that we could do no wrong, and we were the better for it. They just don’t make women like Susie anymore.

Somewhere, Susie is dancing with P.T.—and yes, he is dancing this time around—while Glenn Miller plays “Little Brown Jug.” Save a spot on your dance card for us, kiddo.

*Karen J. Underhill & Richard D. Quartaroli*

## Rolf Holmstrom

October 28, 1922–April 4, 2001

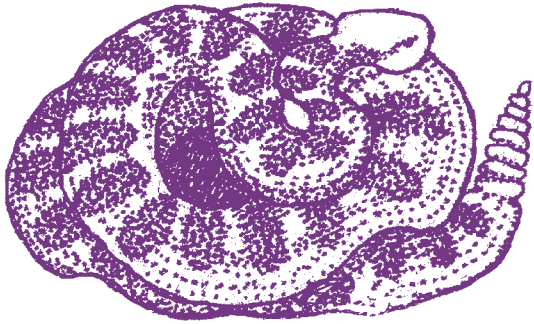
**R**OLF HOLMSTROM—honorable man, loyal brother, fellow-rover, gentle spirit—who never ran a river, but enriched Canyon lore by sharing so generously the story of his brother, Buzz.

Rest in peace, storyteller.

*Vince Welch*

# Snakes Of The Grand Canyon

ALTHOUGH SEVERAL REVIEWS and lists of the reptiles and amphibians of the Grand Canyon have been generated, the distributions of many species in the canyon are still poorly understood and several species are commonly misidentified by observers. Since general specimen collecting is not allowed in the Grand Canyon, we sought information from a numerous yet largely untapped resource, visitors and employees. Beginning in 1997, we encouraged



Ellen Tibbets

the river guides, park staff, and visitors to provide photographic records and localities of the snakes they encountered while in the canyon. To date, this database includes over 280 records of thirteen different species. This database includes records of three species previously unreported from the Canyon—ringnecked snake (*Diadophis punctatus*), Western diamondback (*Crotalus atrox*), and Mojave rattlesnake (*Crotalus scutulatus*)—and new localities of known species.

The data from this study augment information collected in a companion study with scientists from Arizona State University, Grand Canyon National Park, and the senior author. Data from each study confirmed that several snakes are commonly misidentified in the Grand Canyon area, and the combined effort has allowed for a refinement of the distributions of the commonly confused Southwestern speckled rattlesnake (*Crotalus mitchelli pyrrhus*) and the Grand Canyon rattlesnake (*Crotalus viridis abyssus*) along the Colorado River. The current distribution of the Grand Canyon rattlesnake extends from Page, Arizona, downstream to National Canyon (RM 166.5 L). The speckled rattlesnake has been found from 150-mile Canyon (which creates Upset Rapid) downstream through the rest of the canyon onto Lake Mead and throughout the Lower Colorado River Valley. So as far as we know there are 16.5 river miles where the distributions of these two species overlap. The speckled

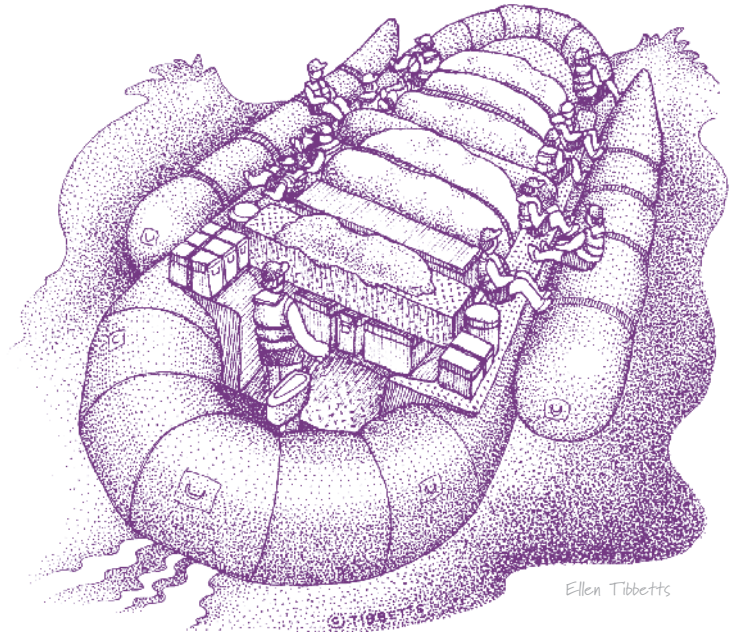
rattlesnake is typically referred to as a rock-dweller; however along the Colorado River in the Grand Canyon, this species can be found in a variety of additional habitats such as at the river's edge, in amongst vegetation on beaches, along the creeks, and in the washes. It appears to inhabit the same niche that the Grand Canyon rattlesnake does in the upper end of the canyon.

Although photographs are not always as perfect as having actual specimens (e.g. some may not be in sharp focus, not close enough, etc., to verify the identification), we have learned a great deal about the snakes in the Grand Canyon from this non-invasive method of documentation. Your interest and support of this project over the last three years has allowed us to learn what we have. We plan to continue to gather information on snakes in the canyon and hope that your interest prevails along with the project.

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Cecil Schwalbe, HERPETOLOGIST  
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85721



# The Changing Rapids of Grand Canyon: Debris Flows

**I**T WAS A DARK AND STORMY NIGHT: March 5, 1995. It had been raining for most of the trip to that point, and it was pouring that night at Lava Falls Rapid. We huddled under a makeshift kitchen tarp, then we went to bed to the cadence of raindrops on nylon. At about midnight, a microburst of wind and rain hit the area and blew our kitchen down. Around 1:30 AM, several of us who couldn't get back to sleep right away heard a roaring sound from the rapid a quarter mile away. The next morning, coffee in hand, we saw one of the wonders of Grand Canyon, a fresh debris-flow deposit blocking the left side of the rapid.

Most years in Grand Canyon, river guides have close encounters with debris flows, either while they are occurring or just afterwards. Beginning with Robert Brewster Stanton in July 1889, travelers on the Colorado River during the summer months have witnessed this spectacle, and now with boaters on the river in all seasons, it is likely that most debris flows will be seen as they occur or soon afterwards. In recent decades, most debris flows that have been witnessed either occurred at night or around dark, but that hasn't always been the case. In 1954, Georgie White ran Lava Falls while a debris flow was entering the rapid. She thought it looked like a lava flow, which is a very apt comparison.

In some ways, debris flows fall in the gap between the sediment-transport processes of *fluvial* (water-based) and *colluvial* (gravity driven). Fluvial processes include *streamflow*, where sediment is less than forty percent and water is greater than sixty percent; streamflow occurs in the Colorado River and most tributaries in Grand Canyon. The next category, *hyperconcentrated flow*, has a sediment concentration of forty to about eighty percent and occurs in the Paria River and most small tributary canyons during flash floods. Hyperconcentrated flow is a rather controversial term; many hydrologists believe it to be another form of streamflow, albeit with lots of sediment. Some typical colluvial processes are *landslides*, *avalanches*, and *rockfalls* that typically are not saturated with water and may not even have fine particles mixed with the larger ones. Debris flows have a sediment concentration of eighty percent and higher in Grand Canyon, and I classify them as a fluvial process because of their saturation with water.

The term *debris flow* has two meanings, which can be confusing. Debris flows are slurries that resemble concrete moving at 10-20 feet per second. The big difference, of course, is that Grand Canyon debris flows contain very large boulders that bob on the surface of the flow, sort of like corks in water. In Grand Canyon, about 14 percent of the particles in debris flows are

boulders (greater than 256 mm median size). Debris flow is also used to refer to the deposits left behind after the event. These deposits have many distinctive characteristics, including large levees made of boulders (sometimes called *boulder trains*); lateral deposits that, when viewed in cross section, seem to have boulders floating in fine-grained sediment; and a reddish *matrix* of fine-grained material that has significant quantities of clay in it. Fresh debris-flow deposits look like someone has slung a lot of mud around a pile of boulders; really fresh ones have mud oozing from between the larger particles. It is difficult to miss debris-flow deposits in Grand Canyon, but one particularly striking one is the fan surface at Crystal Rapid. You need to walk above the high-water line of the Colorado River if you want to see intact deposits.

Over the years, we have identified four mechanisms for debris flow initiation in Grand Canyon. The most common is the *firehose effect*, where streamflow flows over a cliff (typically in either Kaibab Limestone or Redwall Limestone) and hits a *colluvial wedge* of sediments stored up from innumerable rockfalls and avalanches. The best examples of this type is the 1990 debris flow at mile 62.5, which created a new rapid just downstream from the Little Colorado River, and the 1995 debris flow at Lava Falls. Colluvial wedges are present in the gentler slopes of the canyon walls, most commonly covering outcrops of Hermit Shale and Muav Limestone; they are called wedges because of their profile in cross section. The second most common type is direct failure of a colluvial wedge during intense rainfall. The best example of this is the Comanche Creek debris flow of 1998, which created a little rapid at mile 67.2. Direct failures of bedrock, particularly Hermit Shale and Esplanade Sandstone from the Supai Group, have caused many large debris flows in Grand Canyon; the best example of this is the 1984 debris flow in Monument Creek (mile 93.5; Webb et al., 1989). Finally, combinations of these failure types occur during the largest debris flows, with the Crystal Creek debris flow of 1966 as the prime example.

This influence of shale is notable, because it is the least resistant rock in Grand Canyon—not the most resistant—that is responsible for rapids. John Wesley Powell began this myth in his 1875 book, when he claimed that resistant rocks at river level made for hard rapids ahead. In his case, he was correct, only he didn't explain himself very well. Powell wanted to portage everything, so having sheer cliffs at water level made for difficult work getting around rapids. The fact that Powell actually had to run Sockdolager Rapid was the reason for



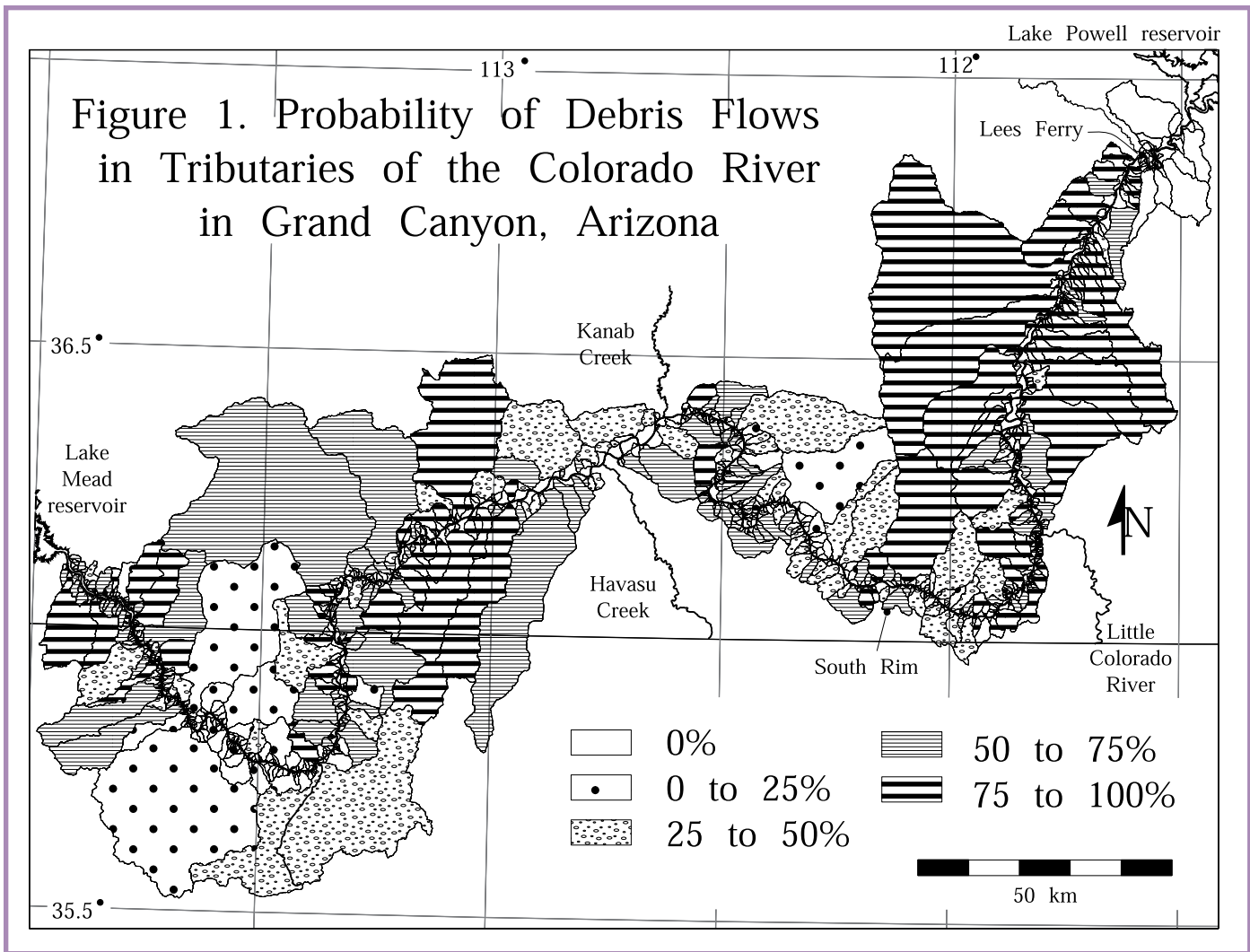


Figure 1. Map of Grand Canyon tributaries showing the probability of debris flow occurrence over the last century (from Griffiths et al., 1996).

this rapid's purported ferocity (ditto Separation Rapid), not the severity of the rapid itself.

Not all floods from side canyons are debris flows. For example, the 1999 flood in Stone Creek, which probably all guides have seen by now, was not a debris flow where it reached the river. Instead, this event was a significant streamflow flood not dissimilar to the large floods in Havasu Creek in 1990 and 1993 or the recent Diamond Creek floods. The short hike from the river to the first waterfall in Stone Creek provides all the information needed to make this evaluation. The channel is scoured, and no significant quantities of sediment were added. The only new sediment is a reddish sand, and very little of that is present. The roots of the formerly lush riparian vegetation protrude from the eroded banks; debris flows frequently flow around riparian trees and bury willows under piles of boulders. The river wasn't changed much except for that one rock that some oar boats hit at lower flows.

The frequency of debris flows changes as one moves

through Grand Canyon (Figure 1). To develop this map, we found that the variables that best explain debris-flow frequency are drainage area, the direction that the canyon is going in, and the proximity to certain shale units, notably the Hermit Shale (all of Grand Canyon) and the Muav Limestone (western Grand Canyon). The highest frequency of debris flows occurs in Marble Canyon, particularly in tributaries in the vicinity of the Roaring 20s, where the river's course is south-southwest. The lowest frequency is in the Jewels (miles 100–115) and Lower Granite Gorge (miles 130–150), where the river's course is northwest. The stability of rapids in Grand Canyon reflects this frequency, with many changes in rapids through Marble Canyon and few changes in rapids in the Jewels, except of course Crystal Rapid.

Debris flows aren't common from any given tributary, but generally one to two debris flows occur in a given year somewhere in Grand Canyon. Prospect Canyon at Lava Falls Rapid has had six historic debris flows,

making it the biggest producer in Grand Canyon, and the 1939 debris flow there is virtually identical in size to the 1966 debris flow at Crystal Rapid. Between 1984 and 1996, 25 debris flows occurred in Grand Canyon, more than any other period that we know of. In 1996, Hermit and Monument Creeks had debris flows. In 1998, a number of western Grand Canyon tributaries—particularly 205-Mile Canyon—had debris flows. In 1999, the only debris flow was in Comanche Creek, but this debris flow formed a new rapid.

Debris flows are the reason that most of the whitewater is in Grand Canyon. Without debris flows, the Colorado River might resemble the San Juan River on steroids, fast but with little in the way of big rapids. Of the 57 major rapids at low water in Grand Canyon, only three—MNA Rapid, Nixon Rock, and Sinyala Rapid—result solely from rockfall (Webb et al., 1988). Debris flows from side canyons create the rest, although the severity of some rapids, particularly Bedrock, are greatly enhanced by bedrock obstructions. Some of those old myths about rapids, such as Hance being created by that diabase dike on river right, or Lava Falls being the remnant of a lava dam, can be readily dispelled by looking at the debris-flow evidence up the side canyon or at the river.

Recently, we began monitoring debris flows and aggraded rapids again after a lapse of several years. As

river guides, you can help us by telling us of any significant floods that you think could be debris flows. Please contact Robert Webb at 520-670-6671 ext. 238 or rhwebb@usgs.gov. We'd greatly appreciate any information you might provide. Oh, one final thing: take a look to the left the next time you run Sockdolager. There is a nice new debris-flow deposit over there. Yes, John Wesley Powell might be able to portage Sockdolager if he ran the river today.

Bob Webb

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## Brittlebush

The spectacular yellow blooms which turn canyon shelves from red to golden yellow are unmistakably those of Incienso, *Encelia farinosa*, the Brittlebush. In Grand Canyon, it grows on rocky slopes below 3,000 feet, from river mile 40 to Lake Mead. It is quite common and abundant in both the Mojave and Sonoran Deserts. A member of the Sunflower family, it has gray-green leaves and flower stems which rise above the low growing branches.

One of the amazing parts of this plant is the gum, which was highly prized as an incense by the Catholic priests in Mexico, and is still used to this day in Northern Mexico.



Sam Walton

No wonder the Spanish name for this plant is Incienso. It is also widely used as a tea for arthritis pain.

The leaves and gum both have a numbing effect which explains its use for tooth, gum and throat pain by Native Americans. A salve from the gum has been used to relieve body aches and lung congestion as well.

Modern-day tribes use the whole plant as a dye for baskets and fabric. They also chew the fresh leaves and apply the pulp to insect bites for relief of itching and inflammation. The tea will help break a fever in colds and flus.

DeeAnn Tracy



There is this Wave

There is this wave that forms the tongue  
of Horn Creek Rapids, glassy, smooth, and sensuous  
Purity of form and fluid beauty entrances me.  
How big are the rapids beyond the wave?  
When did I push off from shore?  
Glassy, smooth, and sensuous, pure beauty, fluid form,  
I am falling in love forever.

There are these waves beyond the tongue  
of Granite Rapids, chaotic, discordant, and conflictive.  
Random power and crashing tumult confounds me.  
How much chaos can I endure?  
How much conflict can I survive?  
Chaos, discord, and conflict, random tumult, crashing power,  
I am being torn apart forever.

There are these waves beyond the tongue  
of Hermit Rapids, big, predictable, and parallel crested.  
Rhythm and dance, power and breakthrough exalts me.  
How much higher can I go?  
How can I embrace this much beauty and power?  
Rhythm and power, beauty and breakthrough,  
I am exalted and humbled forever.

There are these pools below Horn, Granite, and Hermit Rapids,  
eddies flowing dark and deep.  
Backwards and forwards, reflection and projection.  
Is there Love beyond love? Is peace a part of discord?  
Eddies flowing dark and deep, glassy smooth  
Oh beautiful chaos, waves on waves stretching to stillness,  
I am falling into quietness forever.

Rob Elliott

## Adopt-a-Beach—Y2K Results

I'VE PICKED UP THE BALL AGAIN after Gary O'Brien's dedicated three years of managing the Adopt-a-Beach program. Since my short term in 1996, it's good to be reminded how empowering this program is for guides who wish to contribute their volunteer efforts to long-term monitoring of their home away from home—campsite beaches in Grand Canyon. As guides, we need to continually voice our concerns to land managers about preserving and enhancing what beaches are left. Grand Canyon Monitoring and Research Center (GCMRC) and Bureau of Reclamation (BOR) folks look to our results for managing this resource, and the public sees results of a powerful stewardship program. Now it's been six years since the inception of Adopt-a-Beach. Data from this program show a well-documented timeline of beach and campsite change since the Beach Habitat Building Flood of 1996 (BHBF).

This year, I intended for Adopt-a-Beach to answer specific questions posed by scientists and guides about beach change from the year 2000 river season. Below, I summarize some of our results and conclusions gained through analysis of repeat photos and guide responses.

### *Do small spike flows help maintain beaches and campable space?*

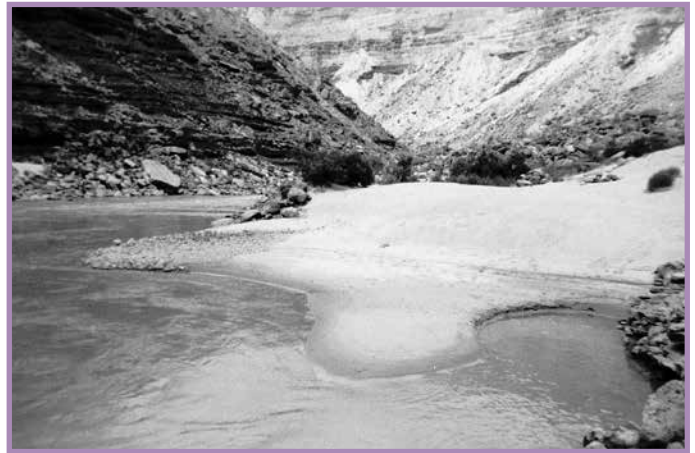
Two spike flows of 30,000 CFS were released from Glen Canyon Dam for four days in early May 2000 and again in September 2000. These flows deposited sand on high elevation bars (above the average flow zone of 28,000 CFS) for 63% of beaches after the spring spike and 55% after the fall spike. The photographs show that the spike flows primarily increased beach-front property, and increased beach elevation only slightly above the estimated 28,000 line. Just one beach, Hance, lost sand from any of the spikes. The rest of beaches showed no change. Unfortunately, high flows of 17,000 to 19,000 CFS followed the spring spike, and photos show that much of the newly deposited sand was eroded away. The fall spike was immediately followed by flows of 8,000 CFS, which appeared to stabilize the new sand for the period that beaches were photographed (until November 2000).

### *How is the 1996 flood deposit holding up on beaches?*

The longevity of the BHBF deposit continues to be assessed every year. Results show that most beaches (59%) returned to their pre-BHBF condition as of fall 1999 (as determined by Gary O'Brien). Most of these decreases occurred in 1997 and 1998. Until spring 2000, this deposit has been continually winnowed away by fluctuating flows or by gullying and flash-flooding caused by rainfall. On several beaches, flash flood material has



Salt Water Wash—Before the 1996 BHBF,  
February 1996



Salt Water Wash—After the 1996 BHBF,  
July 1996



Salt Water Wash—September 1999





Salt Water Wash—After Spring Spike, during LSSF  
July 2000



Salt Water Wash—After Flash Flooding  
August 2000



Salt Water Wash—After Fall Spike  
September 2000

overtopped and covered this deposit. Furthermore, wind has been slowly redistributing this sand onto upper slopes. The spike flows of last year helped replenish sand to this deposit but only to the extent of the spike flows' limited stage heights. As of fall 2000, 78% of beaches were again larger than their pre-BHBF condition. This indicates that the relatively smaller spike flows are beneficial to maintaining campsite area, limited, however, by the stage height of the spikes.

#### *Do Low Steady Summer Flows (LSSF) provide better camping?*

I analyzed guide responses as to the “campability,” of their adopted beaches. That is, how has available campsite space and ease of using a beach for camping changed? With the onset of LSSF after the spike, 77% of beaches showed some kind of improved campability, according to responses for 31 beaches. These camps contained either more sandy beach-front property, decreased rockiness for better boat parking, or a relatively flat bench for kitchen set-up and camping. Campability was reported to be worse for 23% of beaches. These camps, such as Tuckup, Boucher, and Upper National, generally had more rocks exposed in boat parking areas which made access difficult. Several guides commented that many more beaches (other than those in our sample set) became available for camping. These would otherwise have been under water with higher flows. For example, lower water camps such as Clear Creek, Olo, and Talking Heads again became useable.

#### *What were the main processes causing decreased beach size throughout the summer?*

Guide comments and photos showed that gully formation from rainfall and flash floods had the largest effect on decreased beach size (47%). Higher fluctuating flows following the spring spike accounted for 33% of decreases. Erosion from people accounted for 7% of decreases. As in previous years, effects due to wind were less significant.

#### *What are Adopt-a-Beachs' general conclusions about the spike and LSSF of last year?*

Spike flows at the beginning of the summer season helped replenish beach frontage and built lower benches which were mostly useable during LSSF. Many new camps were used during the LSSF, which relieved pressure on the more popular camps. After an intense monsoon season, the fall spike infilled many gullies and covered recent flash flood material with fresh sand. The fall spike merely maintained longevity of the spring spike deposit. However, the relatively small spikes cannot act as an alternative to the BHBF of

1996 for rebuilding beaches. They can only maintain beaches so they remain campable.

Probably the most disconcerting guide comments concerned the prolific crop of tamarisk seedlings observed at many beaches in the new low water zone—a result of the LSSF regime. I only hope that the higher flows over this past winter have curbed this potential new problem. Otherwise, guides may have to activate their stewardship to another level.

For further clarification of the methods and analyses employed in this study, please refer to the forthcoming final report of the 2000 Adopt-a-Beach Program. As always, it will be sent to adopters who request them, appropriate agencies, and other interested parties.

*Kate Thompson*

## Thank You Adopters!

THE FOLKS WHO HELP keep Adopt-a-Beach going include (in alphabetical order): Lynn Hamilton, Gary O'Brien, Andre Potochnik, and Kate Thompson. We thank everyone who adopted a beach in 2000 and all of you who signed up for the 2001 season. It's exciting to have all of the study set plus added beaches under the stewardship of people who make a living on the Colorado River. It's a great way to give back to the place we all love. And there's still room for more adopters—two adopters for a single beach is even better! Please give Lynn a call and she will send out a packet in time for your next river trip. This program is completely dependent on your participation, and the results that have been directed through the Adaptive Management Program are due completely to all of your hard work in photographing and commenting on the condition of our camping beaches year after year. Finally, we extend our gratitude to our individual contributors, the Grand Canyon Conservation Fund, and the Grand Canyon Monitoring and Research Center for their dedicated support of this program.



## 2001 Adopters

Beach	River Mile	Adopter
Jackass, left	8.0	Johnny Douglas Jeri Ledbetter
Soap Creek	11.0	Jeff Sorensen
Salt Water Wash	12.2	Ian Feinauer
Hot-Na-Na	16.0	Steve Wiley
19-Mile	19.1	Mark Franke
North Canyon	20.4	Andre Potochnik
Silver Grotto	29.3	Matt Winfrey
Middle Nautiloid	34.7	Lora Colten
Lower Nautiloid	34.7	
Tatahatso Wash	37.7	John Toner
Bishop Camp	38.3	Kate Thompson
Buck Farm Canyon	41.0	Nancy Helin
Below Nevills	75.6	Walker Mackay
Hance Rapid	76.6	NPS River/Science
Grapevine	81.3	Kate Thompson
Clear Creek	84.0	Frank Wetmore
Above Zoroaster	84.5	Christina Parker
Trinity Creek	91.6	Andre Potochnik
Schist Camp	96.0	A.J. Reeves
Boucher Canyon	96.7	Lynn Myers
Crystal Creek	98.0	Amy Tibbetts
Lower Tuna Rapid	99.7	Andy Dicus
Ross Wheeler	107.8	Jeff Sorensen
Bass Camp	108.3	Nikolle Brown
110-Mile	109.4	Jerry Cox
Upper Garnet	114.3	Jed Koller
Lower Garnet	114.5	NPS River
Below Bedrock	131.1	Bert Jones
Stone Creek	132.0	Christina Parker
Talking Heads	133.0	Charlie
Sharp		
Racetrack	133.5	NPS River/Science
Lower Tapeats	133.7	NPS River/Science
Owl Eyes	134.6	Mike Long
Backeddy	137.0	Jeff Sorensen
Kanab Creek, above	143.2	Drifter Smith
Olo Canyon	145.6	Evan Tea
Matcat Hotel	148.5	Nikolle Brown
Last Chance	155.7	David Desrosiers/NPS
Tuckup Canyon	164.5	Susan Wykstra
Upper National Canyon	166.4	Paul Smolenyak
Lower National Canyon	166.6	Sam Jansen
Gneiss	236.0	Mark Everett
Separation	239.8	Mark Everett



## Messing Around In Boats

IT'S HIGH TIME for another volume of Grand Canyon boating stories...I'm looking for stories, artwork, and musings about the Colorado River in Grand Canyon to include in a new book that will be sort of a sequel to *There's This River*. This edition will have stories and artwork from all Grand Canyon river-lovers: commercial guides, private boaters, passengers of all kinds, science folk, rangers...

I'm looking for true (embellishment encouraged) stories of *all aspects* of life on the river, not just the glory and gore (although glory and gore are very welcome). The more unusual the better. I'll look at poems and short essays as well, and I also need photographs, sketches and paintings with a Canyon or River theme to help showcase all the talents of the river community. The book will have color pieces in it, but I have lots more room for black and white art.

There are also a few "classic" stories out there I'd love to get a hold of. Who's got a good Diamond Creek flood story (the early flood)? What about the fire at Nanko, carrying river gear down the Whitmore Trail, more '83 stories? Anything else you can think of? Please let me know!

If you've got questions, a story you're dying to tell, or one that you've told so much that everyone else is tired of it, please send it to me before the end of the year:

Hard copy and/or zip disk (formatted for Mac, Microsoft Word preferred—you'll get your disk back):  
Christa Sadler  
PO Box 22130  
Flagstaff, AZ 86002  
(520) 774-8436  
Email: Sinyala@aol.com

Ideally, I'd like to get any submissions on zip disk, formatted for a Mac, but if all you have is a hard copy, send it on in. I will reserve the right to edit your submission, but I'll ok any major changes with you.

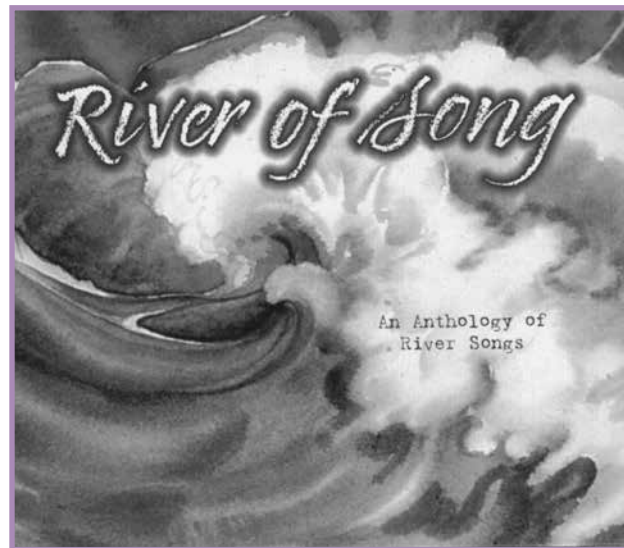
Thanks, and I look forward to reading some more great stories!

Christa Sadler

## River Music

FOR ALL YOU FOLK MUSIC LOVERS, a new CD has arrived. *River of Song, An Anthology of River Songs*, presents a lyrical boat trip down the mighty rivers of North America. This anthology presents rivers as a metaphor for life as in Anke Summerhill's, "Stars at Noon", or Chuck Pyle's, "Keepin' Time by the River"; Katie Lee and Tom Russell write and sing about old-time river rats, while Cosy Sheridan and James Keelaghan warn us about the effects of environmental change to our river systems. TR Ritchie wrote a new song for this project, "Let This Mighty River Roll", and writer Terry Tempest Williams reads her new essay, "River Music". Also included are songs by D-Squared and Erica Wheeler, recounting favorite river trips down the Colorado River. Fiddler Gordon Burt contributes his instrumental piece, "Canyon Reflections", and TR Ritchie covers Steve Goodman's, "Grand Canyon Song."

A portion of the proceeds will be donated to *American Rivers*, an advocacy group dedicated to the preservation of free-flowing rivers. You can order the CD by calling *Music of Moab* at 435-259-4405 or visiting [www.riverofsongcd.com](http://www.riverofsongcd.com). The CD's are also available through any good retail outlet, CDNow, Amazon.com and most other .com record stores.



## Northern Lights and GTS Nights

THE ANNUAL SPRING Guides Training Seminar (March 30–April 1, 2001; co-sponsored by GCRG, Grand Canyon National Park, and the Grand Canyon River Outfitters got off to a very bright start with a rare exhibit of Northern Lights (*Aurora Vermilionalis*) in Arizona, setting the tone for another in a long line of grand GTS's!!!

Thanks to Patrick Sloan and the Fosters at Marble Canyon for allowing us to once again use the old Marble Canyon Lodge for a Coconino County Health Department “Food Handlers’ Course” conducted by Marlene Gaither (thanks, Marlene) and the spring GCRG business meeting. If you’re interested in full details of the meeting, see the GCRG website for meeting minutes.



Friday evening we moved down to the Hatch River Expeditions warehouse where Stevie, Sarah, and little Eva hosted the rest of the event. Special thanks to all the Hatches (including Ted); sure was fun to be back there and plenty of room to spread out, too. Wonderful food, once again, by Emily Couture and a few cold beers got everybody in the mood.

And then Bert Jones rushed in and said “You guys really ought to come outside to see this!!!!” After everybody stopped ooh-ing and aw-ing, debate as to the cause of the light show ranged from Northern Lights, Page, Page airport, Navajo Generating Station blow-up, to UFOs. Most generally agreed that it was Northern Lights; we had confirmed previous sightings on Powell Reservoir of Northern Lights from Melville and Flamme, two unimpeachable witnesses if we ever heard ’em; that settled it then.

Saturday and Sunday 150 attendees had an incredible variety of multi-disciplinary presentations from speakers who were among the best who have appeared at a GTS. Beginning with new GCNP Superintendent, Joe Alston, and ending with the cataract boat “Sandra,” and every imaginable topic in-between—good thing we didn’t have any more as our brains were on overload. We want to thank all of them for being there; please check out the GTS website <http://www.gcr.org/gts.htm>, where Chris the Genius has posted the agenda. In addition, Brad Dimock’s slide show on Glen and Bessie Hyde, John

Blaustein’s back-by-popular-demand “Glory, Gory Dory Days,” and Katie Lee’s all-new “The Once and Future Glen Canyon” entertained the masses. We give a big thanks to you all (illustrious speakers, attendees, outfitters, and Park Service) for participating. Our sincere gratitude also extends to the Grand Canyon Conservation Fund, a non-profit grant making program established by the Grand Canyon River





Outfitters, and to Teva Sport Sandals for their generous financial support of our program.

Planning has already begun for next year's GTS, and it promises to be a dandy. Easter falls on the traditional weekend, so be prepared for either March 22-24 or April 5-7. Mark your calendars now and we'll keep you posted.



## GTS River Trip

THE 2001 GTS trip launched with a wonderful bang. We started out at the Hatch warehouse with an hour-long food pack, which went well thanks to the efforts of Sarah Hatch, Laura Kish, and quite a few eager participants. We were mostly rigged by lunch-time, which gave us the opportunity to pick up thirty bags of trash on our two-mile stretch of adopted highway that afternoon.

We had a wide variety of boats; Kate Thompson's dory, Noel's cataraft, Dave Whittlesey's 14-foot Achilles, a Can-Ex paddle boat, boats from AzRA, Western, and the park, and my Hatch rig with the invaluable crew of Mark Franke and Erik Dietermier.

On Tuesday morning we launched with a full group of 31 people after a short walk up to Lee's lookout. We had a short run down to Soap Creek battling stiff headwinds. We also got our first and only flip out of the way at Badger Creek.

The next morning Kate Thompson, Linda Jalbert, and Helen Fairley started with a great series of talks on site preservation, and the Adopt-a-Beach program. Talks throughout the trip were very informative and entertaining. Mike Anderson presented a detailed history of the early settlers and prospectors in the park and in conjunction with Linda gave a great overview of the Park Service and its administrative history. Jeff Sorensen told us about relatively giant eye-eating parasites on the Kanab Amber Snails. Helen Fairley and Neil Weintraub brought everyone up to date on archaeology. Ron Brown did an amazing and entertaining rendition of John Hance. Randy Rasmussen from the National Parks Conservation Association courageously presented issues from implementing the CRMP, and also wilderness designation, which resulted in interesting heated discussions. Peter Huntoon hiked in at Tapeats Creek and brought with him a plethora of geologic knowledge. On the upper half Noel Eberz not only gifted us with geology, he also shared with us some wonderful fantastic poetry, (particularly "Ahh Wilderness"). He also spearheaded the construction of a sweat lodge at Kwagunt, graced everyone with his jovial boisterous demeanor, and came up with the idea of having each participant give a short talk on any subject. Topics ranged from traveling in China to Z-drags. Unfortunately Noel had a battle with an acacia tree at Cardenas Creek and lost, resulting in a helicopter ride out.



*Puttin' in time after the rig.*



*A really interesting talk.*



*Spontaneous yoga.*



This proved to be a mixed blessing, giving Matt Vandzura and Jennifer Flynn a practical setting to talk about river safety and emergency protocol. Noel however, was sorely missed. Matt and Jennifer were replaced on the lower half by Mike McGinnis, the new and very capable head of the wilderness subdistrict, Bil Vandergraf who rowed like a champ and educated us on helicopter short haul, and Diane Pennington who coached us well in public speaking and interpretation.

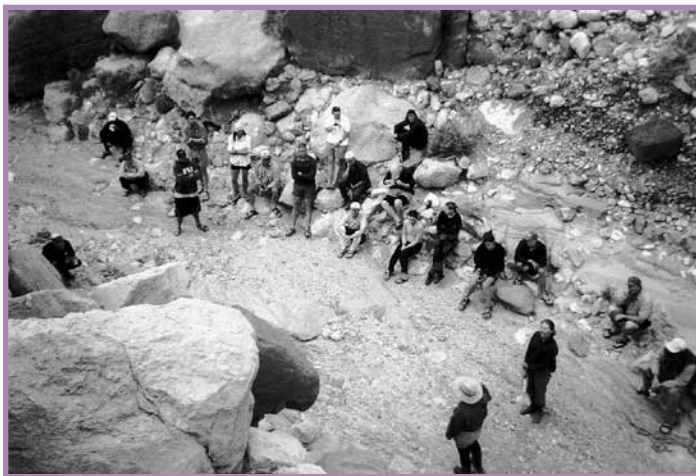
Cooking and the porto setup were distributed, amongst the whole group. The meals were simple and filling and clam chowder warmed our insides at upper Bass, after towing all boats upstream because the lower camp was taken. Darla Ekbaum became the desert queen, making cakes and other delicious treats every night. In the mornings on the upper half, Carrie Field would help our sore backs and muscles by leading impromptu yoga classes. There was always a great crew in the paddleboat, even with some wind and low water, and it was well captained by Amy Jo Reeves, Cameron Alexander, and Matt Winfrey.

Although the water was low and it was occasionally windy we had time to do a few good hikes. We had a perfect day for the Carbon-Lava loop, although the blooming redbuds, sego lilies, red beaver tails, white popcorn flowers, brittlebush, and quite a few other spring flowers, distracted us from Noel's geology discussion. Hikes on the lower half included Garnet Canyon, 209-Mile, Parashant, and Bedrock while we were waiting for the water to come up.

The take-out at Diamond Creek went smoothly after sorting through the gear and finding vehicles to get everybody where they wanted to go. I continued on down to Pierce Ferry to take out my boat with a few more people on their way to Vegas.

In addition to all the participants I would like to thank Hatch and all the outfitters who provided gear, time, and also the authorized training personnel for the trip. I would also like to thank Noel for all his hard work on the preliminary planning, all the speakers who did an outstanding job and the NPS interpreters and river staff who made the trip safe, enjoyable, and educational.

*JP Running*



*Another really interesting talk.*



*Smile one more time everyone!*

### Reflections

Stalwart prows on every wall  
Redrock turning to brown  
and yellow-green  
Holding its mysteries  
in these great unconformities  
These billions of years of stone  
look immovable,  
But everywhere the evidence  
of the power of a grain of sand  
and a molecule of liquid.

Elizabeth Scott-Graham



# Letters from Grand Canyon— Genesis Inland Seas and Residual Lakes

SIXTY-FIVE MILLION YEARS AGO, the Mesozoic era came to an end. With it went the great reptiles that once lorded it over land, sea and air, victims perhaps of unimaginable catastrophe when an asteroid smashed into Earth near Yucatan's Chixculub, visiting death and destruction upon most living things. With the reptiles gone, the coast was clear for the mammals to develop explosively, leading eventually to the arrival of *Homo sapiens*, that strange bipedal primate whose most notable characteristic is to be often clever and seldom wise.

Changes were also brewing for the area later to become the Colorado Plateau of the western United States, changes that, while not so fiery, were also to have profound consequences. As we saw in the previous Letter, the transition from the Mesozoic to the following Tertiary left the Rocky Mountain West with a landscape which, though quite different from what we see today, would evolve gradually but steadily into the present scene.

In the West, in what are now parts of Utah, Nevada and Arizona, a great mountain chain—still being uplifted at that time—spilled vast aprons of debris eastward and northward onto what is now the Colorado Plateau (Figure 1). To the east of the mountain chain, and extending roughly north-south in this area, was a seaway (the "Interior Seaway" of the last Letter.) Between mountain and sea, an enormous alluvial plain was crossed by rivers flowing eastward from the former to the latter. It is quite possible that a reasonably accurate analog (without the sea, of course) would be today's interface between the Rocky Mountains and the High Plains: a mountain front cut by deep canyons that spill onto nearly featureless plains.

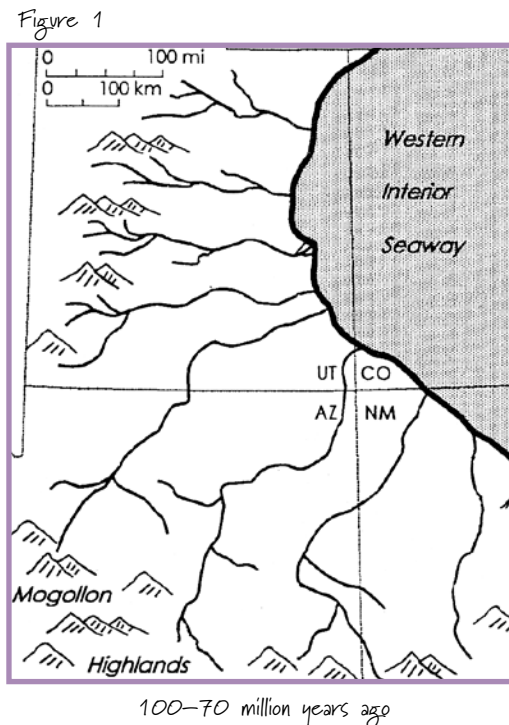
This landscape cannot be seen today because it has been destroyed by subsequent events. It can only be reconstructed in the mind's eye using what evidence we have: marine deposits left by the Cretaceous "Interior Seaway"; fluvial deposits left by rivers on the alluvial plains; the sheets of debris derived from the mountains

(as shown by the debris' composition and its coarsening toward the mountains); and intense deformation along the old mountain belt.

Actually, it is not entirely correct to say that the old mountains are no longer visible. As you travel south from Flagstaff to Phoenix on Interstate 17 you come to a viewpoint (at mile marker 313) just as you leave the Mogollon Rim from which you look south into the Verde Valley and the Black Mountains and other ranges beyond in central Arizona. This is where the ancient mountain belt used to be, torn apart and foundered long ago as a result of basin-range pull-apart deformation that produced basins such as the Verde Valley. In spite of the foundering, traces of the old mountains and their loftiness remain, because the central Arizona mountains, which even today are at least as high as the edge of the Colorado Plateau where the viewpoint is located, are composed of Precambrian rocks, whereas the edge of the Plateau is capped by uppermost Paleozoic rocks. These Paleozoic rocks have been eroded from the central Arizona ranges; restoring the rocks would add thousands of feet to the mountains, making them much higher than the Plateau even after the foundering.

A similar situation is visible on Interstate 40 west of Seligman, where ranges such as the Hualapai and Peacock Mountains, which are composed of Precambrian rocks and are beyond the Plateau's edge where the ancient mountain belt used to be, still tower above the Plateau's edge in spite of faulting and foundering.

So long as the simple picture of mountain/alluvial plain/sea existed, the drainage network maintained an equally simple configuration: from mountain to sea, meaning generally eastward or northeastward in Utah, and northward to northeastward in northern Arizona. But the simplicity was spoiled by continuing deformation, which produced additional mountains and hills where before there had been alluvial plains and sea. The result was that the sea disappeared about 65 million years ago. By about 55 million years, the Rocky Moun-

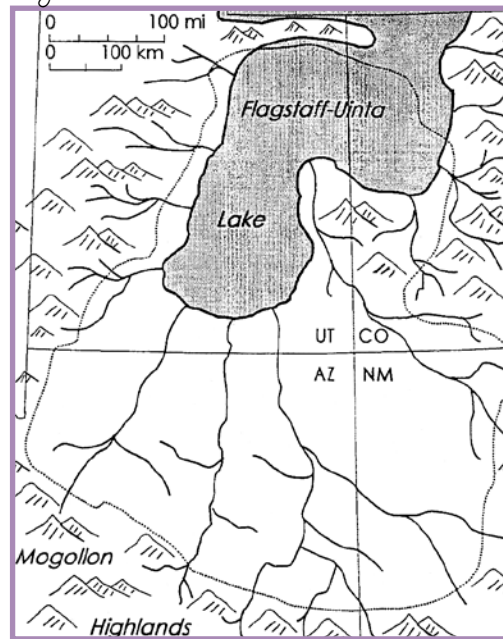


tain West started to split into individual basins, each rimmed by mountains, each occupied by a lake. In each lake, sediments accumulated that today bear picturesque names such as Wind River Formation, Green River Formation, Uinta Formation—all testimony to the basins where the lakes once held sway, where these rocks are to be found today, and which once were dear to native man and mountain man alike.

Notable among the uplifts of this time are those in Colorado and northern New Mexico, roughly where the Rocky Mountains and San Juan Mountains are now. These uplifts introduced westerly slopes from mountain to lake, instead of just the easterly slopes that had been the norm earlier. The consequence was that now there were many drainage basins, each consisting of streams flowing from all directions into the lake that occupied the low part of the basin (Figure 2). One of the largest lakes—Lake Flagstaff and then Lake Uinta—occupied eastern Utah, northwest Colorado and southwest Wyoming, and persisted until about 40 million years ago. This lake was the sump for a very large area athwart the present course of the Colorado River. Presumably, it also drained the southwest Colorado Plateau in northern Arizona, but we have no direct evidence of this because rocks of that age were never deposited or eroded after deposition.

This much is known: coarse deposits derived from the ancient mountains south of the present Plateau rim continued to be deposited until Oligocene time, 25 to 37 million years ago, indicating drainage from south to north onto the Plateau. These deposits are known as the “Rim gravels.” Farther west, in the Peach Springs/ Kingman area, volcanic material flowed north-eastward onto what is now the Plateau as recently as 18–20 million years ago, indicating persistence of that drainage direction. Near Fraziers Well, on the road to Havasu, Eocene limestone and gravel rest directly on the Paleozoic Kaibab Limestone, showing that the entire sequence of Mesozoic rocks had been eroded from that area by 37–55 million years ago. However, it is possible that many of the Mesozoic sediments had never been deposited so far south, or were much thinner than to the north. It is also true that the Moenkopi Formation, the lowest and oldest Mesozoic rock of the area, was present at Red Butte, south of the Grand Canyon, about 14–15

Figure 2



55–45 million years ago

million years ago; directly north of the Grand Canyon on the Shivwits Plateau six to seven million years ago; and southeast of Flagstaff four to five million years ago. Evidently, Mesozoic rocks were still common near Fraziers Well until quite recently, so the deep erosion there may simply reflect what was happening near the north flank of the ancient mountain belt, and may not be characteristic of the region as a whole.

In summary, rivers in southern Utah probably flowed northward into a large lake as recently as 40 million years ago. Drainage directions in central Arizona were northward until perhaps as recently as 18 million years ago. We do not know whether these drainages continued into Utah. We do know that throughout this time

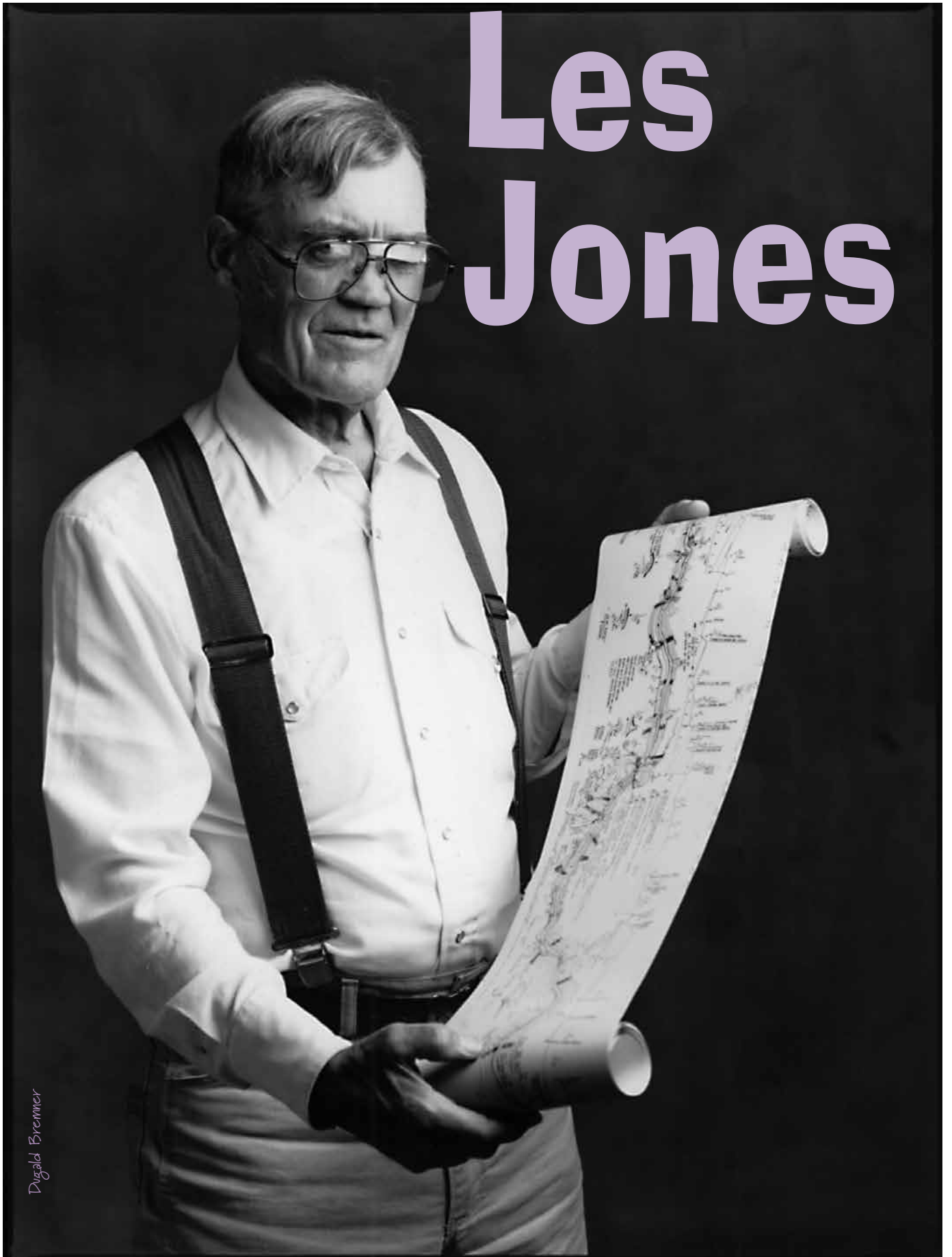
the present Colorado Plateau had the shape of a gigantic saucer, with the center lower than its uplifted rims, and we know that through most of northern Arizona and southern Utah the strata of the rocky layer cake sloped gently to the northeast, features that were later to have a major role in sculpting the region.

So much for what we know. Little as it is, this knowledge raises a major and intractable problem concerning the establishment of the Colorado River. The River flows generally south, which, in Arizona at least, is away from the low part of the saucer and up over its rim, not what one would normally expect. Even worse, whatever information we have about ancient river systems in the region indicated that they flowed north, in the opposite direction of the present Colorado. This—how to go from rivers flowing north to a river flowing south—is the major problem in the history of the Colorado River, not the carving of the Grand Canyon. Making sense of the problem is not helped by the fact that most, and perhaps all, the critical evidence is gone, destroyed by the endless working of erosion, which has patiently fretted away thousands of feet of rock, lowering the landscape so much that the level where it used to be when the critical action took place so long ago, is now up there, in thin air, visible only in the mind’s eye, if at all.

Dr. Ivo Lucchitta

*This is the fifth in a series of “Letters from Grand Canyon” by Ivo Lucchitta that will appear in future issues of the BQR.*

# Les Jones



Digald Brenner



I BEGAN RUNNING RIVERS when I was eleven years old, I guess. I got my dad to move his ranch to the river bottoms on the Missouri River and I walked to school a half-mile to the river, and rowed across three hundred yards of the Missouri, leadin' my horse behind me, and went on two miles to the schoolhouse. In the winter-time it'd be frozen, and spring and fall you were rowin' through the ice floes or staying at the neighbor's ranch across the river a week or two.

From there, I went to the University at Bozeman and a lot of engineering work back in Minneapolis and Manhattan and various places, and came back west in 1953 when my father died, with the express purpose of building boats and running rivers. My cousin Don Hatch, and Bus Hatch, came to see me one time, and they got me involved, with my brother-in-law, running through Dinosaur with the Sierra Club to oppose the Dinosaur Dam that was in the works. That dam, incidentally, the Bureau of Reclamation were kicked out, so to speak, from Dinosaur and immediately took advantage of an opening to build a dam on Lake Powell, as we now call it, drowning out Glen Canyon. And the Sierra Club was resting on its laurels, so before they knew it, the dam was in the works.

From there...I ran solo on Cataract, and before that, however, I'd noticed that when I'd run with the Sierra Club the rapids all kind of ran together as a blur, and I couldn't remember the details well enough, and I didn't have identification points. So I started my scroll maps—I didn't like the wind on the U.S. Geological maps, so I started building my scroll maps. And other people liked them, so during the years I sold about 20,000 scroll maps of the different western rivers.

My first run was alone, was Cataract. I ran solo from Moab to Hite in two days. And my mother and sister picked me up. I had a partner going to run with me the same fall—that was August of 1953. Thanksgiving of 1953, I came to run the Grand Canyon. My partner didn't show up, so I soloed the Grand Canyon to Marble at that time, down to Bright Angel. I cached my boat on the roof of a shed there and came back in April to finish the run, fixed a few holes the squirrels had eaten in my boat deck, went on through to Bedrock where I met Bus Hatch as I'd planned, because Don Hatch and I had designed the first big pontoon, commercially, to run the Grand Canyon. And Don Harris and I figured that Bedrock would be the biggest hazard for it, for the oars,

they would have a difficult time pulling through fast enough to miss the point of the rock, off that shallow beach. And sure enough, they sunk the boat on the head of the rock, and I came up in my boat and gave the rope to the passengers, and we pulled it, and the bottom split out. The boat popped to the surface, Smuss Allen jumped in, went to the bottom of the the river [through the split-floored boat], came up surprised, rowed it into shore and after a couple of hours of fishing for sleeping bags and things, I patched the boat up with my patching gear, and they ran it on through Lava Falls and everything in great shape. The boat was in service for twenty years afterwards.

Other than that, I ran a lot of western rivers later, and sold a lot of maps. Practically everything was solo, because it was difficult in those days to find somebody to run with.

Do you have any questions?

*Was your first trip ever in 1953, that solo trip through Cataract? Or had you run earlier with your cousins?*

Well, I ran boats on the Sierra Club trip. I ran a ten-man down to Split Mountain and talked Bus into lettin' me run one of these big pontoons with Smuss Allen, and Don Hatch was on the shore above Moonshine Rapids, giving everybody directions, and everybody was lookin' at Don Hatch, except me, and

I was lookin' at that big rock comin' up, and I said, "Smuss, we're going to run over that cotton pickin' rock." Everybody knows House

Rock and Moonshine. I said, "Straighten the cotton pickin' boat up!" And we straightened it up and ignored Don on the shore and went right over the rock. There were two twins, kids, in the front end, and my brother-in-law was up there in the front end. As we went over, I figured, well, I was facin' downstream, and so

I sunk the oars in my guts and brought 'em under the power of the water flow in order to punch through the back wave. We punched through, alright, but I broke one of the three-inch oars, and Bus

gave me a rimmin' for that. So I decided I'd run my own, so I ran down through Cataract then. But my brother-in-law caught those two twins—they got thrown way up in the air and he caught 'em when they came down, one in each arm—he kept 'em from goin' overboard.

*So Bus' business was just kind of takin' off then, huh?*



Yeah, he rimmed me good for breakin' his oar. He said, "You should never put an oar in on a falls..." If I hadn't put that oar in, we'd still be in the hole. Put 'em both in, one of 'em busted.

*This is a digression, but when you said Manhattan, was that New York City? You were an engineer there?*

Yeah. In the Metropolitan Life Building, up on the top floor, right under the pyramid, right by the Flatiron Building.

*That's a long ways from the Canyon!*

Yeah, New York's a good place to visit, but not to live in.

*Well, back to Dinosaur, what was the deal there? Hardly anybody knew about rivers, and then all of a sudden this fight kind of geared up.*

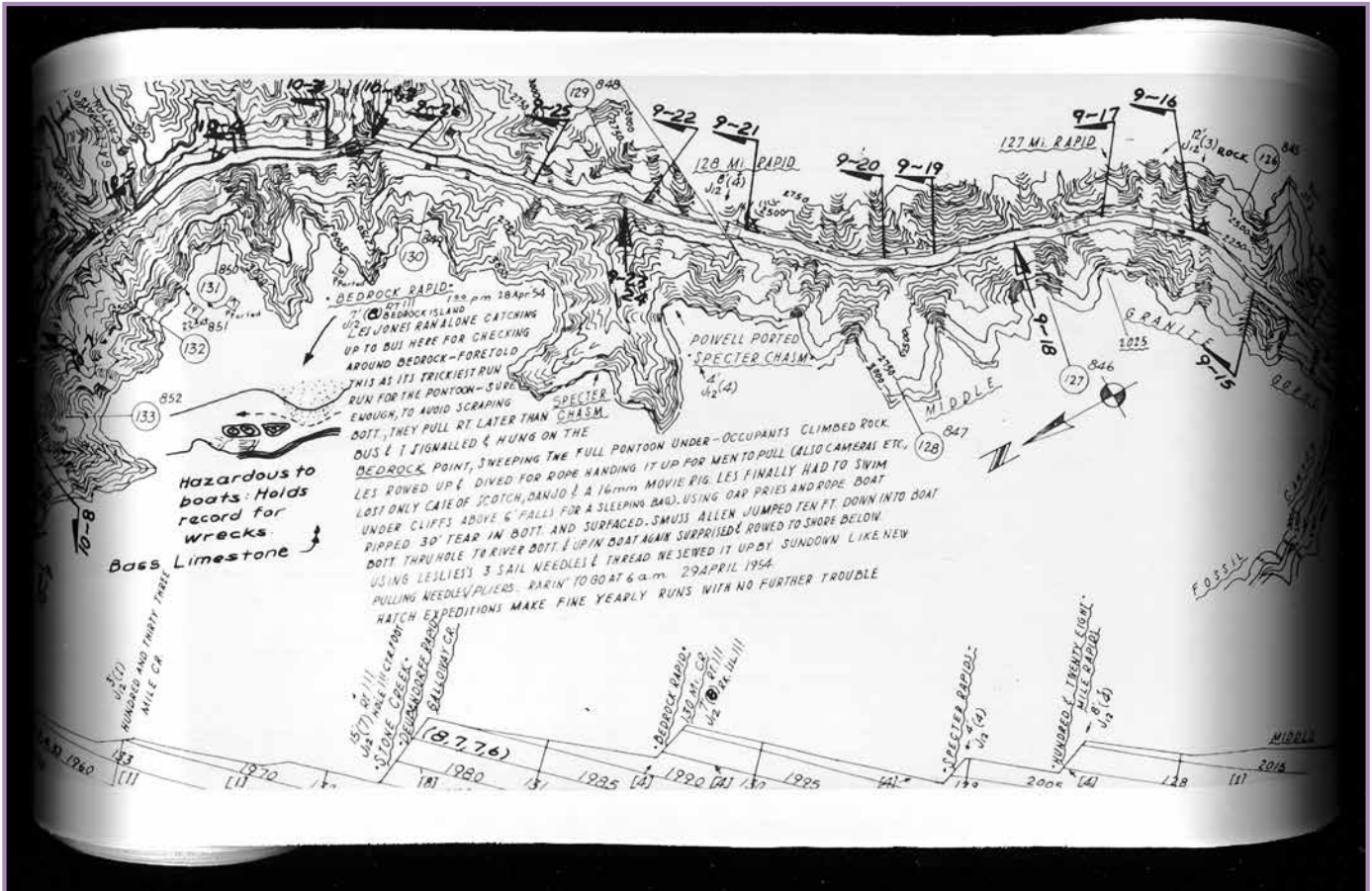
The controversy over the dam helped get the whole recreation aspect of river running going. And then I pointed my maps in that direction, toward conservation,

naturally. And there was always conservation notices on every map I sent out. So that and the Sierra Club kind of helped get everything off the ground. Then everybody else took over...it was the publicity of the national controversy over Dinosaur that really got the recreation business into the river running field.

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*Your maps really are important. John Cross, Jr. said, "I ran all these rivers down here, and it was just me and Les Jones." And there were a lot of people like that...it wasn't that you were there with them, but you were there with them in the form of your map. I'm curious to hear a little bit about how you'd go about making those maps: just kind of what they were like and what work you had to do, to do it, just to get 'em straight and get 'em done.*

The outline of the maps was taken either from aerial photographs and drawn artfully, or traced directly from the contour maps of the U.S. Geological Survey, putting the river end-to-end, instead of cut up in segments like the usgs did, and putting the north arrow to suit



A Les Jones scroll map of the Colorado River from Lees Ferry to Diamond Creek. This portion above shows the run from approximately 127-Mile to Dubendorff.



the map, instead of trying to keep everything oriented to the top of the paper. So I could line the river out on a seven-inch scroll strip and then take it from one end to the other, without having to run off the scroll, and make as long a sections as I could of river, before I bent it. And then putting a profile of the river usually above it, and sometimes below it, wherever it fit best. So the fellows that bought my maps used to say, "Well, I just ran the profile." They'd go so many miles and hit another rapid. There it was on the profile, so they quite often didn't even bother to look so much at the plan as the profile. But I think the fun of running the rivers is to see the plan too, and see how the river bends and where the side canyons are, and all that kind of thing. So anyway, that's the way the maps are built. I admire the patience of everybody while we had to put them on paper, for lack of mylar. Then we put them on mylar, and that doubled the price, because it's much more expensive, but it's the only way to go. So I'm looking for a new way to put them on mylar with a Xerox-type operation, but I haven't found it yet, successfully, so that the maps will be more permanent and not subject to light so much.

That's the story of the maps, essentially. They're available today, but I have never advertised them, because I plan on being away for a couple of years, and don't want people hangin' fire for a map. But when I get back, I'll probably make it more public.

*Where are you going?*

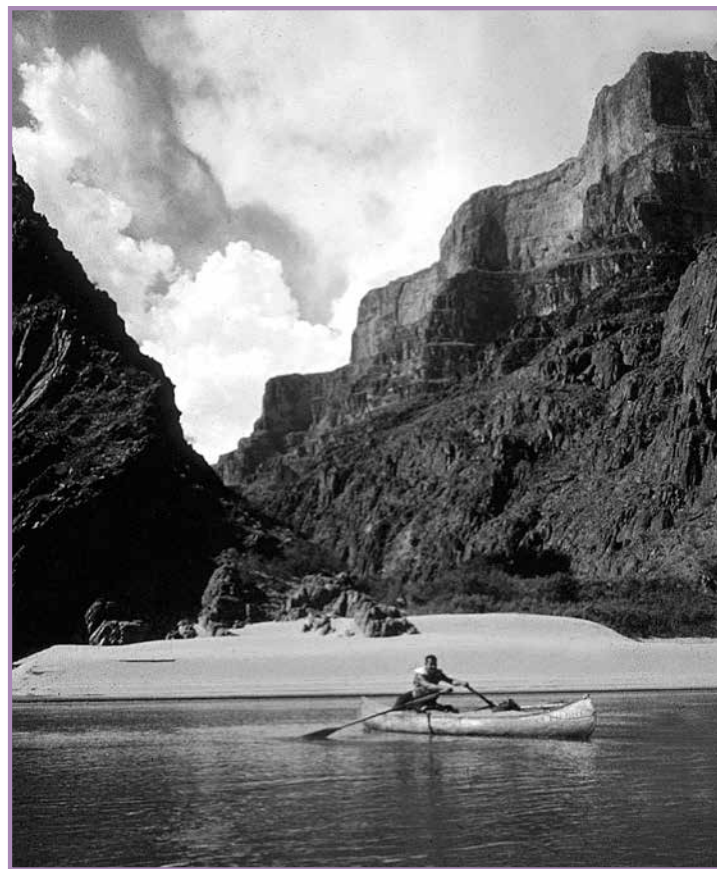
Well, they keep begging me to go on a mission for the LDS Church, so my wife and I probably will.

*When you were makin' the maps, did you do most of the field work solo? Was it on those solo trips?*

Most of 'em were solos, yes. I did make a map or two from the direct information of guides on the rivers that was made available to me, like the Rogue River. A guide up there—Glen Wooldridge, it was thirty years ago—gave me the information to make that map. Did a very good job of it, so that's been available. But I've never had a chance to get to Oregon, down in that region, to run it. But practically all the others I've run solo on my own.

*Was that how you started kayaking? I understand you've built some really interesting boats, and am curious about how you came to design them.*

Well, the reason for those boats was my first boat that I bought was a canoe, built like all canoes, with ribs and long thin pieces of wood, and canvas over the outside. I armored it with aluminum and ran the Grand



*Rowing the canoe through the Grand Canyon.*

Canyon. But canoes, even Grumman canoes, which I did run for a number of years, right down the Salmon, are, if they get pinned, too much of a freight train for one man to move. So I designed a boat that wouldn't be, and that was an aluminum 19 inch beam, 17 foot long kayak, with which I ran the Grand Canyon with Ulrich Martens. And I built four of those type boats—the others were 16 feet long.

The races over at Salida, I met Ulrich. He won the race there, and gave me a ride back from the end of the race to Salida town, and I thought that was very kind of him. Then I met him when I was with Walter Kirschbaum over in Carbondale. I wanted Walter to run the Grand Canyon with me in 1963, and he couldn't. Ulrich was there, and he said, "I'd like to." So Ulrich and his black labrador dog and his old car came with me and we ran the Grand Canyon. He wanted to take the labrador with him. He said, "Oh, he can run along the shore, you know." These German people come over here and think there's a little town every so often along the way where you can buy some beer, and your dog can run along the shore. I said, "No way, Ulrich." [We took the dog] over to Williams, and we found a family to keep him there. Ulrich did an excellent job of running through the Canyon with me. His glass kayak and my aluminum, we ran on 1,000 second-



feet, the record low water, which the dam held back for us. We ran everything but four or five rapids.... It was October of 1963.

*So Ulrich Martens and Walter Kirschbaum—and you—you guys are like pioneer kayakers.*

I'm not sure, Walter may have, the year before that, ran through. Don Hatch supported it. Certainly Ulrich's run with his kayak was the first unsupported, and one of the only unsupported kayak runs through. He was on his own and I was on my own. We didn't have any support boats.

*What kind of stuff did you take with you for camping gear?*

Oh, I took heads of cabbage and wheat that I soaked up, and beans that we cooked up. One time the beans went bad, and I was throwin' 'em away. Ulrich said, "Don't throw those beans away! I like a little alcohol!" I gave him the beans, he got a little high. (laughs)

*How long was that trip? How many days was it?*

Longer than I remembered. I told Ulrich, "We went through there"—this is about twenty years later—"took us about a week." And he said, "No way! Nineteen days." I said, "Ulrich, you're crazy!" I looked back in my photo record, and Ulrich was right, it took us 19 days. We didn't try to run too fast, we just enjoyed the Canyon. We could have got through a couple days sooner, but

nevertheless, it's all waterfalls, and everything was up and we had rapids where no rapids ever were before, so it did take time.

*Yeah, 1,000 cfs, must've been a million rocks and a million drops...*

But it was very beautiful. I mean, the most beautiful and memorable trip I've made, because so many beautiful rock formations were exposed, like in Hance. We come to Hance.... Well, at Unkar first, there was a five-foot fall all the way across the foot of the river, foot of the rapid. And at Hance, we came to Hance and there was nothing but a forest of great big huge rocks, so high that we couldn't see over them. We'd walk around among 'em, you know, and it was strange, entirely strange. Ulrich went over and went through the right side of the rapid and I went through the left side of the rapid, just a little water trickling here and there for our boat to run in. I come up to one rock at the head of the rapid, it was grated just like honeycomb cheese with hard white honeycombs just as sharp as a razor on the edge. If a boater ever got in contact with that thing, he'd lose some hide. But it was fantastic, walking through Hance. I'd never seen anything like it. Lava was a little bit like it, but not much. Lava was paved on the left side with a smooth sidewalk, right over top of the big waterfall on the left side—that was all paved over. We camped at Havasu also, and there was no outwash there—it was all bare bedrock, no sand

whatsoever. We camped there, however, the bedrock had ledges we could camp on.

*I guess you didn't see anybody else that whole trip.*

No, we never ran into anyone—a true wilderness run.

*Your boat—did you row? Did you have oarlocks?*

Had out-rigged oarlocks, just exactly like a rowing shell.

*So how'd that work?*

It worked great. I did have a repair job at Serpentine. I picked up a nail out of a board at Serpentine and did a repair job. A rivet or a bolt came loose and got lost, and so I riveted that nail in, and it worked because it went down to the end of the Canyon. Ulrich hitchhiked out with a float-plane from the bat cave, and



*Les Jones rowing the kayak through the Canyon in October, 1963, at 1000 cfs.*



Multimedia Archives, Special Collections Dept. J Willard Marriott Library, University of Utah.

*Grand Canyon 1963, 1100 cfs, Serpentine Canyon Rapid. Les Jones upset his boat 300 yards upstream and is coming around this rock on the opposite side as his boat.*

they had that seven-mile cable across the Canyon yet, running bat guano out on that cable. I towed Ulrich's boat down to Pierces Ferry, and this great big swampy mud bank, I had to cross, to get into the lake, to get across to Pierces Ferry—floating mud and everything. I got into it towing Ulrich's boat, and pulling both boats past me, and finally I said, "No way." So I got in and pulled the oars and I made one foot, bending the oars so far they almost broke. And so for three hundred yards, I made one foot to the stroke, standing right up out of my seat to pull those oars. And the next day Ulrich came up and looked down there, he said, "What made that big track out there? It looks like a big old gooney bird walking along." I said, "That was me rowing across the mud, Ulrich." He said, "I don't believe it!" But the oarlocks worked, they were solid.

*Did you take a lot of movies of that trip? Or of all your trips?.*

Ulrich took thirty-fives [35 millimeter photographs], and I had a big four-by-five camera I packed in my boat, Graphlex, a new one. And I took a number of slides of it too, but naturally Ulrich could out-photo me. Every time

there was action, he was right there at the right time at the right moment with the right stuff to get camera work done, and he had a magnificent set of slides. And I got my copy and that doctor in Berkeley got them and never gave them back to me, and Ulrich got his wet. I've got a few left, I showed the guys on the trip here.... I had [the doctor's] name until I tried recently to call him, and he's long since probably died or something. But total loss, total wipe-out: we both lost our film. And such fine photography! He was the greatest.

*How did you come to put a.... You used to mount a camera on your helmet. How did that...*

Obviously, every riverman's problem is his camera and what to do about it. I just figured, well, I'd get it out of the way and use the only tool I had, so I wouldn't be bothered with my hands, and put a trigger in my mouth with a water-proof cover for the camera, which was a movie camera at the time. And it worked fine, I got beautiful shots through.... I know they were good, through Badger and Soap and House Rock. I lost it at House Rock. I got good film at House Rock, and that last thing bumped me, and it went out.... I lost my





To his lasting irritation, Jones's novel camera gear earned him the nickname "Buckethead Jones"

balance, and somehow it got down over my face and I shoved it off. I was (chuckles) in action, you know. And I thought, well the thing would float, it didn't float. I mean, it probably floated, but it was floating so low I couldn't see it in the muddy water.

*So all that film that you had shot was lost too?*

Gone.... I came in the next spring to Phantom and went on down with a new outfit.

*Still with the camera right on your helmet?*

Yeah. And I made an excellent series. I lost some of it in the lower end by my own foolishness, but I got about a full reel of the lower canyon. So I told Bob [Webb] that I'd give him my can with the original and he could do everything he needed to do with it, and then mail it back to me.

*So after that trip in 1961, had you come down there since then? When's the last time you came down here?*

The first trip was 1953, the second trip was 1961. I think it was 1961, not 1962, but I'm not certain of that. Anyway, it was Ron Smith and Larry Allen down

at Bright Angel. And then my brother-in-law Klaus Axeman from Bright Angel down to Lake Mead, Pierces Ferry. And that was on 2,500 second-feet. Dock Marston came in, in 1962, I think it was, the year just before I ran in 1963. He ran on 2,500 cfs trip with sportyaks. Ulrich Martins, as I mentioned, came in, in October of 1963 and ran on 1,000 second-feet of water. Then there was another trip with geologists: Foos from back East in 1966, with Ron Smith with big rafts.

*Is this [the '94 Oldtimers Trip] your first time back since 1966?*

This is my first time back. Nobody could have talked me into running it again except for the work that [Bob Webb] wanted to do, cause I wanted to remember like it used to be. I've enjoyed this run so much that I don't think it's lost that much. There's, in fact, a gain in seeing other people enjoy it so much....

The other thing that I decided to do, once I got into the Canyon was to make a continuous photo record of the Canyon from one end to the other with thirty-five mil [millimeter] film. Unfortunately, from Horn to Bass my camera didn't roll a roll of film through—my fault—but I'll have to come back and get that, in order to complete the set. But I think it'll be a good set, and it'll be valuable for research and other purposes. I'm going to talk to Ted and Bob about the best way to set that film up, as you and I have already discussed.

*How has this place changed since 1953, 1961, to now? When it comes to the work at hand, how has it changed in the time that you've known it, and what's stayed the same?*

The biggest change is obvious: There are all these boats on the river. And the campsites are heavily used. But I haven't found that too negative. These big walls are never going to change, essentially. The biggest geologic change has been debris flows, and that's a natural thing, has occurred before and it'll occur again, and it'll be swept out and it'll be swept in. So other than that, the Canyon is still just as great an adventure as it ever was. I encourage people to come see it. They won't be the first, but it'll be the first time they see it, and that's the main thing.



Were the beaches different, back there in the fifties and early sixties? Were they different in size and were there as many tamarisk trees? Is that very noticeable? Or does it seem to be pretty much the same?

As far as I can tell, there's more debris washing into the river, than like Bob said this morning, "than the river can take out." And the debris seems to be building up. But we need the river to be in here to wash the beaches clean to keep the tamarisks back, so there will continue to be camping spots in the Canyon. That's the main thing that I see right at the moment.

The debris is coming in faster than the river can handle it anymore. It probably used to be able to come closer to handling the debris coming in, than it is now, due to the dam. And we need more high flows to wash the tamarisks out and keep them back off the beaches far enough so we have beaches for camping.

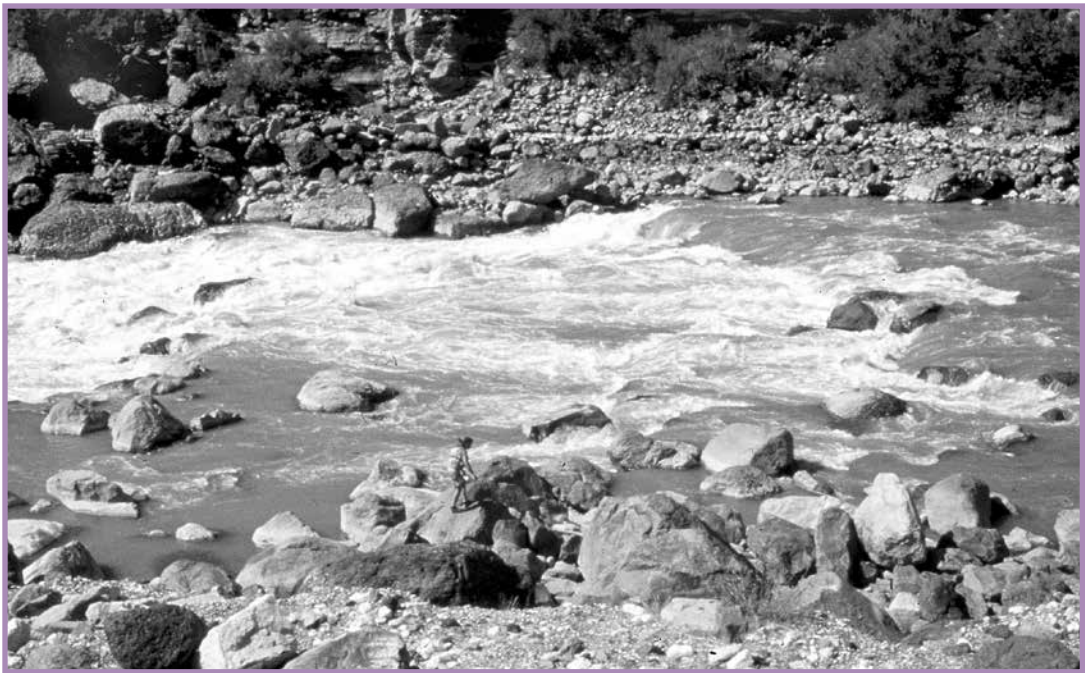
*Are the sandy beaches about the same size as they were?*

Well, no, I'd say that due to the debris flow, there's more rock in, and less sand. And there's less sand, also, mainly due to tamarisk taking over, like they do at Unkar and a couple of other places I've seen. That's going to be, I think—the tamarisks taking over beaches—is going to be one of the biggest problems.

*Do you see any difference in the Bureau of Reclamation then and now?*

Yes, I just hear that there's a difference, that they're much more.... They recognize, I think, that they have to listen to the voice of the people, back then people were ignored, back in the fifties and sixties, until we got their attention. I think this is a healthy thing for the Bureau of Reclamation and for the people, so we can work together to do what we have to do for energy, but at the same time, have our cake and eat it in places like this, through good, cooperative planning.

*Now back to that Hatch trip: What was Smuss Allen like? And would you just tell us a little bit more about that*



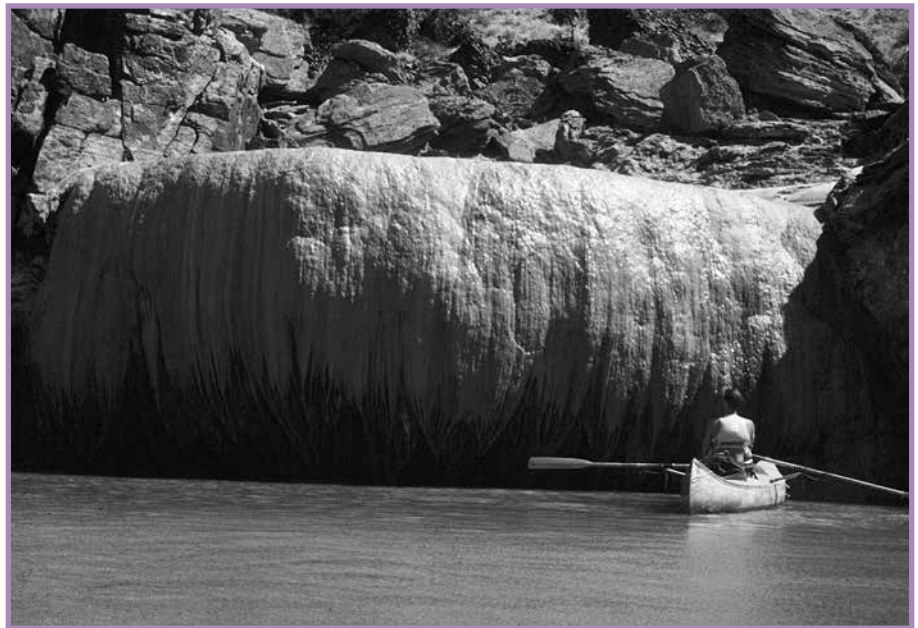
*Checking out the run in Lava Falls at about 2500 cfs, 1961.*

*trip? Because I know you have these pictures of these guys stamped on Bedrock and that's kind of historically...*

Yeah, I had some pretty good black-and-whites that I gave to Bob. Smuss was at one time the Mayor of Springville, out of Provo. Like I mentioned, he ran Bedrock with me and probably due to poor old Don's signalling us from shore, we went right over the bedrock, which we were tryin' to miss. But he came down with us and ran the boat that didn't quite make it around that rock, around the beach ahead of the rock, and there was more room at the time than there is now, but the water was shallower out there further too, so I'm a little split on just exactly what his chances were. I suppose they were fifty-fifty to get by there, and he came up short. He pinned it right on the nose of the rock, and it sunk, probably just went down slow and then slipped under, and washed out a lot of stuff and a lot of dudes, and they all went up on the point of the rock, standing there. And Bus and I realized what had happened, so we landed on the lower end of the rock, and I ran back up on the rock's nose and went down in the boat and got rope and pulled it up and gave it to the passengers, and they pulled the boat up. And as I mentioned, it split, and Smuss jumped on the boat and come up from the river bottom with a surprised look on his face and rowed it into shore and I sewed it up that night. One tube was a little flat, and the bottom had been split out, but we fixed it and ran Lava Falls and the rest of the Canyon just fine. But Bedrock remains today, in the opinion of the boatmen that we've talked to, as well as Don Harris and my identification of where they were going to have

trouble with that trip.... it remains the one single real hazard in the Canyon. The rest of the rapids will get you, but they'll sweep you out without...usually without more than maybe a bang or two on the boat. But Bedrock will wipe you out.

*Yeah that's my least favorite rapid too. I hate that place. There was one story about, Brad was telling me this one, I don't know if you want to get into this or not...up to you. Brad was telling me you told him one that just had him rolling on the floor, about your [glass] eye.*



Multimedia Archives, Special Collections Dept.  
J Willard Marriott Library, University of Utah

Well I parted company with [the real one] in an explosion when I was 15 and...so about fifty years ago... I'll just be brief. Got lost in the spud patch and we said a prayer that night and my wife found it way down under the spuds on a leaf the next morning. So that's the faith-promoting story. Next time I left it on a coffee table and the dog 'et it. I poured the dog full of peroxide and pretty soon it burped in the bathtub and there was the eyeball on top of the burp looking right up at me. So the third time was the final one. I had a root canal done by a dentist and he wasn't a root canal expert. So he drilled down through the root and said "I can't get that stuff out from below there so I'll give you some antibiotics for it...caused such a ruckus it shrunk the eye socket. After that I said forget it. I'll use a patch. Forget the artificial.

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There's something I think I'd like to mention in front of the group sometime. I'll just really brief it here: In this canyon we've cut down by draining inland seas and cutting a new channel through here to the sea, or deepening it or robbing it or whatever. But we know there was a lot of water running through here at that time, and that's what cut the canyon. Right now it's accreting material in the bottom instead of cutting, so to speak. There's an analogy we can draw from a river up north that I'd like to bring in in order to help visualize what was really happening here. I think it will. The Frazier River, Alan Neal and I ran with a 17 foot Grumman canoe with oars and a paddle. We started just below Prince George and ran through the Cascade Range. The first thing I want to mention: it was

*Contemplating the great pumpkin.*

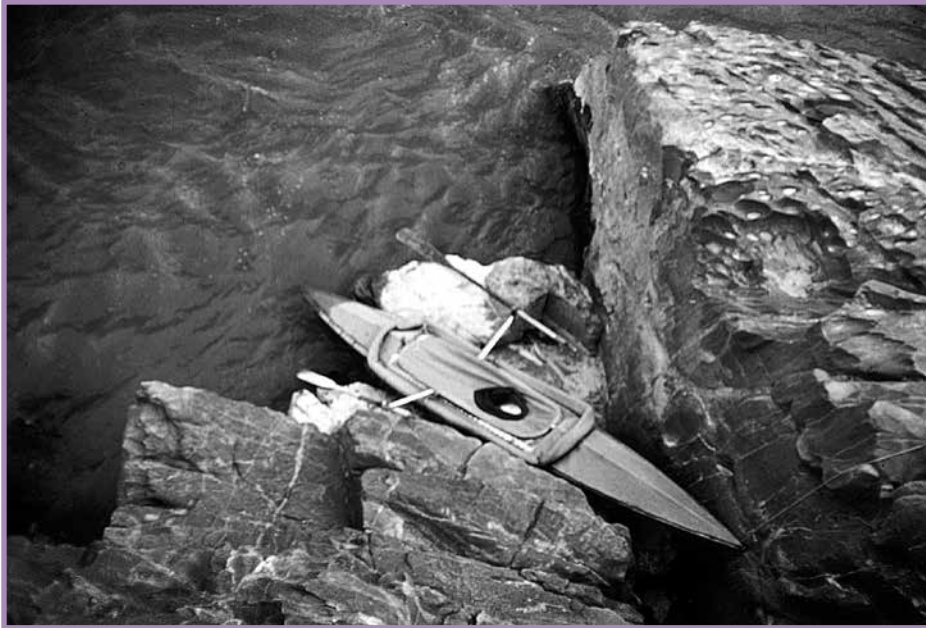
running about 300,000 second-feet. It had a one foot to the mile gradient.... This is the first thing you need to realize: Size gets it away from friction, and speed increases. The second thing is, the depth and the volume. When we went through the Cascade Range, we made like 110-120 miles a day, because of that velocity.... So that's the type of thing to get an idea of volumetric flow, it was running about 15 miles an hour through the Cascades and about ten miles through the Caribou. And it run up to 700,000 second-feet. Now the McKenzie runs a million second-feet, the Mississippi runs more than that. But you can visualize, probably if it was around 700,000 or thereabouts in second-feet going through this Grand Canyon Gorge, in a manner just like we see going through these rivers up there now, for however many years it took to stabilize and drain those lakes and change the weather pattern from a very wet one to a dry desert one like we see now. That was the cutting mechanism of the Grand Canyon. When you get that much water cutting through this more narrow chasm in the Grand Canyon, it has tremendous cutting power, and that's what cut the Grand Canyon through all those years.... It would be much more violent, but in some ways, it'd flow a little easier. But down there on the bottom, it'd really be cutting. And the velocity through here at five-foot-to-the-mile drop would be great enough to be a tremendous cutting mechanism.

*Do you reckon it'll ever get that way again?*

*I'd like to be around to see it!*

*I think it will eventually. I think you'd have to stop water*





Les Jones's rowing kayak—19 inches wide, 17 feet long.

from wanting to get to the ocean, to stop this process here. It might be 200–300 years or so but.... I don't see how we can move that much silt that's going into those lakes now, as much as there is...

Geologically speaking, that'd go in a blink. In man-time speaking, it's forever.

Remembering it like it used to be, what are the best parts of that memory?

Wilderness feeling. But you can run it in the wintertime now and get that. So I don't think that's lost entirely.

I wonder what it is about the wilderness that's so appealing.

I think you feel like you're alone with your Maker. If you have less outside influence disturbing you, you can commune with whatever the powers be that formed all this, a little bit better. But they set it up right, that's the main thing. Anybody can come down here and find a time when they're alone if they really want to, and prepare themselves for it.

Just one last word, and then I know you guys want to fold up here, and that is that when I ran the Canyon first—and I want this to be an example—I'd never seen it, but I knew every rapid in it from one end to the other, by heart, and everything about the Canyon. You don't have to know it quite that well, but you should do the best you can to know what you're getting into, before you get into it. And you should have your equipment in such condition that whether you come out or not, that equipment is going to come out okay. Then you don't have to worry about your equipment—all you've got to worry about is yourself. Then make sure

that you're in pretty good condition. After that, not before, you got the license to run the Canyon—or wherever else, or to climb the mountain, or whatever you want to do. Be prepared, in other words.

You said you knew the Canyon by heart? How'd you know that? You did a lot of homework before you came?

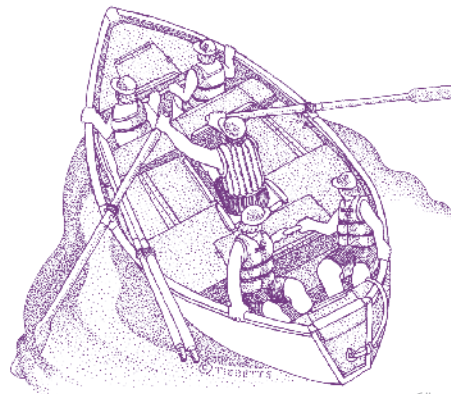
Well, I made the maps. I had an advantage over other people because I memorized from the maps too. But I would have done it anyway, to a certain extent, whether I had the maps or not.

So you'd get the USGS maps before you came down here, and just lay 'em all right out.

I made my scroll map before I came. That was the 1923 trip, the contours that I used, [the Birdseye] expedition.

That was the one that they surveyed—not aerial photos or any of that?

They were made and taken only as the contours that would go to the head of whatever dams they were proposing. So they'd propose a dam and draw the contours to that level. That's why they're really skinny in here. They only go up these walls a few feet right in this section. See the few skinny little lines out there? I probably should go back in and take the other contour maps and plot in a few more contours. But I don't know whether it'd add or subtract, so I haven't done it yet. Most of the Canyon, the contours are quite high.



Ellen Tibbetts



## Return From Havasu

**A**N 18-YEAR-OLD GIRL was swept over a 15-foot waterfall and survived only with the help of skilled rescuers. This is a story of a miracle that happened on a summer river trip in the Grand Canyon in 1998.

The accident occurs on the second to last day of a six-day trip down the river, in a side canyon named Havasu. This account is written from two points of view. The first is from the rescuer, (Tiffany George) and the second is by the victim (Sylvia Leimkuehler).

### Tiffany

The afternoon went as usual, ran into Kenton and the crew up above, had a good chat and decided to rendezvous with them below the Zoo to drop them off some ice and some food. We had taken everyone to the "Ruby Pools" area and set a return time at which we were to meet at the first crossing and return as a group back to the boats. I believe it was 3:00 PM. Sylvia, an 18-year-old lifeguard from Ohio, (probably 110 lbs., soaking wet with all of her clothes on), had headed up the canyon to go see Beaver Falls. She wasn't hiking alone—another 18 year-old male passenger, Derek, and Kim, a 40 year-old man from Tucson (a very experienced Grand Canyon hiker) went with her. We were looking at our watches at ten minutes to 3:00 wondering which one of us should go up and seek them out when they came around the corner, right on the nose at 3:00 PM. Perfect ending to a perfect afternoon. Or so I thought.

I told everyone to gather his or her things and we would start off back to the boats. At this point we were just below the first crossing on creek left awaiting their return. The three of them came down towards us, and I instructed them to cross a little bit higher as it was shallower there. The two guys crossed without incidence and never went into water that was above knee-deep. Sylvia was the next to cross; she entered the water at exactly the same place and began crossing. I was sitting next to another guide, Brenda, chatting when I heard some excitement and glanced back at the creek to see Sylvia face down, feet first, heading toward the falls. I yelled to her to get out of the water, thinking she was just horsing around and cooling off. When she didn't respond panic set in and I was already on my feet, screaming her name, when she caught the current that sucked her over the edge of the waterfall. I was already running for the pool below.

Tearing off my bum pack and throwing it on the ledge with my shirt, I scrambled my way through the

boulders down to the pool. Suddenly everything was different—complete havoc at light speed! She didn't flush out the bottom! Kim, the guy who had taken them up the canyon, was on top of the boulder to river right of the falls, screaming hysterically, calling her name, and sobbing. I dove under the water to try and pull myself along the bottom to get to her, only to find myself at the surface three feet further back, sans shoes. The water was just clearing from a flood so it was cloudy but not brown. I dove again and again only to find the same result—no Sylvia. I yelled up to Kim, who was sobbing and screaming her name, "Do you see her?" "No," he sobbed. Then I yelled at him to shut up so I could hear if someone else had seen her. I looked around me and noticed that Bob, her dad, was also next to me, across the current and diving for her as well.

I told Kim's son (all of 14 years-old) to position himself at the bottom of the pool, not too close to the vortex of the next falls but close enough to the current so that he could catch her if she washed out. It was then, when I looked back to the waterfall, that I saw movement, I swear I saw reaching up through the falls, an arm! I couldn't be certain because the moment was so frantic and my mind was racing a million miles per hour; but it was enough motivation for me to yell to another guide to get a rope or a long branch to reach to her in the waterfall. At this point it was going on two minutes that she had been under. Ian, the other guide, ran up the trail and was twenty feet over my head when I heard someone shout, "There she is! There she is!" I turned to my left and saw her floating, face down and lifeless towards the lower end of the pools and another small series of rocky falls. I screamed to the young guy in the pool, "Grab her!" He held out his arms and she floated lifeless into them. If I thought I was frightened earlier, I was truly horrified now!

Kam, another Western guide, and myself raced over to the young guy, grabbed her up and carried her over to the side of the creek and onto a ledge on river left. We laid her on her back and for a split second I was waiting for her to respond, but there was nothing. I kept thinking "ok, cough and puke like they do on the movies, c'mon Sylvie, cough and puke," but nothing happened.

From this point on it was very surreal. I looked at her face. She had a laceration from the outer corner of her left eye clear over to her hairline. She had bitten through her bottom lip (just under it) and her lower lip had then been torn on something, probably the sharp travertine. One of her front teeth had been pushed all the way back in her mouth; her left cheek-

bone was puffy and discolored, and there was dark blood, mixed with Havasu water, running down her face. But the most remarkable feature were her eyes, staring and fixed—Doll's eyes.

Then she went from whitish blue to *blue blue*. My next words were, "Ok, she's cyanotic." I felt as if I were in some sort of trance and everything was happening in slow motion. In my mind I was thinking, "You're not going to die on my trip, not today," and I was pretty determined. Ian reached in and felt for a pulse on her carotid and replied, "no pulse." I wasn't surprised but I think I chilled just the same. About the same time I opened her airway, squished her mouth together, (trying to get a good seal was difficult due to the trauma), and blew. I was amazed at how easily her lungs inflated, and when her lungs deflated there was a terrible moan, empty and hollow, yet she was still unresponsive. Kam was jumping into position to do chest compressions; Ian and I both yelled, "*not yet!*"

With new found strength, I repeated the breath, this time her eyes flew open wide as her lungs deflated but her pupils were still unresponsive. I was yelling at her, "C'mon Sylvie, *breathe!*" I held my breath, then she gasped, closed her eyes, opened them again, pupils dilated and constricted and she said, "I had the strangest dream. I dreamt that you all were standing over me calling my name but I couldn't answer you." I could feel the hairs standing on end up and down my spine when I heard her father, standing right next to me, say, "It's Daddy Sylvie, it's ok, I'm right here."

I think that is when I snapped back into reality because I thought, "my God, how long have you been standing here and how much of this did you actually see?" He saw it all. My heart ached for him; it was not pretty. I looked up at the cliff above me to see that Brenda had rallied her family together and taken them out of line of sight of all the action. I was grateful. They looked terrified. I told them she was breathing on her own and you could see some relief in their faces as they continued crying and holding each other.

Ian asked me what I needed as he was headed for the trail, I shouted back, "Backboard, Doctor's kit, ice, and a helicopter!" I then assessed her further to find a *large* hematoma on the back of her skull, just right of center, lacerations that went from her left hip down her leg, she also complained of intense pain in her left knee. The cuts on her leg seemed mostly to be superficial but jagged with the occasional deep spot. The facial/head trauma seemed to be the worst of it.

As her color returned so did the swelling in her face and her cheekbone was huge. We got her strapped down to a backboard, I held traction on her head, and we took her back across the pool, up through the boulders, and across the creek. I was

barefoot at this point having had my thongs blown off my feet from the force of the water. My bare feet were rolling off the rocks and I stopped and asked if I could borrow someone's shoes. Someone brought me a pair of thongs, and oddly enough, they were mine!

We took her back over to the ledge I had started out on. I sent everyone down to the boat, except her family, and administered to her wounds. She was in tremendous pain and I bade her not to cry, as it would increase the swelling in her face. She was very brave. We did some breathing exercises I had used teaching Stress Management classes and it seemed to work. I told her to stay with me when she seemed to be fading out.

The wait for the helicopter seemed like an eternity. Her family stayed and her mother, father and I were all together, with Sylvia in the middle, and me still holding traction on her head. When I changed the dressing on her face to add ice, Rosie, her mom, was sitting next to her. I warned, "Ok mom, she does have a bit of a cut near her eye," she did a great job of keeping it together when she saw the "cut" (a two inch laceration—eye to hairline) so as not to upset Sylvia, it took a lot of courage.

It was a good hour and a half before the helicopter arrived. There was actually some discussion on part of the helicopter staff about Rosie going out with her. They gave us some story about weight limits and such, the two of them together weighing maybe 220 lbs. This added another whole level of anxiety to an already stressful situation. Rosie calmly, but resolutely stated, "I am going out with my daughter." I certainly wouldn't have argued with her, she meant business. Thankfully, Ian got that resolved.

They moved her to their own backboard and then some real work began—we had to fire line her over the pinchy part of the trail, all the way back to the helicopter. She was *very* fearful, (as was I), but *very brave*. I gathered up a few volunteers, and stipulated no heroics. We then began the painstaking process of maneuvering Sylvia, strapped to a backboard, over a trail that was narrower than she was currently. And just to compound things, the trail ran alongside a sheer cliff that was about 40 feet high; a fall from here would have proven fatal. I was sweating bullets. The entire time I stayed at her head coaching her through the breathing exercises, trying to keep her focused, and she managed to go to the helicopter somewhat tear-free. I was relieved to see her get loaded into the helicopter, Rosie alongside her. Bob and Rosie exchanged some words, and hugs, outside the helicopter door as I turned and headed back up the canyon. It was an autonomic response; I just needed to get out of there.

Looking at my watch I was taken aback to see that it was only two hours from when she first slipped over the edge of that waterfall. It was my first opportunity

to be alone and just let it all start to sink in. I walked for the first 100 yards, then took off on a sprint. I don't know why I was running—I was just compelled. I went back to the scene and looked around for some loose items, although I knew there weren't any, and started back up the trail. When I got to highest point directly above the falls, I stopped to have one more look at the pool and waterfall, and as I turned to walk back to the boat, I thought to myself, "It doesn't look like a place somebody could die in."

Sylvia became ill and had to ride out the remainder of the flight on her side. Once in Flagstaff she had another lucky break, a plastic surgeon (waiting for an absent patient) was there and did a remarkable job of sewing her up. She was able to fly to Las Vegas and meet her father and brothers at the end of the expedition. She continued to recuperate both physically and psychologically over the next few months. Her parents flew us all out to Ohio so that our last image of Sylvia wouldn't be the one of her getting loaded on to the helicopter. It was a very wonderful, cathartic trip.

Sylvia continues to get better all the time and is a junior in Wooster College now. I still talk to her and actually skied with the Leimkuehler's last season, they are a very remarkable family and I love them a lot. Words cannot describe the connection I have with Sylvia, and always will; she is an incredible young lady. I have tremendous respect for her.

### Sylvia

I was hiking in Havasu Canyon on the trip that I thought was the best experience of my life. It turned out to be the best experience of my life in the end. It was very hot that day and Kim, Derek, and I hiked what seemed like forever. We made it to Beaver Falls and it was beautiful. Unfortunately we only stayed for a few minutes because we had to start heading back to make it to the meeting point by 3:00. We hiked very quickly on the way down and all three of us were exhausted when we finally reached the others at exactly 3:00. My brothers were jumping off the rocks into a pool below and everyone was relaxing across the pool.

Derek and Kim crossed over and I followed. As I was walking the water was cloudy and I stepped on a large rock. My ankle turned and I fell down into the water. The current was pulling me and I could not stand up. I tried as hard as I could to stand but the water was too strong. I managed to grab hold of a rock at the top of the waterfall and held on for a few seconds. I was looking across at my family and the others on the trip yelling for help but I could not hear them. The rock I was holding on to was very sharp and the water was rushing over my body with my legs hanging over the waterfall.

All at once I went over and I do not remember anything for about five seconds. I must have been knocked slightly unconscious as I went over. The next thing I knew I was under water and my leg was trapped in something. I could not see the top of the water and realized that I was trapped. I have had lifeguarding and CPR training and I knew that if I took even one breath of water in I would fill my lungs with water and drown immediately. I kept saying to myself "don't breathe in, don't breathe in." As I was doing this I was also trying to reach up because I knew they did not know where I was and if only I could get my arms high enough someone would see them and pull me out. At this time I was not aware of any pain or fear. I kept thinking I am not going to die like this, not today.

I quickly realized that they were not going to be able to reach me and I needed to get my leg free from the rocks, it was wedged in. I pushed and pulled and finally pushed one last time very hard with my right leg and felt my left leg come free. Then I passed out from lack of oxygen.

The next thing I felt was calmness and a sensation of floating but no awareness of my body. I saw faces racing above me in rows. They were faces of almost everyone I knew in my life including the people on the trip. This seemed to go on forever until finally I could just see Kam and Tiffany's faces but nothing else, just black, then I started to see more but I could not hear. They were yelling it seemed like but I could not hear them or answer them.

All of a sudden it felt like I was there again. I could hear them and see them and I felt tremendous pain all at once. For a couple seconds I did not realize what had happened. It all came back quickly though. I remember my face hurting, not being able to move my left leg at all. I felt so scared and upset I could not understand what had happened, it was unreal. Tiffany kept talking to me and telling me to calm down, that I was fine. She was holding my head the entire time. She never left my side.

My parents would come and go talking to me every once in a while, I could tell they were upset. My oldest brother Jim was next to me as well, holding a towel on my face to stop the bleeding. He was so brave and he never cried because he knew if he did, I would cry too. Derek and Kim were also there helping to move me from one side of the river to the other and taking care of some of my wounds. Every once in a while I would feel as though my breathing was slowing and it might stop, I would start to panic but Tiffany would help me breathe by doing breathing exercises. I think that if she were not there to save me and breathe with me while we waited for the helicopter, I might not have made it. Tiffany was my guardian angel that day. She will always be in my heart.



It seemed as though we were there forever, for hours and hours. Finally the helicopter came and I remember Ian coming to tell us it was here. Kam, Ian, Tiffany, and Brenda gathered some of the people on the trip and I remember seeing each of them as I was passed up through the rocks to the helicopter. It was a relief to be in the helicopter, on an iv, and flying to a hospital. Even though I vomited the whole way there, for the first time I felt like I was going to be OK. Once at the hospital I only remember vague things. Getting a CAT scan and a surgeon coming over to stitch me up. I was in and out of consciousness the whole time I was there, and I would wake up from convulsions every once in a while because my body was in such shock.

I flew to meet my family in Las Vegas and was in a wheel chair for a couple of days because I had done some damage to my leg. I flew home from Las Vegas and it took months for me to heal. I was on crutches for at least a month, and my face took a while to heal because I had broken my orbital bone. I still have all my scars but they are fading and they are nothing compared to what could have been.

Death is not scary or painful or anything. It is not something that can be explained. I remember exactly how I felt the whole time I was unconscious I guess and I will never forget that either. I am no longer afraid to die and I feel that I was saved and given the rest of my life for a reason, and until that has been fulfilled I will be here. It is always in the back of my mind and for some reason I will never be able to put it behind me. Maybe that is because I don't necessarily remember it in a bad way. It has changed my life in so many ways and it is not something that I will ever forget or get away from. I still have nightmares and I probably always will, but I also have an experience that very few people in the world have. I have been given a glimpse into death and what it feels like. I thank God every day for my life and for the experiences, even this one that shapes the person I am today.

## Cryptogamic Soil

Encrypted, both in the sense of being hidden in earth, and of being protected by code. It humbles our fumbling science.

Certainly it lives for it grows, if undisturbed, among the junipers, flaking the shales and grits, through which infrequent rains

run with a minimal wetting. Slow growth, of course, imperceptible to the scale of human generation, a black scurf, a puzzle

which defies the laboratory. Its symbionts refuse to show themselves on agar and remain neither named or tamed to domestic use, but are still vulnerable

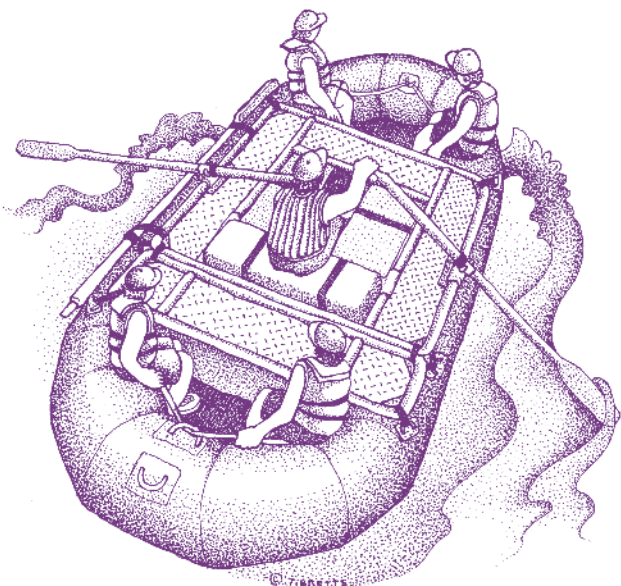
to the footsteps of those of us who so need the beauty of these molded grand plateaus with their varnished drop-offs, their red and black, their unexpected

outbreaks of porous volcanic stones, rounded in the crash of once-in-a-lifetime floods. Oh what a burden of pity and guilt to know our merely being here

crushes this crust, this holder of water, this minute series of dams against cloudburst, this holder of secrets, this living thing which could have been

immortal!

John Van Peenen



Ellen Tibbetts

# Beam Me Up: Calling for a Helicopter Evacuation from the Grand Canyon

**A**RGUABLY, MUCH OF THE GRAND CANYON is as inaccessible as any other place on Earth. The availability of helicopter evacuation makes this hostile area an acceptable tourist destination for thousands of people a year who otherwise would be foolish to enter. Fortunately for all concerned, most helicopter evacuations from the Canyon and Colorado River are not for life-threatening situations. Some are not even medical problems, such as several calls last year to pull high-centered motor rafts off rocks.

It is easy to take the park helicopter for granted, but consider that, without this asset, there are popular places in the Canyon from which it would take longer to get major medical attention than it would have taken an injured Apollo astronaut to return from the Moon.

To access this resource requires some knowledge, preparation, and equipment. There are basically two ways of making your call for help. Like most technical things these days, you have to know which buttons to push.

## The Best Way: Get a satellite telephone

A satellite communications system that works well in the Grand Canyon is Globalstar. Many of the Park Service Rangers in the Canyon are carrying Globalstar units. The handheld receivers, made by Qualcomm, are not much larger than a standard cellular telephone and are available for rent from half a dozen dealers around the US. Expect to pay \$100 a week plus two or three dollars a minute for calls. Don't lose the unit—a typical deposit, refunded to your credit card when the satellite phone is returned, is \$1,000. Find information on Globalstar USA's dealers and rentals at their Web site: [www.globalstarusa.com](http://www.globalstarusa.com). Also, at least two river outfitters are including sat phones at no additional charge when a complete spread of equipment is rented from them.

Wherever you get the units, I recommend actually placing a call or two before you leave civilization. Read the instructions: the Qualcomm units automatically double as cellular phones, so be sure you're accessing the Globalstar low-orbit satellites and not some cellular antenna behind the Flagstaff K-Mart. Then recharge the batteries and don't call your friends from river camp. What if you have to make more than one emergency call several weeks after launch? It's my experience that rechargeable batteries have a lousy shelf life and

you want to be prepared for the worst until there's a pay phone in sight.

## Know where to call and what to say

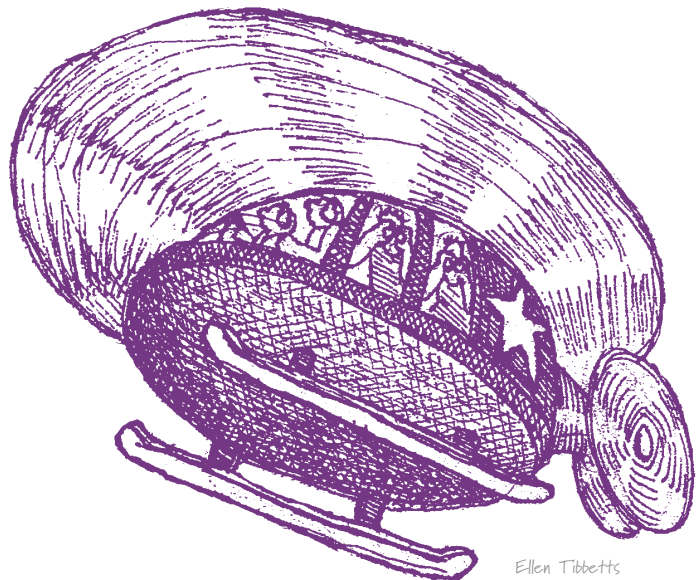
For an emergency evacuation, call Grand Canyon Dispatch at 520-638-7911 or 520-638-2477. (Note: 520 area code will be changing to 928 in late June). Be prepared to tell the operator:

- You are requesting a helicopter evacuation at river mile such-and-such (or a landmark) in the Grand Canyon;
- Whether the patient is critical or stable;
- Whether the problem is trauma (injury from an accident) or medical;
- Whether the patient is on a commercial or private boat, or is a hiker.

## Prepare the helicopter landing site

River Trip Regulations, Supplement C, explains how to prepare an acceptable site for the helicopter. Read these complete instructions, but here are the highlights:

- Select a level area approximately 15 feet by 15 feet, clear of obstacles such as trees and large rocks for a diameter of 75 feet.
- Set up an "X" with orange signal panels (not on the landing zone) so the pilot may distinguish your party from others in the area. Remove the panels when the pilot locates your position in case he selects that site for landing.
- Remove and/or secure all loose equipment (clothing, sleeping bags, tables) so if the pilot flies over your camp, items will not be blown into the rotor blades, your people, or the river.
- Wet down as much of the landing area as possible so sand will not be blown all over, especially into the helicopter's engines.



Ellen Tibbets

- Stay together in a group away from the landing zone and in full view of the pilot.
- Indicate the wind direction by throwing sand downwind or standing with your back to the wind and pointing downwind with both arms.
- Stay away from the helicopter unless directed to approach by the crew. Walk in a crouched position to avoid being struck in the head by the rotor blades.

At this time, there is only one helicopter dedicated to rescue in Grand Canyon National Park. It is used for about 350 evacuations a year, but during the summer it could conceivably make eight rescues a day. Far and away, the majority of these are hikers suffering minor injuries or heat exhaustion. Packing a disabled hiker out using manpower can take ten people half a day, while the helicopter can pluck them out in fifteen minutes. But when several calls for evacuations are coming in, Dispatch needs to prioritize them and determine whether basic or advanced life support is needed. With a satellite phone, your call can be transferred directly to the life support personnel so they can tailor the response and not tie up critical people and equipment that might be needed elsewhere. Also, there is the question of where to take the patient. Minor injuries usually go to the Grand Canyon Clinic, major ones to the Flagstaff Medical Center, but that requires coordinating an air or ground ambulance. Finally, the helicopter flies only in daylight, defined as being from thirty minutes before sunrise until thirty minutes after sunset. That means it must be back home on the ground outside those times.

### **The Next Way: Contact over-flying aircraft**

If you want to use an aircraft transceiver to contact over-flying planes for your emergency calls, or to talk directly with the inbound helicopter, or even as a backup to a satellite phone, here are some things that will increase your chances of success.

#### *Aircraft transceivers*

Several river outfitters rent a package with an aviation transceiver, signal mirrors, and orange marker panels for \$10 per day.

You can buy several good communication transceivers (“com” units—no navigation capability) for under \$300. One such unit is made by JRC, the JHP-500, listed on Blue Sky Flight Club’s Web site for \$279.00: [www.fly-bluesky.com](http://www.fly-bluesky.com)

It is fun to use these radios to listen to aircraft/controller exchanges when you are near an airport. But beware: unless it is an emergency, any non-aviation transmission is illegal. Your next call will be from an FCC jailhouse phone. And don’t use them onboard a commercial flight, even for listening.

Civilian aircraft (airliners, private airplanes, and

non-military government aircraft) communicate with ground controllers and each other on certain discrete frequencies from 118.000 to 136.975 MHz. These transmissions, because of their high frequency and low power, are only reliable for line-of-sight communication. If you want to communicate with an aircraft, you had better be able to see that aircraft. The signals might bounce off canyon walls and get to an unseen plane, but that phenomena would be localized and intermittent.

#### *Private aircraft and commercial air tours*

In daylight, low altitude private aircraft and air tour operators talk to each other on three different frequencies depending on which of the FAA Grand Canyon communication sectors they are in. The approximate Colorado River stretches underlying the sectors are:

- *East:* Lees Ferry to Kanab Creek (mile 143): 120.050 MHz
- *Central:* Kanab Creek to Diamond Creek (mile 226): 127.050 MHz
- *West:* Diamond Creek to Pearce Ferry (Lake Mead): 121.950 MHz
- *Other:* Grand Canyon Airport tower: 119.000 MHz

These aircraft are typically operating at a relatively low altitude above ground and move quickly out of sight. Communication opportunities might last only a few seconds. Even if you can hear the engines, the aircraft could be in a radio shadow from your transmitter. Nevertheless, if you hear or see an aircraft in the canyon, tune the appropriate low altitude frequency. Give the same information as you would on the telephone, but you need to be able to give it in one burst due to time limitations. Ideally such a contact would go like this:

YOU: “*Mayday, mayday, mayday. Aircraft in the Canyon, do you read Colorado River trip?*” (Any pilot who hears “mayday” over the radio will feel his blood run cold. You now have his undivided attention.)

RESPONSE: “*This is Fly By Tours, go ahead.*”

YOU: “*Fly By, we need an emergency helicopter evacuation from the Colorado River. Advise ready to copy the information.*” (Pilot-talk for “write this down.”)

RESPONSE: “*OK, go ahead.*”

YOU: “*We need an emergency helicopter evacuation at river mile fifty-three, that’s five three, Nankoweap Rapid. The patient is stable with a broken ankle. Please contact Grand Canyon tower on one-one-nine point zero and have them call Grand Canyon Dispatch. Can you read that back?*” (The pilot probably has the frequency for the tower at Grand Canyon Airport, but this saves time and shows you know what you’re talking about. The aircraft might have to climb and even head toward the airport to contact the tower but I can’t imagine any pilot who wouldn’t be eager to help.)



RESPONSE: "Roger, understand you need a helicopter evacuation at mile fifty-three, Nankoweap Rapid, broken ankle, patient stable, tower one-nineteen-zero. Ah, who am I talking to?"

YOU: "This is the Carlos private river trip. Can you call me back after you talk to the tower?"

If two or more aircraft respond, try to use the call of the one who sounds clearest and the others should shut up. Note that you don't have to tell the aircraft what frequency you're on since pilots rarely listen to more than one radio at a time.

### Commercial Air Traffic

Most of the time, especially at night, you will have a better chance of contacting a high altitude airliner. Typically, jets over the Grand Canyon will be above 20,000 feet and in radio range for a minute or two. Virtually all of their radio communications will be with enroute radar controllers at Los Angeles Air Route Traffic Control Center (LA Center). The Center has many remote transmitter/receiver sites, including three for aircraft in the Grand Canyon area. Since those transmitters are at a higher elevation and optimized for talking to aircraft, your radio will probably receive only the pilots' side of the conversation. The frequencies are:

- High altitude: 128.075 and 135.250 MHz
- Mid altitude: 124.200 and 124.850 MHz

If your radio can scan frequencies, start with these four. When a transmission from an airplane is received, stop the scan manually so the radio will not go to other frequencies. Again, read the instructions. This is no time to be learning how the radio works.

Pilots should use their aircraft call sign for each transmission, so try to remember the airline flight number or private plane "N" number (e.g., "American four fifty-three," "Cessna November two three four nine Sierra"). The procedure is similar to contacting a tour aircraft. Here is how a contact might proceed:

(radio voice in mid-transmission) ". . . and up to three seven zero, Continental one oh two."

YOU: "Mayday, mayday, mayday. Continental, do you read Colorado River trip?" (Even airline pilots will sit up straight when they hear "mayday.")

RESPONSE: "If that's a mayday call, go ahead." (The airline pilot might want to confirm something he almost never hears.)

YOU: "Mayday, mayday, mayday. This is Colorado River trip. Say again your aircraft number."

RESPONSE: "Center, standby, Continental one oh two is getting a mayday call. Go ahead, mayday." (LA Center and other aircraft on the frequency will not hear you, so a good start is for the responding aircraft to tell them to

standby so your calls won't be blocked by their powerful transmitters.)

YOU: "Continental one oh two, we need an emergency helicopter evacuation from the Colorado River. Advise ready to copy the information."

RESPONSE: "Ready to copy."

YOU: "Please have Los Angeles Center call Grand Canyon Dispatch on the phone and request a helicopter evacuation at river mile one-three-one, that's one hundred thirty-one. The patient has severe vomiting, could be food poisoning, possibly critical. Patient is a passenger on Bottom Dollar River Trips. Please have Center confirm."

Response: "Ok river trip, standby. LA Center, Continental one oh two has picked up a request for you to telephone the Grand Canyon for a helicopter evacuation from river mile one thirty-one, patient has food poisoning, may be serious. You know how to handle that?" (You won't hear LA Center responding.)

"River trip, LA center wants to know the phone number to call." (The sector supervisor's desk at LA Center has the number of Grand Canyon Dispatch, but the controller might not know that.)

YOU: "Roger, Grand Canyon Dispatch is area code five two zero six three eight seven nine one one."

Alternatively, you could have the airliner contact Grand Canyon tower, 119.0, and have them call Dispatch, but the jet pilot would already be talking to Center and the phone in Palmdale, California works just as well as the phone in Tusayan, Arizona. (I guess you could ask the airline captain to go into the cabin, run his credit card through an Airphone, and make the call himself, but that's pushing your luck.) I suggested you have air tours and low altitude private aircraft call Grand Canyon tower because those planes might be too low to contact LA Center's remote site.

One note about an emergency frequency, 121.5 MHz: this is the aviation equivalent of 911, but few aircraft routinely monitor that frequency. However, if you make contact with an airplane and there is too much chatter on the normal frequencies, suggest a change to 121.5. Every pilot—airline, air tour, or private—knows that number, and there will be no other conversation on it. If feasible, ask that the evacuation helicopter be on 121.5 so the pilot can communicate with you when he is within range.

Of all the evacuations in Grand Canyon National Park last year, only fifty or so were from the Colorado River. But those were fifty lucky souls, able to get better medical attention within one hour than anyone in the world could get when Hoover Dam was built. This chain of communication, aviation, and medical technology is a manmade wonder that allows us to safely enjoy the natural wonder of the Grand Canyon.

Russell Thorstenberg, Jr.

grand canyon river guides

## Book Review

**A**LONG THE LINES of the successful 1995 *Death in Yellowstone*, but without the bison gorings and thermal cookery, the double-doctors (one a Ph.D., one an M.D.) Michael P. Ghiglieri and Thomas M. Myers have really gone over the edge this time with their research in *Over the Edge: Death in Grand Canyon* (2001; Puma Press, PO Box 30998, Flagstaff, AZ 86003). Authors of previous books *Canyon* and *Fateful Journey*, among others, the GCRG members have compiled the “gripping accounts of all known fatal mishaps in the most famous of the World’s Seven Natural Wonders,” the Grand Canyon.

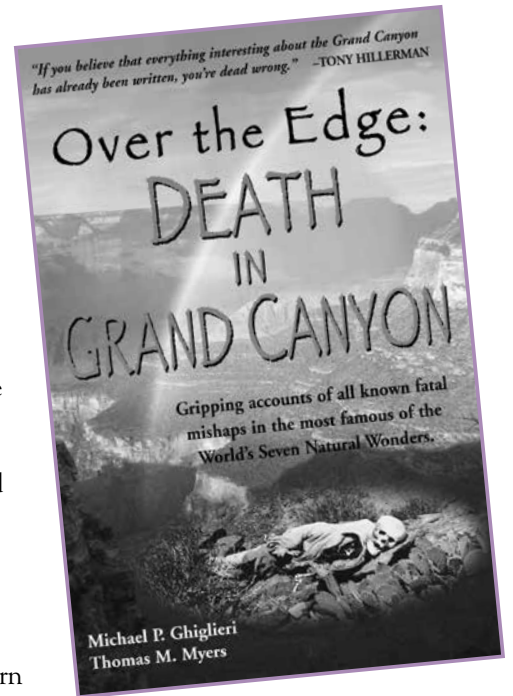
After defining the geographical boundaries of the “Grand Canyon” for this study, Tom and Michael divide the types of deaths into eight chapters: falls; environmental; flash floods; river; air; lightning, and freak accidents (rock falls, venomous creatures, etc.); suicide; and murder. They don’t discuss all the accounts of death, however, as doing so would have probably doubled the length of the book, but charts at the ends of the chapters list names and pertinent information. Very complete references and an index allow cross-referencing. Although deaths are the main focus of the book, the authors have included a variety of interesting “near miss,” events that could have resulted in death but didn’t. My favorite is ten-year-old Tommy Manis’ 120-foot bicycle ride off the Rim Trail resulting in only relatively minor injuries.

Of main interest to BQR readers would most likely be “The Killer Colorado.” But of equal importance is the chapter on “Environmental Deaths,” because it concerns practices in off-river activities where a good portion of river-trip time is spent. Although the accounts will certainly suck you in and entertain you, highly important end-of-chapter discussions, such as “Lessons

of Safety & Survival From the Grand Canyon Colorado,” and the Epilogue, “What Can We Learn From All This?,” may change the way you guide river trips, or at the very least make you think about how you might be able to more safely engage in them. Many of us have had close calls; “there, but for the grace of God, go you or I” could be applied to the stories in the book and the personal events on our own trips.

As Tony Hillerman is quoted on the cover, “If you believe that everything interesting about the Grand Canyon has already been written, you’re dead wrong.” I concur; the book is a “grand” read, but don’t let the fact that you might learn something practical slow you from buying the book

and enjoying it, too. Be sure to attend the authors’ book sales, book signing, and presentations to be held Friday night, June 29, 2001, at Northern Arizona University Cline Library Assembly Hall in Flagstaff, Arizona.



C.V. Abyssus

### Downstream News

**Sara and Steve Hatch** gave birth to Eva Louise Hatch on December 23, 2000. She was born at 5:49 AM, weighing 6 pounds, 8 ounces.

**Sheila Mackell and John O'Brien** gave birth to Daniel Luke O'Brien on April 16, 2001. He was born at 11:19 AM, weighing 7 pounds, 15 ounces.

**Melissa and Lars Niemi** gave birth to Jens Erik Niemi on May 7, 2001. He was born at 5:31 PM, weighing 6 pounds, 3 ounces.

## The James White Conspiracy

FOR 130 YEARS we have debated whether James White preceded John Wesley Powell through the Grand Canyon. This debate should have started with a careful scrutiny of the personalities and historical circumstances behind the James White legend. A strong case can be made that the James White legend was contrived to serve as a political weapon.

This story begins with two men whose lives ran so parallel it seems they were destined to end up in an angry competition for the job of America's top botanist. Their names were Charles Parry and George Vasey. Parry and Vasey were both born in England within a year of one another. Their parents soon moved them to New York state, where they grew up a few dozen miles apart. Both obtained medical degrees in 1846, Parry at Columbia, Vasey elsewhere but finishing up at Columbia. At Columbia they connected with one of America's foremost botanists, John Torrey. Both soon moved to the Midwest, where they lived a few dozen miles apart. While Vasey was stuck studying prairie grasses, Parry made his medical training a ticket for traveling the west with government and railroad surveys. In three years with the Mexican Boundary Survey he became the first botanist to extensively study south-western plants. Parry's favorite realm was the Colorado Rockies. Parry's collections won him great respect from fellow botanists, yet he lacked a scholarly bent and published primarily popular articles in newspapers. The more scholarly Vasey eventually won himself a botany professorship. Since Parry and Vasey were both amateurs seeking respect and rare opportunities in the small world of professional botany, it would have been human nature for them to eye one another jealously. It must have rankled Parry, who had financed all his Rockies trips out of his own pocket, when Vasey attached himself to an upstart Professor, himself a formidable botanist, who got sponsorship from Washington, universities, and the Union Pacific Railroad, to go explore the Rockies and Southwest, poaching on Parry's turf. Parry must have been aware of Professor Powell and his plans, for Parry had spent twenty years searching for surveys to join, and he and Powell had a link in the person of William Byers, the editor of *The Rocky Mountain News* and the brother-in-law of Jack Sumner and employer of Oramel Howland. In 1863, Byers published a Parry article on mountains. In 1864 Parry and Byers had attempted to scale Logan's Peak. Four years later, Byers, Powell, and Sumner became the first to scale it. That Powell and Sumner had stolen Parry's mountain glory didn't subtract from Parry's motive to discredit Powell.

The rivalry between Parry and Vasey exploded in

1871 when Parry was fired from his job as the first official botanist for the Smithsonian and Department of Agriculture. He was replaced by George Vasey. The events behind this remain obscure, but the battle over it involved the scientific giants of the day and left the job unfilled for half a year. At first, Parry's scientific friends, including Asa Gray and Smithsonian director Joseph Henry, rallied around him and demanded his reinstatement. They were solidly opposed to Vasey's nomination, and Torrey even vowed to sabotage Vasey's career. It didn't hurt Parry that he had named mountains for Gray and Torrey. Vasey's advocates asserted that the unscholarly Parry had mismanaged the botanical collection. Gray refused to concede this, but slowly opinions swung to Vasey, and Gray and Henry ended up supporting him. Behind the scenes someone powerful must have been pushing for Vasey, and it was probably America's newest scientific hero, John Wesley Powell. Long after being fired, Parry still despised Vasey, writing to Engelmann, for whom Parry had named a spruce, that Vasey was so slow and incompetent that he'd take a whole generation to produce one botanical catalogue.

Yet all of this was in the future in September of 1867, when Parry was the doctor/naturalist for the Kansas Pacific Railroad, which was surveying the lower Colorado River region to find a 35th parallel route to the Pacific.

The Kansas Pacific Railroad was facing a crisis in September of 1867. In hopes of winning Congressional support to become the national railroad to the Pacific, the Kansas Pacific went deeply into debt to race the Union Pacific westward, but when the Union Pacific reached the 100th Meridian first, Congress backed the Union Pacific, which was now building its line through the northern Rockies. The Kansas Pacific's only hope of avoiding bankruptcy was to find a southern route to the Pacific and quickly win federal funding for it. In June the Kansas Pacific tried a public relations blitz to win Congressional support, but Congress, well bribed by the Union Pacific, wasn't impressed. Soon an Indian uprising shut down construction on the Kansas Pacific.

The heart of the Kansas Pacific's political problem was a decades-long prejudice against a southern route. The long debate over routes to the Pacific had become hopelessly entangled in pre-Civil War politics, with the North fearing that a southern route would foster the Southern economy and the expansion of slavery. Only when the South seceded was the North free to pursue its northern choice. This long debate produced many surveys of varying credibility, which touted the advantages of their own route and exaggerated the diffi-



culties of rival routes. Southerners bemoaned impassable northern mountains and blizzards. Northerners bemoaned impassable southwestern canyons and unfarmable deserts. The most damning report against Colorado River country was that of Joseph Christmas Ives. Ives' famous quote about whites never again visiting this impassable and useless region has long been treated as an amusing naiveté. Yet Ives' comment was typical of the geographical slanders of the railroad debate. Ives slandered northern Arizona because he was a protegee of Jefferson Davis, director of western surveys, who strongly favored a 32nd parallel route, and who had done everything to discredit a 35th parallel route, even fudging data in his report to Congress. For the Kansas Pacific, the fact that even southerners had denounced northern Arizona was a serious problem. The Kansas Pacific desperately needed a way to discredit Ives, Davis, and the whole idea that Colorado River country was impassable.

Then, into the hands of Charles Parry and the Kansas Pacific, fate dropped an unbelievable gift.

Ives had insisted that the Colorado River upstream from Callville was unnavigable. But now Callville reported that a man had just come down the whole Colorado on a simple raft.

The Kansas Pacific's chief surveyor and builder was General William Palmer, the perfect man for launching an attack on the reputation of Joseph Ives, and through him, Jefferson Davis. In the Civil War Palmer had commanded a cavalry unit that helped capture Jefferson Davis. Ives had become a top war aide to Davis. Palmer would love to associate the very name of Ives with cartographic incompetence, for the chief surveyor for the northern railroad route was named Butler Ives. And Palmer probably knew that this summer the Union Pacific, eager to promote the lands it was opening up, had begun sponsoring an upstart explorer, who even planned the first expedition down the Colorado. But now, with one shot, Palmer could make fools of both Ives and the Union Pacific. He sent Parry to see White.

After twenty years of pioneering explorations, Parry must have choked at the idea that Professor Upstart and Professor Prairie Grass might beat him to America's last great unknown wilderness, the canyons of the Colorado. If Parry could prove that the Colorado had already been explored, then Powell and Vasey would get no glory, and perhaps wouldn't get funding to begin with. When Parry met James White, it must have seemed an omen from the Gods of Revenge that White was born only ten miles from where Vasey grew up.

In his study of the James White legend, Robert Stanton decided that White himself didn't start the claim that he went down the whole Colorado. Stanton was convinced that Parry had coached this idea into White. Yet Stanton was baffled by why Parry, in his

official survey report, insisted that White's accounts of canyon and river topography disproved Ives' accounts on one point after another. To Stanton it seemed crazy to trust a starving delirious castaway over a professional surveyor. Stanton dismissed Parry as an idiotic geologist with reckless enthusiasm for a dramatic story.

To publicize White's conquest of the Colorado, Parry turned to William Byers, former railroad surveyor, and a key backer of the Kansas Pacific. The Union Pacific was bypassing Denver, but the Kansas Pacific would make Denver an important hub. In November of 1867 the Kansas Pacific was facing bankruptcy and pleaded with Byers for Denver's help, and Byers raised two million dollars to build one leg of the Kansas Pacific's chartered route. Byers gave White national publicity. The printer who set White's story into type may have been Oramel Howland. If Howland now believed that boating the Colorado was easy, he was in for a shock. If Howland started the trip disbelieving in Powell and his mission, this left him readier to walk out. If Howland's secret mission was to confirm White's story, then after awhile, Howland had no reason to go further.

Palmer was soon personally handing a published White article to U. S. Senators. When Powell's request for funds came up before the Senate, one Senator opposed Powell on the grounds that this river and region had already been explored by James White and "a very competent man, General Palmer".

After the Kansas Pacific abandoned its Pacific dreams, Palmer became the President of a Denver railroad company. He always defended the White legend, and perhaps he was taken too seriously by two other Denver railroad men, Frank Brown and Robert Stanton, for when they rode Palmer's railroad to begin their own Colorado River expedition, they seriously underestimated the Colorado. Frank Brown drowned, and Stanton became the fiercest critic of the James White legend.

John Wesley Powell was politically astute enough to realize the motives behind the James White legend. When Powell helped drive Parry out of Washington, when Powell named Grand Canyon's botanical jewel Vasey's Paradise (consider *this* pronunciation: Vasey's Parry Dies), John Wesley Powell got even.

*Don Lago*

## Restoring Sandra

I RETURNED HOME from a month away to a pile of mail and notes from the house-sitter. Among the messages was a note, scribbled on the back of an envelope: “1940s-era, Nevills Cataract boat, wants restored”, with a name and a phone number.

Cataract boat? Nevills built?—I had to know more. I phoned Greg Reiff—the name on the note—if nothing else to satisfy my curiosity...

I'd seen a couple of the original “Cat” boats at the South Rim of the Grand Canyon, in the Page, Arizona John Wesley Powell Museum, as well as read the book *Any Time. Any Place. Any River; The Nevills of Mexican Hat*. However, I didn't know much else about the boats or their construction. I recalled, basically plywood, a lot of screws and shallow freeboard. My head began to spin with questions, like how many were built by Nevills and were they all still around? I, of course, was curious how this particular boat got to her present state of ill repair.

Greg's enthusiasm was very apparent over the

My first impressions were sobering. Though she was in one piece (the piece that was remaining, that is) half the floor was rotted away, rowers bench and splash guards missing, and the dry rot extended up her side walls at mid ships. The veneers of painted letters of Mexican Hat Expeditions over Nevills Expedition were long since peeled away, but the name *Sandra* was legible on her bow. Peering through the cobwebs upon opening her bow and stern hatches revealed some soundness, creating somewhat of a foundation where restoration might begin.

There were a couple of different approaches regarding restoring the old girl. One was to “original state,” using the 1940s era approach with wood, screws, and caulk. The other would be to utilize modern material; i.e. epoxy/fiberglass, sandwiching her remaining good wood. The preferred choice would be the former, involving a greater amount of wood and screws to be replaced and thus labor. The latter approach, Greg's mom



Andy Hutchinson starting to put the puzzle back together.



Old and new begin to bring the “Sandra” back to life.

phone, though he was quite realistic about her shabby, “composting state.” He spoke of a couple of respected “authorities” (Brad Dimock and Kenton “Factor” Grua) who basically deemed her “restorable” and this was a shot in the arm. Upon learning that the boat was named for Greg's mom, Sandra, Norman Nevills' second born, and that she was his final boat built, I think the decision was made for me as to whether I wanted to take on this project, sight unseen, or not.

I optimistically hooked on my trailer for the “surveillance trip” to Flagstaff as more questions circled around my mind's eddy. How many trips had she done? Who was her primary boatman and what pre-dam, high water did she float on? I couldn't wait to see her.

Sandra assured me, was what her daddy would do today, having access to modern day epoxy techniques. Weighing this with Greg's wishes to float her on a river or two, the contemporary approach made sense as well.

We wrapped the boat like a mummy using a large tarp with the help from Mr. Steve Anderson, the sponsor of the proposed “Project Restore *Sandra*,” and loaded her on the trailer. Off I went, feeling a little overwhelmed, Greg apparently excited, mom Sandra relieved, and sponsor Steve concerned. An obvious team project right from the start!

I had a few side trips on my way home. One was to Brad Dimock's, fellow wooden boat affectionado, for advice. Nothing like the voice of experience, plus he had referred Greg to me, so I at least owed him a thank

you...I think, or thought! Perhaps I was biting off more than I could possibly chew, but conviction is a good tool, and this I know I have. I guess Brad knows me well enough to pair me up with such a project and I appreciated that.

Unloading her into my humble boat shop was also emotional. Flakes, pieces, and chunks were falling off of her like petals from an old dried flower. Her remaining floor had to come off, and as most of this was dry-rot, it was removed with little effort. Seeing Norman's old handiwork in the ribs, decks and hatches was wonderful.

I also discovered packed in a hatch corner some sand and an old Kodachrome wrapper, which I saved, along with what ultimately amounted to four bean cans worth of rusty screws. The dry rot was extensive, but the decks, at least on the inside, were intact, along with an estimated sixty percent of her side panels and perhaps eighty percent of the hardwood ribs. I also found a couple of old on-river repairs made complete with river sand mixed in with old resin. It seemed like *Sandra* was beginning to speak...

A week or so worth of stripping brought *Sandra* to a

refurbished, original oak around the hatch openings.

A great aid was being afforded the chance to measure the *Mexican Hat II*, Cataract boat at the John Wesley Powell Museum in Page. The lines from that particular boat coincided perfectly to *Sandra's* dimensions, revealing Norman's attention to consistency with regard to the boat's design. Splash guard and boatman's bench dimensions were invaluable. We added two new hatches on the boatman's well area which the family agreed would meet Norm's standards. Finally, finishing touches were old family photos laminated to the hatch lid's interior, along with a "time capsule" message left in a plastic bottle embalmed in expansion foam added to the dead space areas, surrounding the boatman's well. Allen Gilberg (GCE) assisted in re-creating the Nevills Expedition and *Sandra* lettering with attention to original fonts as the final coat of paint was added.

Cotton rope or nylon? "Well, cotton, of course!"

When Greg and Steve arrived to pick *Sandra* up it must have seemed like Christmas and I felt like Santa Claus. I could see it in their eyes. It's always melancholy when a boat leaves my shop and goes down the drive,



The restoration team, Greg Reiff, Andy Hutchinson, Sandra Nevills Reiff and Steve Anderson, re-christen the "Sandra".



Boatmen Shann Browning and Chris McIntosh take "Sandra" for a spin at Lees Ferry.

mere skeleton, filling up the back of my old truck with Cataract composite, but I estimated seventy percent of her remained. I spent another few weeks scabbing and scarfing on new, marine plywood bulkheads to her sides. Within a month, she was ready for a new half marine ply floor. There was a great deal of paint stripping needed which Greg, with some students and friends, made the trip up a few times to do. By October she was flipped over and deck work was progressing, I removed several hundred more rusted out screws and filled the voids with epoxy filler, as had been done on the sides. By the 1st of November *Sandra* was fully encapsulated in Epoxy and fiberglass cloth and I was installing new, gunnel and chine strips made of ash hardwood, and reinstalled,

but seeing the green and white piece of history float away on a trailer, was especially emotional.

Then to top it all off, I got to meet Frank Wright, 95-plus years old and *Sandra's* main boatman with Nevills Expedition and Mexican Hat Expeditions. He had a twinkle in his eye and a riverman's firm handshake. He couldn't believe she was going on the water again. He mentioned the 1957 high water trip, his last Grand Canyon run, and his 15 Glen Canyon (pre dam) trips.

We were both in tears...and as I left, I realized that through Frank, mama *Sandra* and Cataract boat *Sandra*, old rivers and boats do talk!

Andy Hutchinson



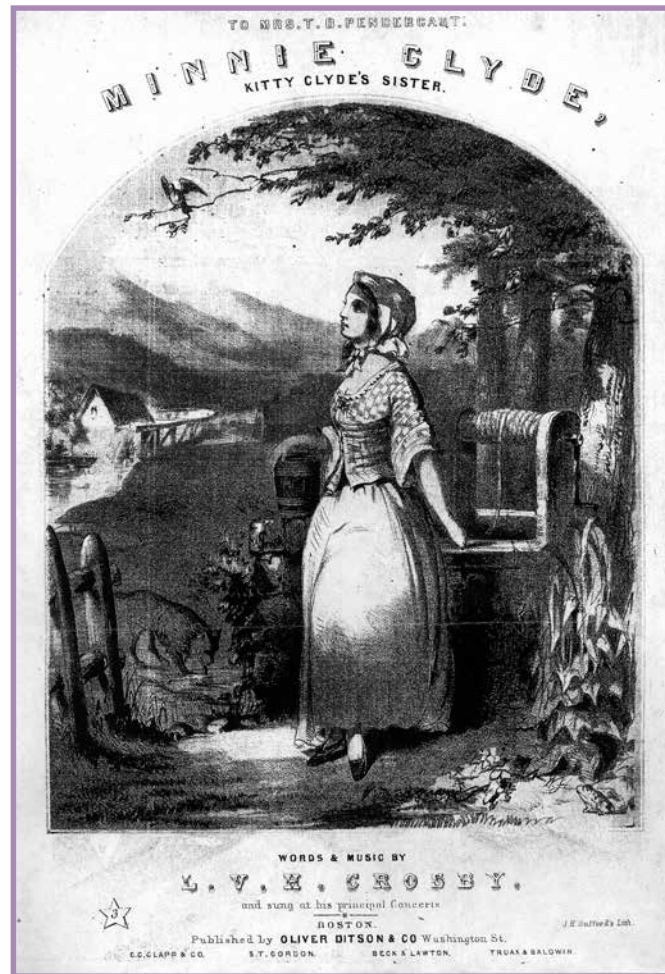
## Who Was Kitty Clyde Anyway?

ANYONE WHO HAS READ of John Wesley Powell's 1869 trip down the Green and Colorado Rivers must have puzzled over the name of one of his boats: *Kitty Clyde's Sister*. It's an odd name for two young bucks, Andy Hall and Billy Hawkins, A.K.A. Missouri Rhodes, to have chosen\*. They were strangers to one another when the trip started so Kitty or her sister can hardly have been a mutual acquaintance. And wouldn't it have been a lot simpler to use the sister's name and to forget about Kitty?

These peculiarities kept haunting me as I researched my forthcoming historical novel, *The Strong Brown God*, about the Powell trip. I'd read just about everything written by and about Powell and that first trip, and a lot of unpublished material as well. In the latter I had found answers to other questions that had puzzled some writers, e.g. were the men to be paid? (answer: yes for three of the crew, no for the others). But there was nary a line that identified the Clyde sisters.

My first invention about the boat's name was that some can-can dancers had named their act *Kitty Clyde and Her Sister*. That at least spoke to the need for both Hawkins and Hall to know, or to know of, the ladies in question.

Still the question nagged. I was nearly through my second draft when coincidence struck, or serendipity: I had journeyed out to the Brooklyn Museum of Art, to deliver some of my photographs that the museum had acquired for their permanent collection, when I happened on an exhibition of Winslow Homer's drawings and lithographs. Always eager to see more of this wonderful artist's work, I wandered in.



Songsheet cover, with art by Winslow Homer, of "Minnie Clyde, Kitty Clyde's Sister".

According to the program for the exhibit, Homer paid the rent in his formative years by doing cover drawings for magazines like *Harper's Weekly*, drawing pencil portraits of the likes of Ralph Waldo Emerson and making lithographs for songsheet covers. In those days sheet music was to home entertainment what CD's are today. An appealing songsheet cover could lead to a sale, which made Homer's skills much in demand.

The first songsheet cover on display was *Annie Laurie* (sic) and was a pleasing lithograph of an equally pleasing young Annie, presumably. The next one showed a young woman leaning against a well, a wooden bucket in one hand, a dog near her feet and a thatched roofed mill with an overshot water wheel in the background. A

tree branch arches overhead with a flapping bird on its outermost branch and, in the lower right-hand corner, a frog surveys the scene.

Lettered at the top of the sheet was:

TO MRS. T. B. PENDERGAST

Below that, in a curve matching the arching branch, was:

MINNIE CLYDE  
Kitty Clyde's Sister

My jaw and my program dropped. Chance? Maybe, but as Pasteur had it, "Chance favors the prepared mind," and I was prepared to seize on any clue about the Hawkins/Hall boat name.

At the bottom of the song sheet, we are informed that the words and music are by L.V.H. Crosby, though judging both I wonder he would admit it. The words are

redolent of the sentimentalism of the day, and the music won't send you away whistling. Here's how the song opens.

*Oh, long have I sung of sweet Kitty Clyde,  
Who lived at the foot of the hill;  
And 'tho that sweet pretty bird has flown,  
Another is living there still.  
She's blithe and gay as the robin that sings  
On the trees by the old mill-side;  
And if ever I loved a girl in my life,  
'Tis the charming, sweet Minnie Clyde*

The chorus goes:

*Oh, Minnie Clyde, she is my pride,  
And sure I am no jester;  
For if ever I loved a girl in my life,  
'Tis Minnie, Kitty Clyde's sister.*

In my book I have the men making up their own lyrics with the prize for best (or worst) going to the lead boatman, Jack Sumner, who sings:

*Oh Kitty Clyde, I'll tan your hide  
And give you quite a blister  
If you tell your mom or your dad  
What I did to your sister*

But the coincidences weren't over. A few weeks later I was asked by an artist friend to review the opening chapters of a book he was writing about Winslow Homer. When I mailed my comments to him, I included my story of the songsheet in the Brooklyn Museum. By return mail he sent a copy of the songsheet cover; he had recently bought the original on e-bay.

So one small mystery is solved, but another remains. Why didn't they just name the boat *Minnie*?

*Ardian Gill*

\* Most writers (following Powell) get the boats and crews wrong, assigning Walter Powell and George Bradley to *Sister*, but the diaries and letters of the crew make it clear that those two men were in *Maid of the Canyon*.

Dam the Lava

Waters shimmering, brushing  
darters, rowing, crushing.  
Billowy, cumulus clouds  
touch off frightening bouts.  
Dam the Lava

Eddies, coves and swirling parts  
filled with pounding hearts.  
Glistening rock walls  
christening blind falls.  
Dam the Lava

Full moon, crescent moon  
sunshine soon.  
Like home-run cutters  
oars string cut the waters.  
Dam the Lava

Wet and black trap beds  
lay in slot canyon rapids.  
Flowers spring and bloom  
schist, tapeats, redwall loom.  
Dam the Lava.

Homes abandoned heron high  
set out to die.  
Currents, violent quakes  
channels, floods remake.  
Dam the lava

Ursula Montano

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

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<b>River Art &amp; Mud Gallery</b> River folk art 720 S. River Rd. Suite A-114, St. George, UT 84790	801/674-1444		
<b>Fretwater Press</b> www.fretwater.com	774-8853		



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With whom? \_\_\_\_\_

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Company? \_\_\_\_\_

Year Began? \_\_\_\_\_

Number of trips? \_\_\_\_\_

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

\$25 1-year membership

\$100 5-year membership

\$277 Life membership (A buck a mile)

\$500 Benefactor\*

\$1000 Patron (A grand, get it!)\*

\*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.

\$16 Short sleeved T-shirt Size \_\_\_\_\_

\$18 Long sleeved T-shirt Size \_\_\_\_\_

\$10 Baseball Cap

\$10 Kent Frost Poster (Dugald Bremner photo)

Total enclosed \_\_\_\_\_

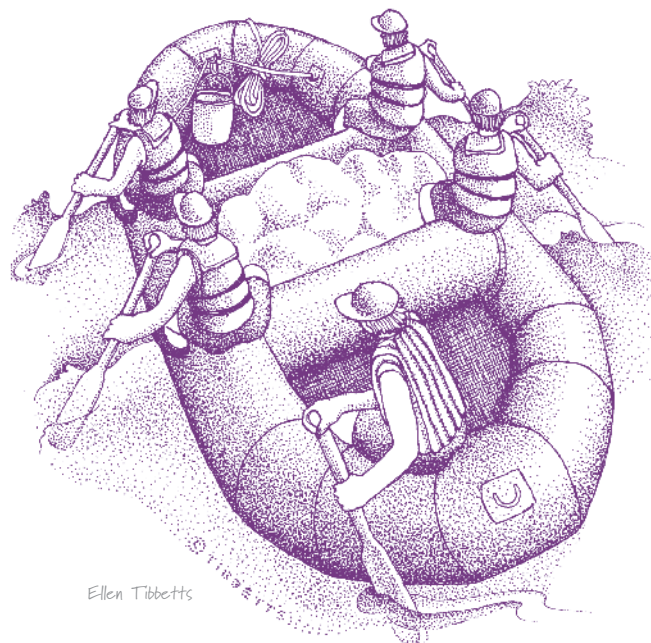
We don't exchange mailing lists with anyone. Period.

## Flipped Out On The Colorado

**W**ANT TO BE PART OF REALLY COOL PROJECT? We're looking for the best, wildest, most unbelievable whitewater boating mayhem photos from the Colorado and its tributaries! We want to put a collection of these shots into a classic picture book devoted entirely to boating bloopers. From Grand Canyon, Cataract, Westwater, Desolation/ Gray, and Lodore, to the Dolores and the San Juan, we're looking for flips, "almost" flips, gnarly boat wrecks, wraps, rescues, rides that went wrong—or almost went wrong—you name it. We want the best whitewater bedlam shots of what "Big Red" and its feeders can dish out! We're offering a fee and a copy of the book for photos used (not huge \$ but better than a paddle in your eye). We've already got a great start, and would like to have all photos by September 1, 2001 (please retain a duplicate of your photos just in case the post office goes postal). Please contact Tom Myers at Puma Press, PO Box 30998, Flagstaff, Arizona 86003, and mark your envelope, "photo

enclosed." Or send your inquiries or your photo for consideration to [Pumapress@aol.com](mailto:Pumapress@aol.com). Muchas gracias.

Dr. Tom Myers



## Have You Seen These Men?

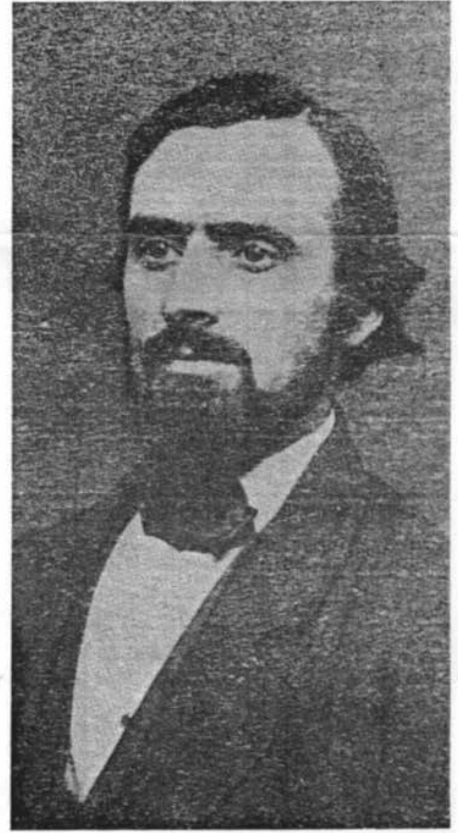
**T**HE HOWLAND BROTHERS and William Dunn left John Wesley Powell's 1869 Colorado River expedition on August 28, 1869 at what is now known as Separation Rapid. They hiked up Separation Canyon to an unknown fate. Images of the three men have heretofore also been unknown.

Thanks to GCRG member and researcher Don Lago, photographs of Oramel G. Howland and Seneca B. Howland appear in print for probably only the second time. The first publication of these portraits was in the journal of a society dedicated to the Howlands' ancestor, Pilgrim John Howland, who actually survived falling off the *Mayflower*.

Don is currently following up on continuing research on the Howlands and Dunn. Stay tuned.



Oramel G. Howland  
1833-1869



Seneca B. Howland  
1842-1869

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THANKS TO ALL YOU poets, photographers, writers, artists, and to all of you who send us stuff. Don't ever stop. Special thanks to the Brown Foundation and Newman's Own Organics for their generous and much appreciated support of this publication.  
Printed on recycled paper with soy bean ink by really nice guys.

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## boatman's quarterly review

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