



the journal of
Grand Canyon River Guides, Inc.
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boatman's quarterly review

Don Neff

IN 1957, I think it was May or June when we moved down there to Mexican Hat, Utah. The road stopped at Mexican Hat in those days. It was dirt road from Monticello all the way to Mexican Hat, and it was rough road. And we went down there and started this trading post.... I was about fourteen, fifteen, and I went to school in Blanding, Utah. I was working at a service station there in Mexican Hat—the only one—and that's where I met Gay Staveley. He pulled up to buy gas, and they needed somebody to be a helper for 'em, and I wanted to do it. Running the river, you know, was a big deal down there.

But to preface this.... Well, heck.... Gay had bought the company and he lived down the street from us. We actually owned Nevills' Lodge, and that's where I lived, at Nevills' Lodge, in Mexican Hat.... Gay came out and said, "I need a helper."

So I went out to Hite with him, and for some reason, somebody didn't show up, so they turned to me and said, "You row this boat."

And of course, it's Glen Canyon, there's no rapids, except Ticaboo 1 and 2 and Bullfrog and that. And so (chuckles) I got my boat. But the other thing funny about that trip is that it was a one-boat trip with two people. So not only was I a boatman, I was a *lead* boatman, I was *the* boatman.

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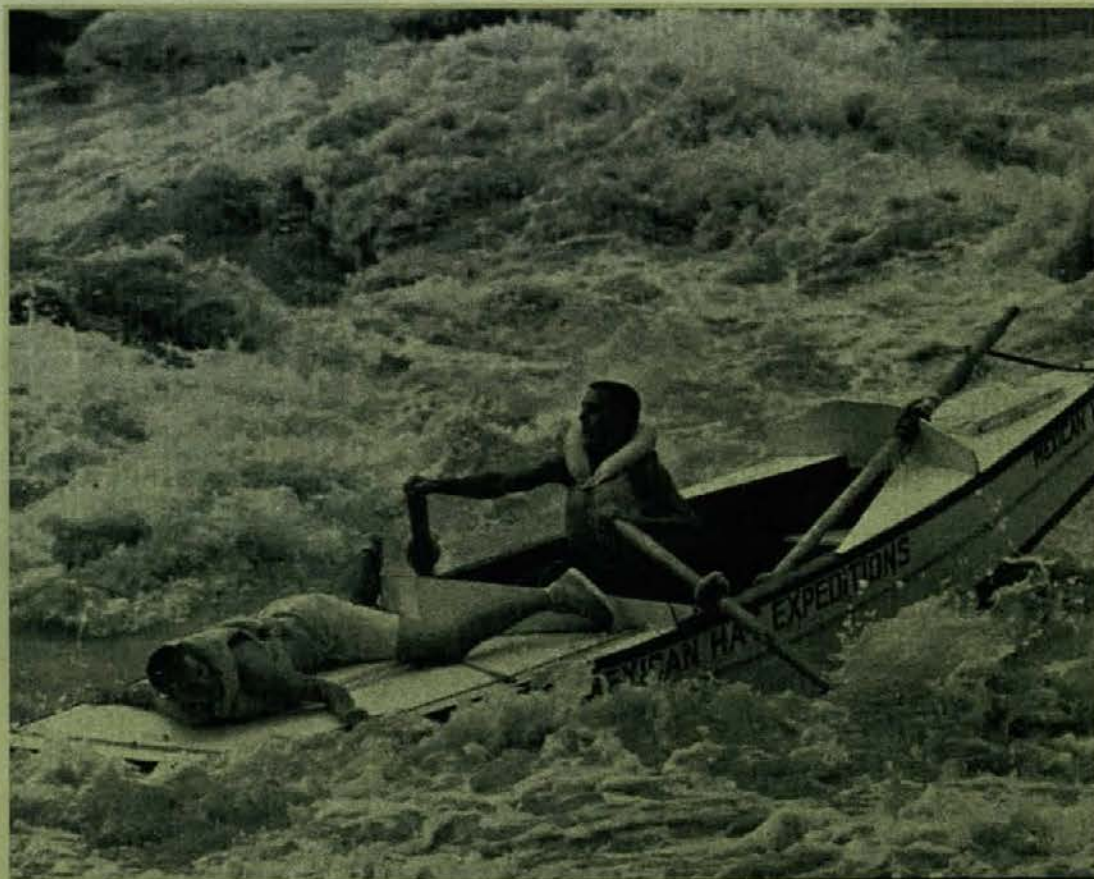
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El Condor Pasa

Supergroup Follow-up

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Ch. Abbey
seasonal ranger does a ride-along

District Ranger Palmer

July 1, 1967

Seasonal Ranger Abbey

Boat Trip: Lee's Ferry to Phantom Ranch

At about noon on Wednesday, June 21st, I had the good fortune to be invited to join Ron Smith's Grand Canyon Expeditions on a commercial run from Lee's Ferry to Phantom Ranch. I accepted and after necessary arrangements were made we launched off around 1300 hours. The boating party consisted of two neoprime pontoon boats with inflated outriggers, 33' long, each equipped with an outboard motor and oars. Leader of the party and first boatman was Ron Smith; second boatman Art Gallensen. In addition to the boatman each boat carried four passengers.

On the first day we ran a number of rapids, of which the most interesting were Badger Creek Rapids (being the first of significance), Soap Creek Rapids, (where Fred. Brown, with Stanton, was drowned in 1889), House Rock Rapids, North Canyon Rapids (where the white polished "marble" begins to appear), Tanager Wash Rapids. We camped the first night at near Cave Springs, about 26 miles downriver from Lee's Ferry.

This campsite has been heavily used by boating parties. Firewood-heards and some of the little caves or grottoes in the limestone are badly littered with toilet paper. Would seem desirable to urge all river ~~guides~~ passengers on these boating trips to carry matches and burn their waste paper.

On the second day we moved deep into Marble Gorge, and the grandeur of the scenery in this section, at least as seen from the river, equals that which is presently included within the Grand Canyon National Park. The canyon rim in Marble Gorge rises to 3000' above the river, with much less lateral setback than farther down the canyon, and therefore gives a tremendous impression of space, vastness of scale, towering heights.

After running a number of moderate rapids on this second day we came to Vasey's Paradise and then to the Redwall Cavern, both well-known features of this stretch of the river. After short stops for exploration and photography we went on, passing the Royal Arches, the remains of Bert Lopez's boat beached high on the north shore, and the Triple Alcoves. Near this point I saw the first mesquite tree, one indication that we were entering the Lower Sonoran life zone. We camped for the second night near the mouth of Nankowasp Creek, on a beautiful white sand beach. Later in the evening the great 3000' walls were lit up by the full moon.

On the third day we ran a number of exciting rapids, of which the best were Kwagunt Rapids, Sixty Mile Rapids, Lava Creek Rapids, Tanager Canyon Rapids and Unkar Creek Rapids. Near mile 62 we passed the south of the Little Colorado, which was in full flood. From here on the Colorado resumed its ~~course~~

traditional golden brown coloring, rich in silt, such to the delight of Smith and Gallensen, ardent lovers of the "old river." We camped the third afternoon at Mile 75, on an immense sand and gravel bar not far above Hance Rapids. This campsite too has been heavily used, with considerable amounts of littering apparent. Firewood however is still plentiful at this point.

On the morning of the fourth day we approached Hance Rapids, considered the most difficult to run in the Lee's Ferry-Phantom Ranch stretch of the Grand Canyon ~~trip~~ traverse. Our boatmen tied up the boats above the rapids and we all went on shore. Our boatmen tied up the boats to look over the rapids. Ron Smith made his plans and proceeded on foot to look over the rapids with his group while the rest of us watched. He got through the rapids exactly as planned, running on the far right and then pulling through on the left. Gallensen with the second boat and his four passengers did the same thing.

After this we ran Sockdolager Rapids, Grapevine Rapids and one near Mile 83 named unofficially Little Starbuck Rapids. All were interesting but after Hance a bit anticlimactic. By now we were deep into the inner gorge of Grand Canyon, passing through first the dark noon we pulled onto the beach at the mouth of Bright Angel Creek and that was the end of the trip for me. I spent the afternoon in the Phantom Ranch pool (temperatures around 110 F.) and hiked up the Kaibab Trail to South Rim and the Village by moonlight.

As a passenger on this voyage I was much impressed by the competence and care shown by Ron Smith and Art Gallensen in powering their ponderous-looking craft (they call them "elephants") through the rapids and down the river. Both boatmen are well-informed as regards the history—natural and human—of the Canyon and went to considerable efforts to satisfy the curiosity of the passengers. Safety precautions were always observed (e.g., whenever necessary passengers were reminded to fasten life jackets, sit down and hold on when approaching rapids, and to do their hiking always in numbers of two or more), campsites were always thoroughly cleaned up when departing, and when time permitted (for they had to do all of the cooking) either Smith or Gallensen would lead hiking parties to points of interest, such as the cliff dwellings above Nankowasp Creek. Most of the passengers seemed quite pleased with the trip, none had any complaints that I was aware of, and several vowed to return for a re-run. I was one of them.

Ch. Abbey



boatman's quarterly review

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

GRAND CANYON RIVER GUIDES
is a nonprofit organization dedicated to

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

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

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

On the river, it all makes sense.
The sun decides starting time,
And quitting time; river and weather
Mark our lives—how many rapids to run,
What camps to choose, how long to linger.
It's the lingering I love,
A chance to see the light on things—
Cliffs, slopes, water, beaches,
Mesquite, mergansers, tamarisk.
I take pictures—hoping, I guess,
To cling to something. Useless;
The trip flows on.

I fly back to Detroit, still stunned.
My city's what it's always been—
Loud, mad, grinding, confused;
Busting loose. It's all familiar,
But I've lost my place.

Until yesterday,
Driving through clots of cars, bars,
Potholes, and junky lots, I glimpsed
Detroit's river-battered, clogged, ruined—
No Colorado, yet a presence
From the trip: a strong, open stretch of water
Telling me where I belong,
And where I long to belong.

Bob Donaldson
November 1998

Cover: Don Neff and Hal Desmore

An Antidote for Tunnel Vision

Water, Earth, And Sky: The Colorado River Basin, by Michael Collier

GRAND CANYON BOATMEN are, by and large, very good at what they do. Required training has become increasingly comprehensive, and many senior guides, still active, continue to pass down their wisdom, born of decades of trial, error, and inspiration, to the new boatmen. Yet boaters from other parts of the Colorado River Basin continually point to the Grand Canyon Boatman's Syndrome: guides in Grand Canyon, they say, seem dimly unaware of any other rivers, canyons, rapids, or natural history—that to them Grand Canyon is so much the center of their universe that it and it alone has become The Colorado River.

Michael Collier's *Water, Earth, and Sky* is a stimulating breath of outside air and should be required reading (and gazing) for all Grand Canyon boatmen. Collier, who a few guides may remember as a boatman in the 1970s, left commercial river running to become a geologist, a writer, a pilot, one of the world's top practitioners of fine aerial photography, and in his spare time, a family doctor in Flagstaff. Now, in a quest to find out what the Colorado River is really about, he has climbed into his Cessna and flown the entire drainage, from its sources in the mountains of New Mexico, Colorado and Wyoming, to its crippled, muddy finale in the Sea of Cortez. With his airplane on edge in the sketchiest of situations, he has abandoned the controls and dangled from the window with his camera to capture the visual essence of the Colorado River. (Like any good guide, he is more than a little demented.)

The photographs presented in *Water, Earth, and Sky* range from the remote corners to the convoluted bowels

of the Colorado Plateau. Collier has caught the remarkable forms, shapes, and textures of our River, often in the magnificent, rosy, long-shadowed light of dawn or day's end, in compositions that artisans in any medium

will recognize as fine art. He has assembled some hundred and forty images from a perspective that few mammals will ever share. There are but two flaws: they aren't bigger and there aren't more of them.

Although photography is the shimmering core of the book, there is much more. Collier has collaborated with six of the best scientific and creative minds on the Colorado Plateau to give breadth and detail to the overview. Dave Wegner, who has spent much of his life studying the systems and survival of the Colorado River, opens with an excellent foreword in which he introduces the other essayists far more succinctly than I can:

Geology, hydrology, biology, ecology, photographic and literary art: for the purposes of this book, these are not rigid disciplines so much as they are lenses through which the contributors to this book help us enter understanding. Michael Collier, trained as a geologist, has been running rivers, flying, and photographing the Southwest for twenty-five years. Jack Schmidt is a geomorphologist who has developed fundamental concepts of how river banks respond to moving water. Ned Andrews is a U.S. Geological Survey research hydrologist who has spent decades investi-

gating how the Colorado and other rivers flow through and affect a myriad of landscapes. Rich Valdez is acknowledged as one of the country's foremost experts on fish within rivers of the mountain West. Larry



Beginning...



Middle...



End...

Stevens is a research biologist who has spent twenty years inside Grand Canyon researching its riparian ecology. And Ellen Meloy is a prize-winning writer of natural history who has been on hundreds of trips down rivers of the Colorado Plateau."

Together these minds have created a picture of an astounding river system which, although horribly disfigured, displaced, and dismembered in places, remains one of the most beautiful, diverse, and inspirational places on earth.

Brad Dimock

(Sorry about all the superlatives. It's a very cool book.)

Water, Earth, and Sky

Michael Collier

University of Utah Press

ISBN 0-87480-598-8

128 pages, \$29.95

Tolio...Fact and Fiction

Tolio... River Foot... Foot Rot... These are all names for a painful, itchy, red skin rash with blisters that typically involves the tops of the toes and feet. The condition seems to be more prevalent in recent years among Colorado River boaters. It varies in severity and has necessitated a few evacuations, due to spreading secondary infection. To put it mildly, there are many theories about this problem, including sun sensitivity, irritation from the sand or grasses, fungi, herpes, bacterial infection and allergies.

Dr. Tom Myers and I have seen several cases over the past few years and have compared notes, photos and ideas. We've conferred with a local dermatologist. In an effort to understand this condition better, we've developed a questionnaire for reporting cases. We've sent this to all the outfitters and also gave copies to the River Ranger at Lees Ferry. If you send in a report, we'd appreciate photos and/or doctor's report copies too. We'd like to see untreated cases if possible so we can get cultures and/or do biopsies. As we get more data from these sources, we'll report our conclusions and recommendations in an upcoming issue.

Thanks in advance for your cooperation.

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River Foot ("Tolio") Questionnaire

Please help us get some reliable data on this problem. Send a completed form on each case to Walt Taylor, M.D., at 1355 N. Beaver, Ste. 120, Flagstaff, AZ 86001. Dr. Tom Meyers and I will review the data and make the results and conclusions known to the river community ASAP. Please be as specific as possible with your answers.

1. What day of the trip did it appear?
2. Where on the river did it appear?
3. What month of the year?
4. What type of footwear were you wearing?
5. What sunscreen or other skin protection were you using?
6. What type of craft? Raft with regular floor, self-bailing raft, dory, other (specify).
7. Commercial, private or research trip?
8. Have you ever had this before? How many times? When and what river?
9. How many Colorado River trips so far this season for you?
10. Do you have any pre-existing skin disease?
11. Do you have a history of skin allergies? Photosensitivity? Current medication use that might cause photosensitivity, such as Tetracycline, Sulfa, including Saptra or Bactrim, Cipro, Floxin, Raxar or Trovan?
12. What symptoms did you have? (itching, pain, redness, blisters)
13. Are you crew or passenger? Your age?
14. Did others on your trip get it? Others in your boat?
15. How was it treated? How did it respond to the treatment?
16. Name, address, phone number (optional).

What's Happening With the Colorado River Management Plan

GRAND CANYON PLANNERS have reviewed the many comments and suggestions received from the public on the draft Wilderness Plan and the Colorado River Management Plan planning process. In an effort to better address park goals and the public's concerns, the park is taking a more holistic view on managing the park's undeveloped areas. To accomplish this approach, we are combining the wilderness and river planning processes, and proceeding with a more comprehensive, ecosystem-based planning effort that will look at land- and water-based resources collectively as well as visitor uses in these areas.

Please keep in mind that Grand Canyon planners are not starting over. Progress has been made on both the wilderness and river planning efforts. The completed work and your comments on both processes are still relevant. The new strategic planning approach is intended to provide a foundation for decision-making and guidance on complex issues related to wilderness values, resource protection, and visitor use on the land as well as the river.

The park's upcoming issue of *Soundings* will describe what has been done on both plans and where we are now in the new process. It will also contain a mail-back response form to questions about what you see as the future of undeveloped lands in Grand Canyon National Park. If you do not receive *Soundings* and would like to, please call Laurie Domler, (520) 556-7223 or GRCA_CRMP@nps.gov to get your name on the mailing list. If you are not interested in receiving *Soundings* but would like to comment on the new planning process, please see the related article in this issue and respond to the listed questions. We look forward to your participation in this planning process.

Laurie Domler

Desired Conditions, or the "Whats" of Planning

OVER THE COURSE of the last few months, you may have heard the Grand Canyon's Colorado River Management Plan (CRMP) planning team talk about the "whats" and the "hows" of planning. In other words, what types of desired resource conditions and visitor experiences do we want along the river, and how are we going to achieve those desired conditions?

Past CRMP discussions were filled with innovative ideas about finely tuned launch schedules, methods of

phasing out motors and reallocating user-days, and forming workgroups to refine solutions. Suggestions such as these are valuable and will be critical management tools at certain points in the planning and implementation process. Sometimes, however, we become so focused on ways of how to fix problems that a very important and fundamental question goes unanswered. That is, what do we want the river to be in the future?

As park planners reassess and combine both the CRMP and the Draft Wilderness Plan planning processes into a more comprehensive, broad-based management and implementation plan, an essential step in the process is to reaffirm with the public the desired conditions for which we are planning. What would we like the river to be like in the future? What do we want the backcountry to be in the future? In ten to twenty years, what would we like to see, feel, and experience while in these areas? What does the condition of the resource look like? Are natural and cultural resources near and at campsites and attraction sites in the same condition they are in today or do they look different? What is a river trip or a backcountry trip like in the winter, spring or fall as opposed to the summer? Are there different visitor experiences and activities at these times of the year? What is the level of visitor use? Will the river and its surrounding environment still be capable of offering the same types of experiences that it has for so many people in the past?

To achieve any desired outcome, we must first define those essential elements that make the backcountry and river profoundly unique and magical experiences. Below are questions included in the latest National Park Service newsletter *Soundings*. Please help us answer the "whats" of the planning process. If you feel that you have already answered these questions, rest assured your comments are included. Please avoid the temptation to offer solutions at this point.

1. What are the conditions and qualities that made a visit to the Grand Canyon so special to you? Describe that river or hiking trip.
2. Imagine yourself visiting Grand Canyon in 20 years. Describe what you would like to see and experience on a river or hiking trip at that time.
3. Is there anything else you would like the planning team to know?

Please send responses to:

Grand Canyon Planning Team
Attn: Laurie Domler
U.S. Geological Survey, Building 3
2255 N. Gemini Dr.
Flagstaff, AZ 86001

Brick and the Flood of '57

THE Grand Canyon Private Boaters Association is honored to be able to invite you to an evening with private river runner Vernon "Brick" Mortenson. Boat builder and aircraft tool designer, Brick first ran the Colorado River in the Grand Canyon in 1955 on a private trip as a boatman for P.T. "Pat" Reilly and his passenger was first time river runner Martin Litton. Brick returned to run the Grand Canyon in '57 and '58, the last years of high water before Glen Canyon Dam.

Brick's last run down the river was in 1962, the year before the flood gates of Glen Canyon Dam were to close. Brick will be showing a video he made of the '55, '56 and '57 river trips. The high water shots are fantastic! Brick will also have free copies of his river logs available.

This event, sponsored by the Grand Canyon Private Boaters Association, will be at Cline Library on the campus of Northern Arizona University, Flagstaff, AZ, on October 8, 1999 at 7:00 P.M.. A donation of \$5 to support the GCPBA will be accepted at the door. We hope to see you all there for this high water showing!

Boat Registration Rules Change (it's about time)

THE ARIZONA Game and Fish Department, the state agency responsible for registration of watercraft owned in Arizona, has made some changes to the registration requirements. Any watercraft operated by paddle or oar and that is not operated by any type of motor (electric or otherwise), will no longer be required to be licensed.

According to Madelynn Fenske of the Arizona Game and Fish Department, the new rule will take effect in September, but as of the end of May, no new registrations are being taken on muscle-powered craft. But, Fenske adds, if you gang craft together and attach a motor of any sort to a raft, then the raft the motor is attached to must be registered with the state. This is of importance to rafters who intend to use a motor to help them across the lower reaches of the Grand Canyon in the flat water of Lake Mead.

Arizona residents who had previously registered their oar powered rafts will no longer be sent any paperwork by the State, Fenske adds. If you want to use your raft for a motorized run out, you will have to contact the state for a motorized watercraft registration. The renewal fee will be the same for in-state residents, as fees are based on length of boat, not propulsion type.

Downstream News

On July 4, 1999, **Mary Ellen Arndorfer** (AZRA) married Sean Hickey at Shoshone Point. The bride, radiant in her white silk gown, celebrated the occasion with approximately 120 friends and family and was heard to exclaim joyously, "He's not a boatman".

Our very own **Nels Neimi** is, incredibly, turning sixty, yes that's 60, this Fall. Not only has he survived this long, but he's still "boatin' for bucks," usually in Alaska these days—what a guy! To celebrate this wondrous event all friends and neighbors are invited to join Nels at the Toroweap Overlook for a weekend of festivities. This won't be no weenie roast!! November 26, 27, 28, 1999. Bring your own supplies.

He's not a boatman yet, but...Carol and **Allen Haden** (Expeditions) have adopted Curtis Sinclair Haden, born April 12, 1999. He's happy, big and growing fast. Allen says when he grips your finger with his little hand it gives the same satisfaction as pulling on the oars of a really fine boat.

*Send in newsworthy tidbits and accomplishments that relate to members of our community near and far and we'll include them in this column. It's the closest we're going to come to the society page. Mark the submission "for Downstream News".



Bruce McElya

Drowning at Mile 76

THE FIRST STEP is the biggest. Sloshing through shockingly cold water onto the motorized raft at Lee's Ferry, thoughts of a quick call from the dilapidated pay phone may cross one's mind. After all, once you board and drift from shore, you are in a rare position in today's society: stuck. For good or ill, the next eight days and 225 miles are in many ways out of your control. Which is why you've come.

Seven of us had planned this trip together; the other ten were unknown. From rafting years before, we'd learned this was part of the delight: people you would normally never speak to, out of either intimidation or boredom, turn out to have fascinating things to say. So we pulled into the gentle jade current, ready to create a small but fully-functional organized floating community.

Dennis Harris, the boatman, is the Christopher Columbus, the town manager, the patriarch. Joking about how some people complain immediately upon discovering their welfare is in the hands of a man who hasn't cut his hair since the mid-'80s, he handles the rudder without looking. Some 150 trips like this have given him all the confidence he needs to deliver us safely to Diamond Creek. Cynthia Billings is first mate and first lady—as frisky and strong as a colt, with what my brother calls calico hair: auburn, honey, gold, cocoa, floating long and free between her visor and her sarong. She exudes enthusiasm; the smallest gesture on the part of a passenger, like filling a water bucket, is met with a heady, “You rock!”

The rest of us are stories yet to be shared, first impressions that will be reinforced, and altered, at varying times during the week. Still with our cultural game faces, we start throwing out tentative disclosures like the first hesitant cards in a poker game. Someone is afraid the hikes will be too hard. Someone else is worried a cat back home in New York won't be fed. I brought a mirror.

Common wisdom holds that it takes three days to hit your stride on the River. On the ride up, four people have had four cellphones working. Gradually, the stake in the outside world falls away. But our second day, I find out my brother and I are both still mentally calculating miles: at the rate we're going, we don't have any built-in pad. We must make better time. Intellectually, we understand Dennis is aware of what must be done, but the deadline mentality we've brought is not as easily packed away as my cute but tractionless boat shoes.

Sunday, the third day, things are jelling. Carrying buckets down to the water for dishwashing, I realize I'm smiling out of the pure pleasure of being in this place. Walking to the bank under an arch of tamarisk and willow branches, with the endless music of the

Colorado, the preternaturally blue sky, and no responsibilities save returning with a full bucket, I am completely content. As much as I love my home and family, I am not often completely content doing morning dishes. I savor the feeling.

Maybe because I'm now adapted, I become more curious about fellow passengers. We've already taken my favorite hike; I've dreamed about seeing Saddle Canyon again for 15 years. So it was startling to hear Cindy, a veterinarian from Alabama, say upon seeing the thin ribbon of silver falls at Saddle, “We came all that way for this!” That evening at camp, I'm spreading clean laundry on a rock (although clean is a relative term; a little Ivory soap and the 45 degree water, and you figure sun and scrubbing sand will do the rest) next to where Cindy is writing in a notebook. I ask if she journals; we begin to talk. She has endured the worst experience of her life only weeks ago. She and a companion were hit by a car; he may never recover fully. “I never want to go through anything like that again,” she says.

That's when we hear the shout. I don't even know if it sounded like, “Help!” but we look at one another in alarm. As we move toward the beach, we see a man, floating down the river by the cliff wall 100 yards away. Only his head is visible. Then he goes under. Dimly I recall having seen a man fishing off a rock ledge just up the river on that side. As we begin to digest what must have happened, Dennis and Cynthia have already leaped on the raft, untying as they go. Mike, a 22-year-old from Pennsylvania, and Paul, a New York television director who used to be a volunteer firefighter in Long Island, jump onto the raft as it pulls into the current. Cindy begins to shake. I pull her close and start to pray.

“Dear Lord, be with that man. Be with our crew, and help them do Your work here.” We watch, riveted, with others from our group who had been drawn from camp activities. Dennis has headed downriver. “That guy is up here! He's going too far!” Cindy protests. I say the smartest thing I'll say the whole trip: “Dennis knows what he's doing.”

(Later, Paul puts it best: “Dennis read that river like a dime store novel.” I hear Dennis describe to National Park Service investigators how he happened to be at the right place to rescue the man: “At that point, the current is along the right bank, then it cuts about a forty-five degree angle across, and swirls and eddies where we went. I knew I had to have passed him.”)

Sure enough, we see a burst of movement on the boat. “They've got him!” someone yells. After starting to wonder if anyone could have survived this long in water so cold you get brain freeze washing your hair, we breathe a collective sigh of relief. We wait for the cough,

the movement. Surely he will now say, "That was close!" and head back to his camp with a good story.

But instead, the intense and driven gestures of CPR begin. We watch the force in Mike's muscles as he tries to get a heartbeat. We see the focus of every line in every body on that boat, as Dennis heads upstream. We have a veterinarian and a registered nurse at camp, he's remembered. Both Cindy and Patti are ready to climb on board before the boat even reaches our beach.

As anyone who has witnessed a car accident knows, waiting and watching feels horrible. We continue to pray, alone and in groups. "God, I know You know what You're doing," I say. "But if there's any wiggle room on this one, please bring him back. Please bring him back." The CPR continues as the boat angles back upriver, fighting the inexorable current with everything a talented boatman and a 30 horsepower motor can do. Dennis reaches the beach where the man had slipped off, and bounds up the rock cliff like a mountain goat, only holding his Iridium satellite phone. He's going to get help. Somewhere in here, members of the man's group arrive, down their beach across the river. Other guides start trying to reach a satellite with their emergency phones. On the boat, the relentless CPR doesn't flag or dim. It is heartbreaking to watch; obviously, they wouldn't be repeating the desperate exercise so long if they had been successful in bringing him back.

Around the time the helicopter came in, most of us were shifting our prayer. We began talking about how this would be a perfect place to die, if it were one's time. We wondered if the body on the boat was only a shell being watched by the person who had inhabited it, and if he felt compassion and tenderness for the crew of rescuers who were not giving up; who would not give up, this long and exhausting hour and more, until they could no longer reach him.

First we heard the rotor blades of the chopper, then saw it swing into view downriver and head toward us, red lights flashing like a lighthouse in the gathering dark. It was an odd sensation, like stepping into an episode of "M*A*S*H," when "Incoming!" is a harbinger of hard things. The chopper pilot reached the bend in the river where Dennis had stopped the raft, and we presumed radio communication was going on while the pilot gauged wind gusts and the feasibility of landing; first by the raft, then on another beach across the river.

Like displaced children wanting to help their parents in a crisis our group had started potatoes baking, brought warm clothes down to the beach, and finished setting up tents. Then, from across the river, came a shout, "Clear the camp! The chopper needs to land!"

We knew the rotors would create a tremendous updraft to suck anything not anchored down, so we tore to the edge of the campsite by the water. Tents and bags,

already weighted down with rocks against the river wind, were hurled into the ridge of tamarisk trees. Later we found out we'd broken lotion bottles, ruined possessions. But we battened down in the bushes and watched the helicopter slide and hover, seemingly dangerously close. The raft slid across the river, holding position against the current, and several from our group leaped forward to help carry the metal table that had become a gurney off the bobbing raft to the chopper.

My brother Lindsay was one of those. Later, he told me, "I've never washed a dying man's blood off my hands before." And in the morning he showed me, down by the water, the marks left by the helicopter skids, still in the sand. There were a few drops of blood, but what Lindsay remembered later was a young willow, no more than a branch, starting to straighten again after being bent sideways by the helicopter. Death and life co-exist everywhere, but it's easier to see in the Canyon.

Those of us who seek nature sometimes want to be selective. We love the cold burst of rapids on warm days, but the day it hailed, we were less enthused. We want the rodeo ride down Hermit Rapid, but we don't want that same relentless current to be able to sweep a fishing man down the river. We want basic, elemental things like food cooked over coals and baths in the river, but we didn't sign on for the most elemental of all truths: everything and everyone alive, will at some moment cease to be so. We happened to be there for that moment in the life of Todd Strickland.

We didn't know his name until later that evening. We didn't know he was a Tucson Police officer. We heard he loved to fish, and had a wife and two children. We wept, many of us. Some of those who had put their entire life force into trying to save him felt at moments that they had lost. They had achieved a pulse, had him warm, and breathing again briefly. But then, Cindy said, it was as if he just left.

What I've come to believe is this: our crew was not put there to save Todd Strickland's life. For reasons not clear from the underside of the tapestry, with all its knots and odd patterns, he was not to be brought back. I don't know his family, but I do know I would rather my brave and beloved father die in one of his favorite places than be needlessly gunned down by some punk with an attitude. I trust God more in the Canyon. Maybe because I'm less insulated from His world there.

The Park Service investigator told Dennis later, "He didn't die because of you guys; he had a chance of living because of you guys." At one point, the prayer seemed not to have worked, but I've changed my mind on that. Todd Strickland might have died swallowed up in cold water; terrified and alone, thinking no one knew where he had gone. Instead, he was surrounded by people giving 100 percent of their physical and emotional selves to him, surrounding him with care and concern and

tenderness. Maybe we couldn't pray him back to life, but maybe we could pray him to his next life held and touched and wanted. I hope so.

After the sound of the chopper had dimmed, the boat had been unloaded, tents had been pulled out of protesting stickers and branches, we passed a flask of Irish Mist (a gift from a Vietnam veteran) and had what I think of as a firebase. Cirled in the dark, fortified by warmth, it's easier to talk. Cindy, who had said earlier she wasn't a spiritual person, belied those words describing how the lights off the rotor blades seemed like a halo. Those who had been on the raft shared the story with the rest of us. Those who had been on the beach vowed none of us would walk out of camp alone the rest of the trip, and anyone near the water would be in a life jacket. We kept that promise; a legacy of Todd Strickland. I believe future trips will have lives preserved because of him.

The next day we had to stop at Phantom Ranch. Drownings on the river shake up everyone whose work involves the Grand Canyon. Arizona Raft Adventures, our outfitter, connected Park Service interviewers to our group. Those involved wrote accounts; some answered questions.

We knew by now the Strickland family's story took up where ours left off. We knew there would be a funeral deserving of a 20-year veteran of TPD. We didn't know how to tell his wife and children, "He didn't go alone. We didn't know him, but we cared about him so much it hurt."

People bond in trenches. River groups always get close, but this one goes bone deep. I will never stop marveling at how Dennis could know a thousand quarter-mile stretches as well as he knew that one, and be so instant in his response to the cry for help. I admire Cynthia's toned biceps even more from having seen them pounding for a pulse, long after giving up made sense. Paul, Patti, Cindy, Mike, were heroes out on that emergency clinic on pontoons. They did the Lord's work. I stand in wonder of all of them.

None of that brings Todd Strickland back. But from the effort of the people, the beauty of the place, and the belief in the prayers, I think it wasn't meant to. He did not die alone. Those of us who were there will never forget him. People who were not there will be safer because of him.

The next morning, I walked down to the river to splash off, and my first thought was to blame the water. But the Colorado isn't evil. It didn't do anything wrong. The result was tragic, but the process was as it should be. The river is still running.

I suspect Dennis and Cynthia were worried about how the group would react to what we'd witnessed and done. Some could have wanted their mommies; complained the wilderness experience had been ruined; or simply been unable to coalesce what had happened.

But we moved on. We didn't forget Todd Strickland. We continued to talk about him through our last day in the Canyon. We also savored our dinners, plunged into pools at the Havasu, and laughed when Lindsay or Paul or Matt made one of their matchless bon mots. We toasted our leaders the last night with admiration, respect and love. Many lives had been affected by the canyon. Sometimes, some end there.

Among those who love the Grand Canyon, it is considered good fortune to die there, like Bert Loper, slumped over his oars in a rapid at age 80. Like others who have loved the river: agile photographers Emery and Ellsworth Kolb, explorer John Wesley Powell, intrepid Norm Nevills who instructed rowers, "Face your danger!" Todd Strickland is not gone. Just gone on ahead.

Ed Abbey wrote in *The Hidden Canyon - A River Journey*: "Night and day, the river flows. If time is the mind of space, the Colorado is the soul of the desert. Brave boatmen come, they go, they die, the voyage flows on forever. We are all canyoneers. We are all passengers on this little, lining mossy ship, this delicate dory sailing round the sun that humans call the earth."

Joy, shipmates, joy!

Lisa Schnebly-Heidinger



Bruce McElya

Whale Foundation

THANKS to everyone for their continued support of the Whale Foundation. The strength we share is the strength we have within this community. It is important to understand that although each one of us is an individual, we are not alone. "Misery loves company" and "a friend in need is a friend indeed" are a little trite in statement. There is truth in their message. So, Brothers and Sisters our family is strongest when we support one another. The Whale Foundation is there if you need it. Or if you just want to talk to somebody, talk to me or call a friend. But most of all let's keep this thing going. Thanks.

The Whale Foundation
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Bob Grusy

1999 GCRG Fall Meeting In Kanab October 30

HEY—it's that time again. You know, time to talk about the next round of meetings. This year, the good folks at GCE have agreed (silly them) to let us come have our Fall meeting at the warehouse in Kanab. We can't thank them enough, partly because Halloween is on—you guessed it—a weekend this year. We figured there might be no better place to have a Halloween party than in Kanab, after a day of river guide stuff.

So... plan to come to Kanab at the GCE warehouse October 30. The meeting will go approximately from 9 A.M. to 5 P.M., party and costumes to follow that night. We've even talked to Bill Gloeckler and his band about a return engagement. He's thinking about it. Could be fun. You think about it, too. You'll get something in the mail about it soon.

A RIVER RUNS THROUGH IT

It is time
Touch it
Trail your fingers over a billion years
Linked in the red rock
There is no monument, no temple more sacred
Than this monumental temple to the whole
wide world
This great chasm of the whispering eroded eons
Terrible majesty beyond comprehension
Tender intimacy of glowing glances of sunlight
and splashing waters
Stand here on the riverbank awhile and drink
Let the true peace of the last wild places wash all
the dirt from your soul
Leave you clean and empty and new
See the light play here and there over bench
and spire
Gold, tan, red, buff, gray
Hear the love and music of the free water
Green, brown, white, splash, glitter
A new note every day in the symphony of the
universe
The sun sets and you see there are two rivers
One beside you
One above you
And as you watch the stars wheel slowly through
the sky dance
The silent sandstones leaning over you reveal
the grand secret:
You are part of all of it, and it of you
The past is forever and unchanging
But the present moves through it as it will
And the sky reflects it all and gives it back
The waters that divided these vistas flow
through you
You were the rock
You will be the sand on the riverbank
And the life that is in you
Will pass through you
From the quiet layers of the past back into the
flowing future
Giving life ever downstream
In God's good time

*Charlotte Graham-Clark
Virginia Beach, Virginia*

The Place Is Falling Apart

ON NOVEMBER 8, 1998, a Park Service Archaeology Monitoring trip pulled over below Badger Rapid to gather firewood for the evening. Chris Brod, spotting three condors standing nearby, pulled his camera out and started taking photos of the big guys. Thinking he heard thunder, Chris looked up to see a white dust cloud and turned his camera to get this rockfall on film. The rocks didn't quite make it to the river, stopping just feet away.

Too bad he didn't have a video...



Chris Brod



Fly a Little Lower, Will Ya?

I want to get a shot of the ledge hole.

IN EARLY JUNE, a helicopter was seen flying upriver at Lava Falls, about 100 to 150 feet off the water. It wasn't a Park helicopter and it wasn't an emergency. It appeared to be a sightseeing helicopter, although we still aren't sure. The party that saw this helicopter got a photo and the ID number, which is now under investigation. As a sightseeing venture, this is not only very uncool, it's illegal. If any of you out there see anything similar, please note the place, date and time, information about which direction they are going, the ID number of the aircraft and a photo if at all possible. Even a bad photo is better than nothing. This is really important and we need everyone out there keeping watch. It's one thing if this was a one-time transgression, or if they were on a special mission, but if it is the beginning of a sightseeing trend, we need to know about it.

Please send any information you get to us. We'd like to make note of it and we will forward it along to the Park. Thanks.

It's Lonely At The Top

CURRENTLY there is no one running for Vice President of GCRG. Why? A lot of folks I've talked with lately tell me they don't have the time to get involved with GCRG let alone be on the board. What I hear alot is that if they can't give it 100% then they don't want to give it anything at all. That is a cop out and so then the job goes undone. Get involved, give a little time to what you believe in. Look, I understand at this time of year it is difficult to find the time to write a letter home to mom. It isn't always going to be July. Later when you can find the time, after you have written your mom, dedicate some time to what you believe in: the Canyon. There are a lot of good ideas out there, people are always telling me what I and/or the Board and/or GCRG should be or needs to do. If it's your idea, move on it, get involved with it.

Bob Grusy

Swimming—With Your Arms or Not?

THE PARK SERVICE has a regulation that states there shall be no swimming in the rapids. For a blind stance on safety this seems like a great regulation. But I question it and would like to hear how you feel about this.

As a river guide I am required to get a boatman's license, so I am familiar with the regulations; do educational training, so I can teach geology, etc; learn about food handling, so I don't kill anyone in the kitchen; certify in WFR and CPR, so they come out somewhat alive; and learn Swift Water Rescue, so I can better deal with boats wrapped in Crystal. I'm pretty trained in taking passengers down the river. My experience and training tells me that I must train passengers how to live safely while on this river trip. This training is essential for people with no experience on the river. I believe this regulation does not deal with today's idea of super training to avoid lawsuit and such. If I have a passenger fall out in a rapid, he or she will panic to some degree (some more than others). Especially if Dr. Whirlpool grabs them and takes them down into the land of big fish. They will come up with white faces and big eyeballs. Training guides to swim in big waves, strong currents and eddy lines is a part of Swiftwater Rescue classes.

When a boat flips this summer, does the Park Service want to say to passengers "Surprise, this is what the Colorado River is really about". It seems to me we are trained to teach passengers what the canyon is about in a safe way. Guides can easily teach passengers to swim rapids in a safe controlled manner. They can easily practice swimming in eddy lines and around whirlpools in a controlled safe manner.

I believe that there are simple technique for teaching swimming, starting with tightening the life jacket and explaining breathing and swimming techniques. This means breathing between the waves; swimming when waves end; and swimming head first, keeping your body flat to avoid getting pulled under by eddy lines and whirlpools. Have swimmers jump out from the back of the boat, then signal them into position for a safe ride, and pick them up below.

My hopes are the Park Service will look into changing this regulation.

Jon Hirsch

Steiger: You mean you were the whole.... And you'd never even been down there?

Neff: I'd never been in a boat before... That's right. And they dropped me off there, and when the boatman didn't show up, I took the boat, and I took two people, and I'll tell you what, I can remember their names. It was Ted and Ellen Pope, from Bowman, North Dakota. I'll never forget it, 'cause I took 'em on a ten-day Glen Canyon trip, and those people were so nice to me....

Well, when Ted and Ellen got on the boat and we took off (laughs) we were about an hour downriver, not even to Ticaboo. Ted—he's an old rancher, he owned Pope Ranch in North Dakota. The guy had money. I mean, he knew what he was doin'. The guy's been around the block, and there's this fifteen-year-old kid, and I'm 110 pounds, and he says, "Son, how many trips have you run down here?" "Ah, well, I've been on the river before." And I had, I'd been on the San Juan. I took a Fol-Boat kayak down the San Juan when I first got down there. And I'd run the San Juan in a tube and stuff like that, you know, from Bluff to Mexican Hat, and from Hat Rock to Mexican Hat. So I tried to bluff him.

Steiger: How far is Hat Rock to Mexican Hat?

Neff: About four miles. (laughter) And so I tried to bluff him, said, "Oh, yeah, I've been on the river.

Heck, yeah." And he said, "Son, this is your first trip, isn't it?" And I said, "Yes, sir, it is." And he said, "That's okay, we're just out here for an adventure."

Those trips were funny, 'cause we always ran out of food, and it was real sketchy, you know. All I had was a fire and a little grate, and put rocks around, and go that way... find half a dozen rocks and use it, yeah. The first couple of days on the trip, we'd have what we called fresh food, which was lettuce and stuff like that, and tomatoes and stuff. And then, about two or three days downriver, all you'd have is canned goods....

Steiger: Did you guys hike up side canyons?

Neff: Oh, we went up every damned canyon we came to.

Steiger: You and the Popes?

Neff: Yeah. And then on subsequent trips after that. In fact, I made a vow that I would go up every canyon in Glen Canyon. So I had my little map. In high school I made a little map, and that next summer, in 1958-59, I tried to go up a different canyon every time, and I had 'em marked. I went up every canyon I could go to. And you gotta realize, in those days, the canyons weren't marked or named. So I'd name 'em. "Okay, that's Three Deer Canyon." Why? 'Cause we'd walk up it, and there were three deer there. Stuff like that....

The thing about Glen Canyon was.... Two things about it: Number one, it was Navajo sandstone, and it was beautiful. And the canyons were cut, and they were neat, and you could walk up 'em. And another thing about it.... Well, three things. The second thing about 'em bein' neat and beautiful and sandstone stuff. The



Passenger and Don Neff, Grand Canyon

third thing was that there were pictographs and ruins *all over* the damned place, *everywhere*. We went into ruins where there were pots sittin' there.

Steiger: Did they have intact roofs?

Neff: Yeah.

Steiger: So real, full-on, almost entire structure was left.

Neff: Oh yeah, beams and stuff. We took it for granted—we wouldn't take pots, we'd just leave 'em there. I never did take pots. And I didn't take pictures, didn't have my camera. The other thing was, Glen Canyon was what I call a wet canyon. There was water all over the place. Now, not every mile, but there were some springs that were just great: you know, Dead Man's

Spring was a great spring. There was water in Lake Canyon, there was water in Cathedral, there was water in Driftwood, there was water in Forbidden Canyon. I mean, there was *water*. So we only took a five-gallon can of water with us, and then we got water wherever we could.

Steiger: 'Cause the river was pretty muddy still.

Neff: Oh, yeah. By the way, we drank the river water, too, and we used it for coffee. We'd settle a bucket out at night, and there'd be about an inch or two of sand in the bottom. Then we'd pour it off....

We had soup every day. (chuckles)

[Mainly] I remember that the Pops were good people and it was a good trip for me, and I got reinforced by that, and got picked up and went back. Gay and Joan liked the job I did, so they put me on full-time and I started runnin' trips. I'd come back-to-back and run trips on Glen Canyon.... They paid me eight dollars a day, and that was good money. That was a *ton* of money. I was in hog heaven, you know.

Don Neff was a great friend and mentor to a small (but distinctive) slew of punk kid boatmen back in the late sixties and early seventies.

Neff is pretty distinctive himself.

He had a distinguished river career—worked for Mexican Hat Expeditions; Grand Canyon Expeditions; Grand Canyon Youth Expeditions; and Arizona River Runners, to name just a few.

Out in the real world he had a fairy-tale run of high school wrestling. He went 60-0-0, and won three state championships in Utah. In college he lettered in both wrestling and gymnastics, and won multiple other wrestling championships. And since then, in addition to raising a terrific family, he's been a successful high school coach and outfitter running trips in Desolation-Grey.

Brian Dierker, who was one of Neff's early Grand Canyon disciples (on the rear oar of a GCYE triple-rig), remembers that Neff could stand flat-footed on the beach and do a perfect back-flip.

Lots of youngsters from back then have fond memories of Neff. The common denominator is how nice he was to us, how encouraging and fun he always was. We didn't really get why he was that way at the time, but a deeper look at his history helps explain it.

We talked a lot back then. I'll tell you what we talked about at night. And you gotta realize, I was young, so I didn't involve myself a lot. I kept my mouth shut, which is hard for me to do. (chuckles) But our focus in those days was that, dammit, they're buildin' too many roads,



Don as a young boatman

they're buildin' this dam, it's shitty, we don't need this, and we oughta screw it up. We used to pick those stakes up by Comb Wash and throw 'em out. We did that all the time on the river trips. And if Ed Abbey was alive today, he might dispute me on this, but I don't think so. He listened. The guy was a listener. He went on the river trip, he listened. He heard us talkin' about, "Well, we need to blow Glen Canyon up. We need to go do this, do that," you know. "How do you stop a cat? Put sand in the gas tank, or sugar, or somethin', and do that." So we all talked about that. That was a big topic. So anyway, my theory is—and it's just theory—but after *The Monkey Wrench Gang* came out, when I read that book, there were too many similarities between what we did on the river, and the way we acted, and the way the people did down there. So I *knew* that Ed Abbey was a writer, and he came down, went on these trips [with us], and he listened to the people down there. He listened to the boatmen talkin' about these things. Too many similarities came up in his book, to make it by coincidence... What about drivin' a truck and throwin' beer cans out the side, and stuff like that?

Steiger: Did you guys do that?! (laughs)

Neff: Well, of course we did!

Steiger: You threw beer cans out in the desert?

Neff: Well, of course we did! Of course we did.

Steiger: Who were some of the other crew members there, that Abbey saw?

Neff: I can't remember. I just remember... Well, Gay was the main man, and that was it.

Steiger: But was Gay carryin' on like that?

Neff: No, no. No, Gay was a very proper, disciplined guy. Gay was Gay.

Steiger: I can't picture him rantin' and ravin' about the dam.

Neff: No, no. Gay was super-duper. He was a class act with me and with the company. I mean, Gay was not ornery at all—I was, and my brother was.

Steiger: So it was *you!* (laughs)

Neff: Yeah.

Steiger: And your brother.

Neff: But we did those things, me and my brother Rich. My brother Richard ran for Mexican Hat, too, in Glen Canyon. I have a picture of him somewhere. He ran, too. But Rich was a rebel. Man, he was....



Cataract boats in Grand Canyon, Mexican Hat Expeditions

Steiger: So you guys were seein' the uranium mining, you were seein' the dam.

Neff: We saw a lot of things.

Steiger: You knew Glen Canyon was doomed. And all that stuff.

Neff: Yeah. And too many similarities came up in Abbey's book to be an accident. He didn't make those things up, he *heard* 'em from the boatmen he listened to, and from the people in Mexican Hat he listened to. The guy's a great writer.... I also remember in that book, the deal about they had a Jeep in the book where he went over the cliff and they let it down by a cable.

Steiger: A winch, yeah.

Neff: Remember that?

Steiger: Yeah.

Neff: Well, hell, we.... (laughs) Not "we," not me, but that actually happened down there at Mexican Hat. In those days, it was Wild West.

Steiger: You mean somebody did that?!

Neff: Oh, hell, yes!

Steiger: Winched their Jeep down into a canyon?

Neff: Oh, yeah. Everybody was drinkin' and stuff, you know. Those miners were just *crazy*. They were hard workers, and hard drinkin' sons of bitches, you know, and they would do anything. I saw 'em one time, Lew, on the top of Mexican Hat Cliff, above Jim Hunt's place, they took a Caterpillar tractor and teetered it, and tried to bet each other who could go the farthest and teeter that D-g Cat or something like that—a cat—and see who would chicken out and back it off. I *saw* that! me and my brother.

Steiger: You mean if you go too far, you're goin' how far down?

Neff: The son-of-a-bitch is goin' down 400 feet—I ain't shittin' ya'!

Steiger: And these guys are drinkin' and just playin' around with this thing.

Steiger: Now, you ran in the Grand for how many years with Mexican Hat, with Gaylord?

Neff: Six years in cat boats.

Steiger: Six years, and you never turned one over.

Neff: No... Six trips. One trip a year....

Steiger: Well, now, after you were the young guy, was there ever a young guy underneath you?

Neff: No.

Steiger: You were the young guy for six years? (laughs) Did *all* the dirty work, all that time?

Neff: That's right... And that's why I vowed, boy, I'm *never* gonna treat Brian [Dierker] bad—never. Of course I did sometimes.

Steiger: Not to hear him tell it.

Neff: I love Brian, and Dan. I'll tell you what, there's never—there aren't any better persons on the earth than those guys.

Steiger: So then what happened after six years with Gaylord, after Mexican Hat?

Neff: Then I went back to school and I got married. Actually, I got married in 1964. And one day (chuckles) I was in Salt Lake City and I was on Highland Drive, and I went by this place down there, and I saw these boats out there, and I stopped, and it was Ron Smith, startin' his company; Bill Belknap, and Dick McCallum. They weren't all there the same day, but I'm sayin' I just stopped in and said, "Listen, I'm a river runner, I'd like to run rivers with you." And so in 1966, I think, I

started runnin' with Ron Smith and Dick McCallum. Dick and I ran a lot together. Pete Gibbs came in—a lot of guys went through there.

About my first trip through Crystal? ... That was in 1966, I think. Anyway, we started the trip. Smith and Belknap told us that Crystal came in, big flood and stuff. (Steiger: So up until then, Crystal was....) It was *nuthin'*! Calm water. So we go down there, and Pete Gibbs is with me on a triple-rig, and we're followin' Ron Smith in a motor rig, and of course you get off early in the morning with the triple-rig and go, and then they follow you and they pass you and they camp, and then you finally end up there at dark and get 'em.

We came to Crystal and we pulled over on the right side and parked, and there were logs like you couldn't believe on the right side. It was *horrendous*!

Well, backing up a bit—first we went through Hermit, and we see on the sides—we're goin' through Hermit, and I notice this scum line on the side of the wall on the right side of Hermit. There's a wall there down below, when you get through the tailwaves. I'm looking at the scum line there, and I go, "My God, what the hell's goin' on here?!" And there was some wood, too, up that far. I'm goin', "Shit! This is weird! I've never seen anything like it. What the hell's the deal?" We pull over at Crystal. Oh, my God....

Steiger: Trees, logs, on the right side.



Young Brian Dierker and R.J. Neff, apprentice boatmen

Neff: This thing is so bad I can't believe it. What are we gonna do?

Steiger: So, like you were sayin earlier, these trees, this is like the remnant of the dam, from the flood? (Neff: Yeah.) And this flood dammed up the whole river?

Neff: Yeah, big logs—big logs. We called 'em Crystal logs, and they lasted for years.

You could always tell a Crystal log, even downstream forty miles. It was chewed up and beat up and had these splinters stickin' out of it, you know. You could always tell it. It was rounded, you know. You could always tell. I could show you a Crystal log. I'd say, "That's a Crystal log, it came out of Crystal." And I'd be right....

So we get down there, and I heard that John Cross, Jr., was ahead of us in a motor rig, and he went through Crystal. All of us ran down the left side.

Steiger: 'Cause there wasn't any right.

Neff: Nah, there was no right—no right run at all.

Steiger: What did it look like over there?

Neff: A lot of logs, you couldn't get through.

Steiger: Stuck together, or floatin'?

Neff: No, not floatin', just logs piled up on the right side.

Steiger: Just jammed in there.

Neff: And remember, there's an island there, and there's a red rock. Remember the red rock there? Yeah. Well, you couldn't go right of that red rock and those logs and—just *junk*. And a lot of rocks and stuff that has since been gone. So Ron decided to run it, and he ran down the left side. We were a long ways away, we

couldn't tell how good he did or anything—it looked good. Pete and I said, "God, gotta go. Let's go!" So we did, we got out in the current and pulled over to the left side as far as we could, and went down that left side, and I'll tell you what, it was a son of a bitch. There's a hole down that left side that we went through that was bigger than the Upset hole. It was just huge, it was just ridiculous. All we did was get down there, and then we buried down on it and leaned over the side, and everybody was down flat. Pete was in the back, and Pete's strong, he's a climber, he's real strong. And Pete, after we got through that hole, and went down that left side, I looked back and the back of the triple-rig was folded under, and Pete was hangin' on. I saw him crawlin' up there, and it took us minutes to get that back boat kicked up.



Don Neff and Pete Gibbs running a triple-rig, 1968

Steiger: So that last hole, the bottom hole folded him.

Neff: Yeah. And you know what, that hole ain't there anymore—it's not there. The one on the left was bigger than the one on the right that stayed. That one on the left disappeared after a few years.

Steiger: Far left?

Neff: Far left. It was *huge*, I couldn't believe it.

Steiger: It was the second one down.

Neff: Oh, my God! We went through that thing and surfed and kicked the back end up and went over. And finally, oh God, we were so happy to get through there. You talk to Pete Gibbs today, and he'll tell you that was just.... shit! That was stupid!

Steiger: Now, was there anybody in his boat that folded under? Or were the people all in the middle?

Neff: They were all in the middle.

Steiger: You were on one side, and he was on the other side.

Neff: You bet. I was here, he was here, and in the middle we had everybody down tight.

Steiger: Was that what they always did? Like when you ran the youth trips with Brian and all that. (**Neff:** Oh, yeah.) People are in the middle. (**Neff:** Down.) And the boatmen are on the outside. (**Neff:** That's right.) And that's it.

Neff: Once in a while we'll have a person on each end. (**Steiger:** To bail the boats.) Yeah. But when you get out of a rapid like that, yeah, you're full of water anyway. You're so full when you get out of there, rowing a triple-rig is not even.... You just take your chances. You bump into the wall, do whatever you can.

Steiger: You're not gonna turn over, but you're....

Neff: Oh, shit, you're not gonna turn over, but you can't control....

Steiger: You're goin' wherever you're goin'.

Neff: You're goin' anywhere the river wants to take you. That's it. That's a fact.

Steiger: Wow. So what did these people think about all this? You guys just ran it because there wasn't anywhere else to go. You didn't have an option, really, of lining, portaging.

Neff: No option.

Steiger: You just had to run it.

Neff: If we had it to do over again, knowing what we did, goin' down that left side, and it was so scary, we probably would have tried to dismantle the boats and line it down the right. But even if you do *that* in Crystal in those days, you had all those logs to go over. There was no option, Lew—there was no option. And we're

just goin', "God, Ron's gone! Shit!"

Steiger: Was he waitin' for you down below?

Neff: Well, sort of, yeah. (laughter)

Steiger: Whew! Terrifying! So before he gets you, you're sittin' there and you got one oar, and you got no control.

Neff: No, we're just scramblin'. "Everybody okay? Okay. Okay, we're here, we're okay, we're okay. Pete, how you doin'? Let's get this back together." And just do what you can. And you pop it up, get back on, put the oars in—"Hey, everything's fine, let's have a beer!" I mean.... Shit!

Steiger: Sometimes I think.... I look at how much it's changed in the last thirty years, and we've damned sure smoothed out a lot of the bumps for these people.

There's no longer too much doubt that you're gonna get through okay. (**Neff:** That's right.) I mean, it's rare that you see somebody crash.

Neff: That's right. We made it clear that you *can* get through there, and you *can* make it, and it's fun.

Steiger: But now most of the people who are coming expect it. (**Neff:** Uh-huh.) But what were those people like when you got out to run Crystal that first time? Do you remember those guys?

Neff: They looked at us just like we're gods, you know—we're gonna get 'em through.

Steiger: They did?

Neff: Yeah. And we *did* get 'em through, but we didn't know if we could get through.

Steiger: Yeah, what did you think, pullin' out?

Neff: Oh! I'll tell ya', while I was runnin' I just said, "Please, God"—I prayed, you know—"get me through here, please." That's the way you do it, because you really think you're gonna.... You really think you [don't].

know anything. "Please get me through here. Get all these people through here. Please, let my son [R.] who went with Neff all the time] get through here." That's the way you go. Nowadays, hey, it's easy. Just like kayaking used to be a neat deal. Now they're fallin' off of cliffs and everything. I don't know!

But I've done it, too. Once you get to that point where you've done all this stuff and you've run a few, then it's okay, it's all over. You've made your spurs, or you've done things, and I don't need to do that anymore. But I love the river. I want to float the river...

But I don't want the hassle. I don't want the pressure of havin' to prove myself or run a rapid or anything. I mean, hey, I'll just get along, and I'll be in the background. It's funny, I guess there's too many people in the world. And I guess too many people have run Grand Canyon. Once we've run it a few hundred times, you know, you learn that you can run it. Just like we used to line Soap Creek all the time [in cataract boats with Mexican Hat Expeditions, which later became Canyoners]. *Nobody* does that. My God, you ask a young kid today, "We gotta line this rapid," he'd say, "Ah, fuck you! We're runnin' this!" Bang! you know.

Steiger: Well, but Soap was different, wasn't it?

Neff: (laughs) Yeah.

Steiger: It flushed out a little bit, right?

Neff: Yeah, it did. We thought it was bad, yeah.

Steiger: I mean, I'm sure it had to be a different deal.

Neff: Well, you saw that [home movie, watched earlier] with the guy standin' up there, takin' us into Badger Creek, you know, which is nothin'.

Steiger: Yeah, that was pretty good... In this movie we saw there's a guy on shore directing the boats from afar, with two arms up, kinda sayin', (Neff's laughing obscure's Steiger's comment.) _____ sayin', "This is where you go, man." It's so funny. And you guys actually did that?

Neff: We tried.

Steiger: How long did *that* last?

Neff: A couple of trips (laughs) and that's about it.

Steiger: So you did it in every rapid? You had a guy down there that was linin' you up?

Neff: Well, not every one, but when it was convenient. See, the funny thing about runnin' the river is, Badger's okay, you can put a guy up there on the cliff, and he can go like (gestures) this, this, this, this, and "go!" you know. That's fun. Then you get down to Sockdolager...

Steiger: Is he just up high on the cliff? (**Neff:** Yeah.) And he's lookin' down on you, and you're looking back at him. You're not linin' up downstream.

Neff: We're supposed to [look at him], but by God, you're busy, you know.

Steiger: Did that guy read water? (chuckles)

Neff: No, no. It's bullshit. I told you about that. We didn't really do that—I didn't. I wasn't smart enough to do that. All I did was keep my boat straight and say, "God, get me through here". That's all I did, you know. And I was lucky. But it was funny. You gotta realize in those days nobody knew anything. They didn't know. So we thought, "Maybe the best thing to do is put a guy up on the cliff there, and he can guide you." Well, what the hell?

Steiger: 'Cause he can see the whole thing, just as far as readin' water.

Neff: Yeah. Stupid, huh? (laughter) But you don't know! (laughter) I know, I'm embarrassed about seein' it.

Steiger: No, it's amazing. I mean, it's amazing how far it's evolved.

Neff: Well, you know, like I told you, we didn't see anybody for eighteen days. You know, when we saw Georgie on a trip, that was *great* to see Georgie.

Steiger: What do you suppose was the highest water you saw in a cataract boat?

Neff: Ninety thousand.

Steiger: Oh, my God!

Neff: And it was huge. You know what? We ran a trip... And here's how I measure it. I measure it by the number of lines we did—I mean, how many rapids we lined. We lined about eleven rapids one year. When the water got to 90,000, we didn't line, but, oh, heck... I was tryin' to think—we lined Hance, we lined Lava, and I think that was it.

Steiger: That must have been really hard, too—those eddy lines and boils. (**Neff:** Yeah.) Oh, man.

Neff: And actually, we probably shouldn't have lined 'em, but we did.

Steiger: Yeah, that's harder than...

Neff: Yeah. But we were scared to death. But everything was wiped out—even Horn Creek. Horn Creek was a slick, and that was it. And of course Crystal wasn't in there. You know what? There was a rapid called 25 Mile [Twenty-four-and-a-half Mile], 26 Mile, 25 Mile...

Steiger: Cave Springs?

Neff: Up above Cave Springs.

Steiger: Oh, yeah, the next thing up.

Neff: Yeah.

Steiger: Pretty good riffle there.

Neff: Yeah. Let me tell you somethin'. You don't think much about it, but in those days, I'll tell you somethin', that was a son of a bitch.

Steiger: Big waves?

Neff: Oh! And you had to go far left on it, and it was a son of a bitch. Then again, you look back on it, and you think... Today, guys will look at that and say, "Aw, bullshit, that's nothin'!" But it was somethin' then.

Neff: What's it gonna be like in twenty years?

Steiger: I can't even grasp it, I really can't.

Neff: No, I can't either. I kinda feel sorry for those kids, but they're gonna do it, and do the right thing, and do what they can. But there's so much—the rules have changed so much.

Steiger: Yeah, and there's so much.... I was talking to Dave and Vicki Mackay today. He started workin' for Currey, and he essentially, let's see, he got like one trip—his training trip he was the front set of oars on a thirty-three. And then the next trip, they sent him down Grand Canyon on his own, in his own boat. I think he was followin' somebody then, but he ran all these one-boat trips, and he said he had Les Jones' scroll map, (**Neff:** I got one of those.) and that was it! And he said he didn't know shit. He was runnin' like that year, the very same year he started, he's down there, he's runnin' these one-boat trips, he didn't know the name of *anything*. And people would.... And then Vicki, his wife, was goin' with him, and she was sayin' they'd get to these places and people would go, "Where is this?" and they'd go, "We don't know. But who cares?" (laughter)

Neff: Yeah!

Steiger: And then she said it was so cool to be in these places, and I'm thinkin' it had to be like this for you in Glen Canyon.

Neff: Yeah. I have a scroll map from Les Jones. I *knew* Les Jones... He was workin' as a draftsman here in Sugarhouse when I first met him. God, the guy did a great job makin' those maps. That was a *landmark*.

Steiger: Yeah, helped a lot of people.

Neff: Oh, yeah! You kiddin'?! Me, too! I still have a scroll map of his. Wish I'd have got all of 'em. What a great guy. I could tell you stories.... Oh, God, when we were down in Grand Canyon one time.... (laughs) Oh, hell, we were down at Whitmore Wash, and Bundy—remember Bundy?

Steiger: Of the Bundy jars, the Bundy family. I didn't.... Well yeah, there's Garth Bundy. Is that the one you're thinkin' of?

Neff: No, no.

Steiger: Probably his dad or somethin'...

Neff: Anyway, we're down there at Whitmore Wash, and they bring mules down and refurbish us for trips, you know.

Steiger: This is on the Mexican Hat trips?

Neff: Yeah. And we're down there, and I'm a young kid, and Johnny Harper—I mentioned that name before [Mexican Hat boatman]. So we're down there, and this Bundy guy comes down, and Bundy comes down on the trail of Whitmore Wash, and they bring the horses and we get new food and stuff, you know. So we're gonna go fishin', and that big eddy there at Whitmore, it's a big

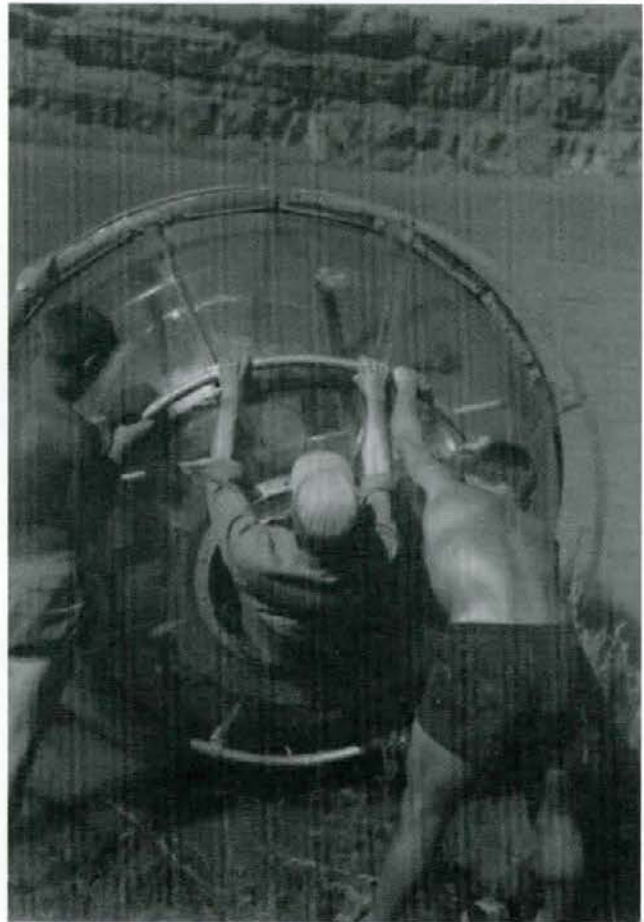
eddy.... (laughs) I'm a young kid, you know. "Okay, we're gonna go fishin'." "Okay, I'll go with ya'." So I got out there and we're standing there—no fishin' poles, nobody has a fishin' pole. They got dynamite! And they get a piece of dynamite out and put the cap in it and light it up and throw it out there. Boom!

Steiger: You guys are standin' on shore?

Neff: Yeah. And I'm goin', "God, these guys are nuts!" Boom! And nothin'! And Harper says, "Well, we oughta try one more..."

Chet Bundy! Chet Bundy. That's who it was! He lights another one up, throws it in there. Whitmore Wash. Boom! We're all drinkin', of course. I'm not, but I'm a young kid. But these guys are drunk, you know. Harper says to Chet, "Well, Chet, old buddy...." You know, no fish. "Chet, old buddy, I guess they just ain't bitin' tonight." (laughter) I'm goin', "Oh, my God! These guys are crazy!"

What story can I tell ya'? How about the bubble story? ...Wayne Wilson. This is a story about a guy that came to Mexican Hat, and I don't know the date, it was



Larry H., Wayne Wilson and Don Neff wrangle the Water Trotter on the San Juan

probably 1961, 1962, I don't know. Anyway, I was workin' for Gay Staveley, and we're gonna run the San Juan River, and this guy comes down here—Wayne Wilson from York, Pennsylvania. He comes into town with a trailer behind his truck, or whatever it was, and this great big bubble on it. It's called the *Water Trotter*. He pulls in there, and says, "We're gonna run the river." And hell, I didn't really see it when it came in—Gay did. It was pulled in down there. I don't really know how it came about to be, you know—I really don't. I gotta talk to Gay about that. Anyway, he had this bubble, it was a Plexiglas bubble with a frame of—I guess it was aluminum, struts all behind it—but it was a bubble. And what you do is (chuckles), it's called a *Water Trotter*. You get in this thing and you walk, and it's incredible. You're not gonna believe this.

Steiger: Did it work?

Neff: Oh yeah, it worked, but in calm water it worked—not on rapids. So we had trouble immediately.

Steiger: Oh, 'cause he's goin' *with* you?

Neff: Oh, yeah.

Steiger: It's not like he's goin' on his own—he's goin' *with* you. You're takin' him down.

Neff: He's goin' with me and Gay Staveley on a trip through San Juan, from Mexican Hat down. I have a picture of him goin' under the bridge at Mexican Hat. And so we get down there, and he walks in it. We go down there, and we go and we get down to Paiute Rapid.

Steiger: Are there like little blades on the outside or something?

Neff: Yes, there are.

Steiger: So when he's walkin', that's what propels him?

Neff: Paddles, you know. And I wish I had a picture to show you.

Steiger: I can kind of picture it, when you get to a rapid. (laughs) He's *gone!*

Neff: So we get down to Paiute Rapid. Everything's goin' fine 'til there. We get down to Paiute Rapid and he runs it through there, and the water's low, and it breaks some of the plastic off of the fins. We go on through, we go down to the Thirteen-foot Rapid and we don't take it through there, we take it around. We get down on the Colorado River side, you know, and goin' through Glen Canyon. And finally the guy gets tired. Anytime they're gonna take pictures, he's in there. But he gets tired, so I'm a young boatman, I'm the youngest guy there. So they say, "Hey, Don, get in it." So I get in it.

Steiger: "Don, *you* take this thing."

Neff: Yeah. So I get in it, and I walk [around]. Hey, it's good! I walk around in the slow water, it's good. But if there's any current at all, boy, you're in trouble. You kind of wobble up and down and all around. And you got handles on each side, and you just kinda walk, and it floats around. Plus, it's hot. It's hotter than heck!



Don Neff on *Lodore*, 1997

Steiger: Oh, I can imagine! You're not gettin' wet. You're bone dry.

Neff: What you do is, you put a little water into the thing, and the bubble will (Steiger: Drip on ya'.) spray some water around. After we got to the San Juan confluence with the Colorado, down by Hidden Passage (chuckles) then they say, "Hey, Don, go do it." So I run this thing down there, and we're floatin' and it's a bitch. It is a bitch. It's hotter than hell in there. You gotta tip it upside down, get down in the water, and then get back up and go on. And then when there's picture opportunities....

Steiger: The guy takes over again.

Neff: The guy takes over, and then we do the flash shots and everything.

Steiger: "Don, get back in the [boat]."

Neff: "Don, get back in the boat there." (laughter) We ran that thing down to the Crossing of the Fathers, and we got out there. Somebody brought his trailer around, and we fixed it up. He disappeared, and after that we didn't see him. But I'll tell you what, that was an experience, it really was.

Steiger: Oh, my God. That picture was wild.

Neff: Yeah. It was neat. He was a good guy, but he was an eccentric from the word "go."

On Neff

Excerpts from the musings of Brian and Dan Dierker

I WORKED WITH NEFF [at Grand Canyon Youth Expeditions] for about three years, full seasons...I had these two guys: one of 'em was a good friend of McCallum, Jim David; and then Neff comes in. And Neff was from a different angle. Wrestling coach out of Salt Lake City, but Don had a tremendous history in Grand Canyon... He's got an incredible history... And of all the guys, I mean, Neff and Jim David took me under their wing and just completely buffed me out in what would normally be confusing shit for kids. They just nailed it down with me. And Neff was a very caring, loving guy as far as friendships and stuff.

But...I think he was completely hating it when he was put into the position of having me on the rear oar of a one-boat, triple-rig trip, 'cause the first time I ran with him, it was in 1972. I'm on the back end of this triple-rig trip, right? Back then, it was like he told me what his sign language was, and I just lived through that little puff-bellied body of his. He said, "Don't ever look at anything but me." Which was right. I was on it, man. I did not want to fail. And so we got to a big rapid, I remember...We got to the first rapid, and he looks back and he goes, "Oh, Jesus!" And I don't know what's upsetting him about me, but when he looked at me, he was upset—just looking at me! And I realized later that it was the helmet. He gets down there, and he's comin' from another place. They didn't wear helmets. Grand Canyon Youth Expeditions: Rapid? Helmet! He hated it....

Finally, above Crystal, there's some other people at Crystal, and he takes me aside. He goes, "Listen, I know this is a big, scary rapid, but I want you to lose the helmet. It looks like hell," and walks back to the boat. I think I buried it or something. I couldn't get rid of that helmet quick enough....

In camp, Neff was great. You know, those early trips were really like pretty wholesome trips as far as there was never beer. Neff would bring a little nip of whiskey. There wasn't drinking. So it was always a real inner sanctum to sneak off and drink a little nip with Neff. It was like the total inner sanctum—it was wonderful. And so that kind of taught you about that—the "wonderful shroud of darkness" as he called it. He was a night owl, man, and the guy was totally fun.

Oh, those were the days. It was so cool.

Brian Dierker

NEFF WAS WONDERFUL with the people. He was wonderful on the river. Because he had the history to back him up, and he would just get amped for water. He taught me, "The river has big ears, don't ever take anything for granted down here." Basically, don't think you can just smoke everything 'cause it's your tenth trip of the year, and everything has gone great, you've got it wired and you know that water... because it will come up and slap your ass. But, before a rapid he was great to watch. He would check everything and he'd make sure everybody.... You know, he'd get all the people in. Not scared, there's a difference between getting people in and getting people scared... You know, you need to check out some stuff, make sure the damn jackets are on, tell 'em to help you out, tell 'em to look around the boat.



Dan Dierker and Don Neff, in the '70s

Neff was wonderful at that. He was great with people in general. He'd kid with them, but yet, he'd kind of talk. Looking at Neff and looking back on it, he taught you the fine line of guiding, and you learned how, as a younger person—Neff showed you that, "Yeah, you are there, under their employ. These people are paying me to take them down." But yet, you also are in charge and calling the final shots and stuff. There is a fine line between the two, you know.

Dan Dierker

FAA Does It Again

THE FEDERAL AVIATION ADMINISTRATION (FAA) has announced another set of proposed rules to regulate air tours over Grand Canyon. Of previous rules proposed by the FAA to fulfill the legislative mandate to substantially restore natural quiet, some have been implemented; others have been watered down or delayed. The result has been a confusing, frustrating and lengthy process that has not reduced the noise impacts associated with the relentlessly growing air tour industry. The National Park Service (NPS) announced that these rules will allow visitors "a greater opportunity to experience natural sounds of the park". However, without vigorous support from the public to enhance the proposed restrictions, benefits would be dubious at best.

The documents released by the FAA include a map of new tour routes, a draft regulation modifying the airspace, and a regulation temporarily freezing the number of commercial air tours over the park.

Restrictions on the number of flights Docket #FAA-99-5927

A previous rule was supposed to cap the number of aircraft allowed to operate over Grand Canyon. However, the FAA "underestimated" the number of aircraft because air tour operators were not complying with the FAA's reporting requirements. The FAA therefore adjusted the "cap" upward, which would allow the number of flights to increase significantly over the next decade. Noise modeling predicted a continued increase in noise levels throughout the park.

The new proposed rule would replace the aircraft limitation with a temporary limit on the number of flights. Each operator would receive an allocation based on their reported operations between May 1, 1997 through April 30, 1998. The total number of reported commercial air tours during that time was 88,000. The cap would be in effect pending implementation of the Comprehensive Noise Management Plan to be developed by the NPS.

This proposed rule has some deficiencies.

- 1: This action is long overdue. The air tour industry has more than doubled over the past decade while the process has dragged on.
- 2: The proposal relies heavily upon the noise management plan. However, preliminary drafts of this plan are insupportable. The NPS has adopted a less stringent standard for noise levels throughout the park, particularly in sensitive areas such as Marble Canyon.

The good news, however, is that finally the FAA has put forth a proposal that could limit growth of the air tour industry over Grand Canyon. For too long, air tours

have enjoyed unbridled growth, while virtually every other form of visitation has been limited in order to protect the resource and visitor experience. We encourage you to express your support for a cap on the number of flights, and for increased protection of natural quiet in Grand Canyon. **Comments must be labeled Docket # FAA-99-5927.**

Modification of Tour Routes Docket #FAA 99-5926

More good and bad news. The good news is that within this proposal the FAA is considering eliminating flights over Havasu, National, and Fern Glen Canyons. The bad news is that the FAA has again proposed a future route through a flight free zone for "noise efficient aircraft". Allowing aircraft to enter a flight free zone defeats the purpose, and will allow aircraft to fly very close to Point Sublime and Point Imperial. Even noise efficient aircraft would generate an unacceptable impact at these sensitive areas. **Comments on this proposal must be labeled Docket # FAA-99-5926.**

Send Comments!

Comments must be received on or before September 7, 1999, and must be labeled with the docket number. They may be sent electronically to 9-NPRM-CMTS@faa.gov. They may also be mailed to:

US Department of Transportation Dockets
Docket # [write correct docket # here]
400 Seventh Street SW, Room Plaza
Washington, DC 20590

Copies of the regulation temporarily freezing the number of commercial air tours are available by contacting the FAA at (202) 267-8321. For a copy of the draft regulation modifying the airspace contact call (202) 267-8783. These documents are also available on the Federal Register's web site at: www.access.gpo.gov/su_docs/aces/aces140.html

Attend a Public Meeting!

August 17, 9A.M.
Cline Library Assembly Hall, NAU, Flagstaff

August 19, 9A.M.
Frank & Estella Beam Hall
University of Nevada
4505 South Maryland Parkway, Las Vegas

For more information or to provide testimony:
Mark Lawyer (202) 493-4531
mark.lawyer@faa.gov

Adopt-a-Beach

ALMOST FOUR YEARS AGO, a few river guides sat around the old GCRG office downtown and created a program that would merge the concepts of “flood flow, long-term monitoring of Grand Canyon beaches and repeat photography by river guides”. Voila! The Adopt-a-Beach program was born. This program monitors the changing condition of a critical recreational resource, facilitates the adaptive management process and dovetails with the other river related studies conducted by Grand Canyon National Park as part of the CRMP process. It is simple, yet incredibly effective.

Since the program's inception in 1996, over seventy-five guides have participated by adopting/photographing beaches in Grand Canyon. That number encompasses guides from all fifteen commercial outfitters, plus free-lance guides, National Park Service personnel, AZ Game & Fish and other independent science trips. It has truly been a cooperative effort and a real testament to the strong feeling of mutual responsibility for stewardship of this resource and the shared commitment to its continued well being.

The Adopt-a-Beach program would not exist without the ongoing support and efforts of the river community as well as the ongoing financial support of the Grand Canyon Conservation Fund; a non-profit grant-making program established by the Grand Canyon river outfitters. Recently, GCRG has also been honored to receive additional funding support from the Grand Canyon Monitoring and Research Center as well as the 1999 Small Research Grants Program administered by Grand

Canyon National Park with funding provided by the Grand Canyon Association. GCRG members have also been extremely generous in helping us along the way with this program. Those individuals are:

Alan Arnold
Ralph Byram
Mari Carlos
Mary Gratton
Ed Jodice
Annie Nelson
Mary Schlott Repenning
Suzanne Young
Amy White & Fred Cropp
Jan Whittlesey

All in all, many, many thanks to those organizations and innumerable individuals who have kept this program going over the past few years. We couldn't do it without all of you.

The 1999 Adopt-a-Beach program is now in full swing with over thirty beaches adopted to date. Our goal is to get full coverage of all beaches included in the study in order to give us the best representation of the state of camping beaches in Grand Canyon. So, get on the boat (so to speak)! Give us a call or stop by the GCRG office and we'll set you up with everything you need. Easy as pie.

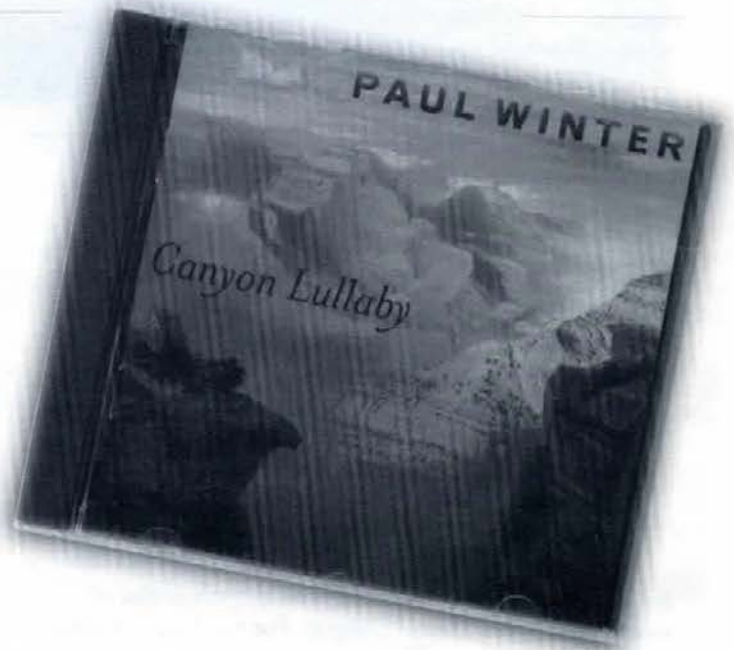
Lynn Hamilton

Paul Winter Needs Sherpas

WOULD YOU LIKE to assist Paul Winter this October in a recording expedition in Glen Canyon? Contact Lynn at the GCRG office for details.

Also, we have these nifty CD's from Paul's last CD recorded in Glen Canyon above Lee's Ferry. This recording captures the magical essence of the place and the soprano sax is accompanied by bird songs, chirping insects and the river itself. It's just like you're there.

You can purchase the CD for \$13 which includes shipping, and all the proceeds go to GCRG. Don't wait too long, Christmas is just around the corner.



Adopt-a-Beach 1999

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



Bruce McElya

Dog Days of Summer

A Boatman's Journal

DAY 4: It's July now: 112° F., gusty upstream winds, not a cloud in the sky. Been on the water since April. Haven't seen my baby. Brain's kind of scrambled from the heat, the wind, the people—other trips are everywhere, LCR was nuts. My people loved it, though. They really got crazy. Is this trip #4 or #5? Everything's kind of running together. Rattlesnake camp is open. Better grab it.

Day 5: Baked in Furnace Flats last night, did the exchange at Phantom Ranch, made it through the big stuff and cleared Crystal intact. Now, where to put my people tonight? Three commercial trips are down in front of us somewhere. Lord knows where the privates are. Gotta make the pad by Sunday. Need to find any old place in this inferno-gorge. Well, maybe Bass Camp? Umm, right!

Day 6: Camped at Garnet. Finally got around to reading my Phantom Ranch mail. My baby left me—she found some other guy. Ah hell! Wonder what I'm going to do when the season's over? No time for tears. 12 years at this job, barely making ends meet, and still don't have a future. Lower back pain doesn't seem to go away and my elbow is acting up again. Can't tell the boss, could get fired for that. Just got to put on a confident, happy face and find us a camp! Stone Creek might be open.

Day 7: Camped at Owl Eyes. Did the Deer Creek boogy with five other trips squashed in there. Heading down stream into the Muav Gorge, it's still early afternoon and we've gotta get one of those nonexistent camps above Havasu Creek. Maybe we can get Last Chance? Yeah, fat chance!

Day 8: Havasu flashed big, barely got everybody out of there in time. Storm broke with waterfalls crashing everywhere. After noon the walls and sky turned utterly glorious in color and light! My people are getting that child-like, exuberant look in their eyes. The water is low and Lava Falls is next. The tension is rising, people look worried. My gut's starting to tighten-up. Vulcan lies in wait. Oh boy.

God, I love this job!

• • •

CAREER OPPORTUNITY: GRAND CANYON RIVER GUIDE

Personal qualities required: M or F, healthy, strong, mature, savvy, coordinated person with excellent judgment, common sense, loyalty, and team-skills. Must enjoy all kinds of people: be patient, tolerant, available, with a high level of endurance through all environmental and social conditions, come what may.

Responsibilities: navigate a boat with 4-20 guests for up to 16 days safely through the largest navigable whitewater in the U.S.. Know 280 miles of river corridor intimately. Effectively negotiate logistics with numerous other trips on the river. Lead hikes in rugged desert terrain, perform advanced wilderness first aid, cook meals, give orientations, interpret natural history, and give counseling as necessary. Be prepared to respond to any emergency at any time of day or night and know evacuation procedures. Do everything necessary to keep people happy and get to the take-out on time. Train new boatmen free of charge, and expect to be replaced by them when you wear-out.

Hours per day: 24

Days per week: 7

Days of work per year: about 50 to 100

Paid holidays: 0

Wages: \$75-\$125 per day, depending on experience.

Benefits: Some, maybe. Great scenery. Good equipment. Little chance for advancement. You may be fired at any time for any reason. Retirement opportunities? Don't ask.

River certifications needed: 2-5 years experience running Grand Canyon. Current GCNP River Guide Card, advanced wilderness first aid card, CPR card, Food Handlers certificate, negative drug tests, excellent resume and references.

Applicants must be prepared to dedicate the best and most productive working years of their lives to advancing the company's profitability and reputation while providing the best possible river experience to guests. New applicants should expect to apprentice the first season or two for little or no pay. Applicants should not expect to have a family or keep a mate, nor expect compensation to keep pace with cost of living increases.

Andre Potochnik

The Good, The Bad and the...

A Yearly Survey

GOOD THINGS GCRG IS DOING

Standing up.
Being a forum for airing issues important to the canyon, river, and boatman.
BQR, oral history, spring training.
Publishing a consistent forum.
Much. BQR. GTS.
Being a river guide is not a job; it is a way of life with certain qualities most people will never get to experience. The love and respect for the Canyon is great... let's protect those qualities and our way of life! We are not getting rich working here but we all are richly rewarded each and every day!
BQR, boatman training seminars, proactive in canyon management issues.
BQR, GTS, trying.
You're awesome. Keep us the great work and dedication.
It's ok that not everyone agrees with you all the time!
BQR, GTS.... What else?
The BQR is absolutely wonderful – it's something to be very proud of.
Being non-profit, supporting/battling/informing on issues (i.e. Tusayan, H2o, and Wilderness status)
Publishing BQR, thinking expansively.
Keeping us informed. Natural history and past river runners.
The BQR and GTS.
Supporting the BQR, great GTS's.
All!
Bringing river guides together.
Garnering guide opinion yet remaining neutral on controversial issues for the membership. Social and educational opportunities (GTS).
BQR/GTS, training trips.
Keeping the community informed.
Everything. But mostly keeping communication going between all those involved.
Bringing great people together who darn better love the Canyon.
GTS trip. BQR.
Good info in newsletter. Great biographies.
Adopt-a-Beach, GTS, Wilderness designation, BQR!!!
Excellent as always.
Keeping the river community informed. Presenting information in a positive manner.
Newsletter A+.
GTS, BQR....Find me a job?!

The GTS land and river sessions are the best and most important thing GCRG offers its members. Steiger's history lessons are a close second.

Being fair and diplomatic in representing the guiding community!!
BQR! Adopt-a-Beach!
GTS. Action alerts. BQR is tops! Truly building a community of boatmen.
Offering multiple perspectives.
GTS, organizing a group of folks, synergy.
Maintaining a vigil on the canyon we all love and on the people.
Keeping a dialog happening about stuff and preventing the bureaucracies from getting out of control.
Promoting beach restoration.
Everything—love the historical recognition and articles in the BQR.
Publishing the BQR and maintaining a broad spectrum of points of view.
Assembling river history, codifying a dialog.
The BQR is the best!
Excellent newsletter, guide services (but there is a need to better publicize these). Exploring the political fringe.
Communicating with boaters of all sorts.
BQR is great. I put it by the jon for guests' reading enjoyment.
BQR! Listening to all views on the big issues and GTS.
Newsletter. Active in issues surrounding the canyon. Not giving support to the draining of Lake Powell (which is a pipe dream and misguided activism).
GTS, oral history, WFR classes and recerts, keeping us up to date on: politics, CRMP, and other canyon concerns. Giving boatmen a voice. Art & poetry.
Re-engaging with outfitters.
Newsletter is the best! Keep it up. Keep encouraging new voices. Do not let a rift open between oars vs. motors.
You guys are great! The newsletter is awesome.
Keeping the spirit of the community and the members of GCRG together in an open, positive format.
History goodies.
Keeping it all going. It's so important. Keep up the great work. Thank you!

MISGUIDED THINGS GCRG IS DOING

Getting kinda stuffy and predictable in an "old man's social club" sort of way. Perhaps your sum is getting to be less than the total of its parts.

Be more careful about falling into the trap of collective bargaining.

Cuddling up to the outfitters. Afraid to take a stand. Do what is right for the place, not the people.

Keep working to get more guide involvement. This will be a constant battle.

Not requiring all companies to provide health insurance, retirement programs and fair wages. We work 0500-2100 and everyday! We are paid for 8 hours. That is an outrage. We are not animals! Idea: find out profits of all companies and publish same in the BQR.

Supporting draining Lake Powell.

Being gutless on two major issues 1) Drug tests—unconstitutional and wrong. We are citizens of the US. And 2) Wilderness and Wild river designation is the best thing!

Letting the jerks bum you out. Don't. You guys are the greatest!

Kowtowing to NPS and outfitters.

Don't get cozy with the NPS. Unionize guides for better strength against outfitters in pay, medical, retirement and profit sharing.

Out of touch with the outfitters and not representing the outfitters in the Adaptive Management process.

Pushing Wilderness when Wild & Scenic status is more appropriate.

GCRG is the only real voice for the Canyon on the Adaptive Management Work Group – be more vocal.

Being too reluctant to take an organization position (i.e. Glen Canyon Dam).

Supporting removal of the Udall Factor.

Nada.

It is extremely difficult for me to criticize GCRG, for the organization and the BQR are important to me. Ideally, fewer BQR pages would be spared of political opinions and/or arguments.

God will take care of Glen Canyon Dam. Let's stick to Adopt-a-Beach and the excellent newsletter & GTS.

Can't think of any. I enjoy the BQR and even enjoy the articles I may not completely agree with.

Our weaknesses as an organization are the same as our weaknesses as individuals – and that's not a bad thing.

Overall, I think you're doing a great job. Anyone's opinions can differ on details so lets not even go there.

Good job.

It's all good!

Change the name of the newsletter from Boatmen's Quarterly; a sexist name. Even if current female guides don't have any issue with this name, what about the next generation? This just perpetuates an attitude.

Provincial viewpoint.

Pandering to the radical agendas of some stakeholders who seek to curtail commercial use in Grand Canyon.

While balance on the key issues (e.g. wilderness, waiting list, etc...), it can easily become paralysis. I would like to see forceful leadership on the heinous helicopter invasion; at least requiring noise reduction and less impacting routes, etc....

Not getting real—by failing to seek funds to hire staff.

Condoning the current commercial/private trip user-day ratios.

Wilderness.

Stop slamming short motor trips. Folks leave with a lasting impression even if the boatmen leave fried.

Stance on private trips. Very poor stance.

Back off the river corridor wilderness designation. Better stay neutral on that one.

Not working harder to get more guides on board. Give 'em an issue or two of the newsletter free to entice them.

THINGS GCRG SHOULD BE DOING

More statistics in the BQR – formatted and updated each year.

Get tough on greed of outfitters. Stand up for reasonable cost for ordinary people to go on commercial trips.

Not worrying about what people think. You do a great job and you're very needed.

BQR. It's fantastic. More poetry please.

Not worrying too much about what the outfitters or NPS think. Go with your hearts.

Get solidly in the fight to stop Grand Canyon overflights.

Remember the roots. The true guide professional and their issues.

Promoting more dialogue between boatmen and owners.

Continue to encourage research & writing about legends.

Push for Wild & Scenic status. Improve dialogue with the outfitters. More vocal presence on the Adaptive Management Work Group.

Like Kenton said, "Time to stir things up again."

Keep a list of upcoming private trips that want more participants or boatmen.

Opposing Wilderness. Maintaining credibility by not supporting the draining of Lake Powell. Supporting guides forming consensus with outfitters when possible and keeping up the fantastic work! Printing at least black and white photos of candidates running (who are some of those guys?). It would make voting easier.

Protecting the Grand Canyon and thinking about its future.

Not worry about giant corporations who own outfits now.

They all sell for big money and leave! The future preservation of the River and her Canyon come

before any corporations wishes! Whatever it takes to protect her....

More programs to help guides prepare for life outside the Canyon.

Keep motorized boats in Grand Canyon.

Keep up the open forum and unbiased stance on user issues and wilderness opinions.

Keeping the guide profession and Grand Canyon as priorities.

Work towards diffusing the rift between the public (commercial) and private (a.k.a. the "waiting list") interests in the Grand Canyon. Using truth, logic and reason as tools.

"Job Bank" (yeah, right)

More stories, more history.... Stories, stories, stories....

Involve/ask for younger guides to input opinions.

Develop, promote and/or direct a guide education program.

Direct political advocacy—remove Glen Canyon Dam and designate wilderness as well as guide communication/dialogue. Meeting in places other than Flagstaff. Better publicizing guide services and facilitating guide inter-communication.

Class action vs. Park regarding drug testing. Grounds are unreasonable search and seizure; innocent until proven guilty.

More discussion about ways to get folks down the river that don't have the bucks for commercial trips. Also education.

Be more proactive in supporting commercial boating as a majority user in Grand Canyon.

Reminding folks that as long as the private wait list is, there are a number of repeat floaters in the private arena!

Keeping an eye on the power managers in regards to flows.

Somehow figure a way out to speed up the geologic time scale, when all the problems will go away!

Trying to find more ways to lessen the total impact. We spend an awful lot of time on the politics.

Actively pursuing better job security for boat folks.

Comparing wages again.

Don't want wilderness designation in Grand Canyon.

Oppose mandatory drug testing.

Fostering a better relationship with private boaters and their organization.

Getting a majority of guides to join.

Working with GCPBA on the "waiting list problem".

Whatever happened to the Michael Jacobs Award thing?

Continue dialogue with outfitters about taking care of their most vital resource while providing the benefits we deserve to have.

Keep the GTS trip alive!

BETTER WAYS FOR YOU TO BE INVOLVED IN GCRG

Maybe a couple of big open house outdoor parties in various plateau cities – with the board and officers present.

Write an article or two... maybe try my hand at some poetry and submit it to the BQR.

Just keep me informed and provide a means of feedback.

Maybe email lists of volunteer work available to do.

Attend meetings. Help develop agenda issues such as flooding.

Write a story.

That is difficult to figure out because every member has a different approach to being "involved". Writing letters or mail-in questionnaires is easiest for me.

I think it would be easier to be more involved if I lived in Flagstaff.

Update the website more often. Send out updates on email.

That's a hard one because I feel like I already can't keep up with my own life, but I'll think on that one.

Marry one.

Live closer to Flag (but I like it where I live so I'll let you guys and gals keep up the good work).

Just want you to know that I really appreciate the effort you all go to in keep us informed. I'm on the perimeter these days, but value the education you provide, inspiration and sense of community.

Have a meeting in Salt Lake City. Move the meetings around. You guys in Flag like to travel—let's act like it. What's the next metropolitan area with the largest GCRG representation?

Attend GTS and Fall meetings.

Fall meetings are too late in the season. Spring sessions are too early.

E-mail! Current events can be updated easily.

I should move to Arizona. If only I could get a job!

El Condor Pasa

A BIT OF HISTORY was made in early May, with the launch of the first Adaptive Management Work Group river trip through Grand Canyon. The AMWG is the Federal Advisory Committee to the Secretary of the Interior that advises him on how to operate the dam for the benefit of natural and cultural river resources. It is composed of representatives from the states, tribes, public interest groups, and agencies who have concerns for how the dam is operated. I represent the recreational river runner community on that committee. Our purposes were to become better acquainted with one another's concerns, learn first-hand about the river resources, and develop a vision/mission statement for the program.

I believe that all three purposes were accomplished. It was no small task to orchestrate 36 people on four motor rigs for eight days, and learn all of the things we did. Much credit goes to the Grand Canyon Monitoring and Research Center staff for a tremendous organizational and educational effort. Just as much credit goes to the crew; Kirk Burnett, Brian Dierker, Duffy McCabe, Lars Niemi, and Jen Kunde for getting us down the river in style.

After a dam tour and talks on the reservoir, dam, and power generation, we launched into the "great unknown". With such a diverse group, political and bureaucratic posturing might have dominated the trip. But the canyon wove its magic, and something very different happened.

For me, the trip's defining moment happened just before we shoved off from our first camp at North Canyon. Tim Begay of the Navajo Nation had us all lined-up, standing quietly with hands clasped along the

river front. In the exquisite early morning light of Marble Canyon, while he sang tribal verse and made offerings for our safe passage, two ravens glided down to the boulder pile in front of us, followed by a giant condor! We all stood there, quietly awestruck, watching these great birds jump and squawk and spread their wings in their own peculiar way. That was when people began to realize that there was more to this whole thing than kilowatts, acre-feet, and bureaucratic agendas. It went on from there.

All participants contributed to the trip in a variety of ways. But we were particularly honored by the spiritual guidance of our Native American colleagues; Arden Kucate (Pueblo of Zuni), Tim Begay (Navajo Nation), Brenda Drye (Southern Paiute Consortium), Cisney Havatone (Hualapai Tribe), and Gene Kuwanqaftewa (Hopi Tribe) who took turns leading us in a prayer-offering each morning. I think that we all gained a profound appreciation for their deep cultural connection to the Grand Canyon as well as their light and gentle sense of humor.

It was through a sense of connection with the place that our scientific education and aesthetic experiences took on even greater meaning. We worked hard to write a vision and mission statement over the last four days, which everyone seemed to be fine with at the end. During the eight river days, people relaxed and soaked it all in, the walls, the light, the sounds. People were smiling at the end, and grateful for the opportunity to live and breathe the air of the grandest of earth cathedrals—it was a superb trip by any measure.

Andre Potochnik

Participants:

Scott Loveless Office of the Solicitor General
Chip Groat U.S. Geological Survey, Director
Nancy Hornewer U.S. Geological Survey
Robert King Utah Division of Water Resources
Rick Johnson Grand Canyon Trust
Cisney Havatone Hualapai Tribe
Charley Calhoun Bureau of Reclamation
Randy Peterson Bureau of Reclamation
Dave Cohen Trout Unlimited
Tim Begay Navajo Nation
Brenda Drye Southern Paiute Consortium
Fred Worthley Arizona Dept. of Water Resources
Amy Heuslein Bureau of Indian Affairs
Leslie James Colorado River Energy Distributors Assoc.
Arden Kucate Pueblo of Zuni
Gene Kuwanqaftewa Hopi Tribe
Mary Orton American Rivers

Phillip Lehr Colorado River Commission of Nevada
Steve Parry U.S. Fish and Wildlife Service
Steve Magnussen Bureau of Reclamation, Secretary's designee
Andre Potochnik Grand Canyon River Guides, Inc.
Ted Rampton Utah Associated Municipal Power Systems
Dave Sabo Western Area Power Administration
Bill Persons Arizona Game and Fish Department
Norman Gaume New Mexico Interstate Stream Commission
Gerald Zimmerman Colorado River Board of California
David Hayes Deputy Secretary of the Interior
Mark Schaefer Deputy Assistant Secretary of the Interior
Barry Gold Acting Chief, GCMRC
Ted Melis GCMRC, Physical Science Program
Ruth Lambert GCMRC, Cultural Program
Larry Stevens GCMRC, Research Biologist
Barb Ralston GCMRC, Biological Program
Mike Liszewski GCMRC, Information Technology Program

Grand Canyon Supergroup

Geologic Follow-Up to Part 1– Winter 1998-99 BQR

Along the shore of Chuar beach

IT IS HARD to imagine that had you been hiking in the Chuar Valley in the Late Precambrian, warm incoming tide waters would have lapped up against your ankles. Yet, this is the vision that we are left with after scratching our heads about the Chuar Group. It was mentioned in the last BQR article on the Grand Canyon Supergroup (Timmons and others, Volume 12, No. 1, Winter 1998–1999) that these beautiful Chuar Group rocks represent a marine environment—yet other geologists have interpreted them otherwise. Why do we think the Chuar Group is marine and what features in the rock tell us there was an ocean here at this time? Furthermore, what does this 1600 meters (5248 feet) of strata tell us in terms of time, life, climate, and tectonics? We have learned from Mike Timmons and others that Chuar Group sediment was recording the incipient breakup of the supercontinent Rodinia. From looking at the sedimentary rocks and the fossils encased therein in great detail, what is now beginning to unfold is a picture of Chuar beach; linked to the greater ocean, and supporting a diverse and cosmopolitan assemblage of simple organisms. Looking even closer at these rocks (on an elemental scale and isotopic scale) we are finding that the geochemistry of the world ocean fluctuated during Chuar time and may be telling us of ancient glacial episodes.

It is always good to remember, not only *what* it is we as scientists are doing (especially in the delicate Grand Canyon), but also *why* we are doing it and *how* we go about it. The Chuar Group is an example of how the Grand Canyon is indeed one of the world's best geologic laboratories and it continues to yield new insights that can change the way we understand our planet. The Chuar Group is unique because it is exposed nowhere else in the world and it is well exposed indeed! These rocks record a time in Earth history rarely preserved in the rock record, particularly in the western U.S.. Furthermore, the preservation of the Chuar Group is remarkable for its age: it is unmetamorphosed and only very mildly deformed by movement on the Butte fault. Just as in the **Phanerozoic strata** above the Great Unconformity, the Chuar Group is like a book: it holds a record of what was going on in the world at this time (the **Neoproterozoic**). Within this record are **sedimentological, stratigraphic, geochemical** and fossil clues that allow us to hypothesize about processes of sedimentation, tectonism, life, and climate. Lastly, the Chuar Group may help us to explain the big changes from the **Precambrian** world to the Phanerozoic one (e.g.; evolution of life, atmosphere, ocean, and tectonics). All of these

characteristics make the Chuar Group an extremely important succession of rocks that could become considered a world-class “**type section**” for this time period. The following text is a summary of the more telltale details that we have come across in the Chuar rocks. By the way, the highlighted words are linked to a glossary, in the case that you do not understand some of this geo- or bio-lingo.

Charles D. Walcott was the first to study the stratigraphy and paleontology of the Chuar Group, in the 1880s and 90s. He described the Chuar “terrane”, discovered and named the microfossil *Chuarina circularis*, and noted the presence of **stromatolites** (Walcott, 1894, 1899). A more recent comprehensive study of the Chuar Group was conducted in the late 1960's and early 1970's (Ford and Breed, 1973a and references therein) and these studies yielded information on the general stratigraphic, sedimentologic, and paleontologic characteristics; however, environmental interpretations were ambiguous or lacking. Subsequent studies have resulted in a range of **paleoenvironmental** interpretations of all or part of the Chuar Group; including shallow marine, coastal plain, alluvial plain, fluvial (river), and lacustrine (lake) (e.g., Reynolds, et al., 1988; Cook, 1991; Ford and Dehler, in press). Our ongoing work is focussed on the details of the Chuar Group: to try and settle the debate about paleoenvironments and to glean new information about Neoproterozoic Earth history.

This next step in understanding the Chuar Group has involved looking at this vast thickness of rocks up close and personal. Unfortunately, in most cases, these rocks are shy and don't want to let you get to know them. By spending significant amounts of time with them, though, it seems as if they are beginning to open up to us. Within these sedimentary rocks, we look for two main types of features: **sedimentary structures** and fossils. The sedimentary structures tell us something about sedimentary process (what was moving the sediments—wind, water, gravity, or ice) and the fossils tell us something about paleobiology, and combined these things tell us about paleoecology and paleoenvironments.

Why not “Lake” Chuar?

Sedimentary structures are found throughout the Chuar sequence, yet are best preserved and most abundant in the middle part of the Chuar Group: the upper Carbon Canyon Member, the Carbon Butte Member, and the lower Awatubi Member (see Fig. 1). One of the most informative and common sedimentary features are ripplemarks, preserved on bedding-plane exposures, that are symmetrical by nature. These are common features

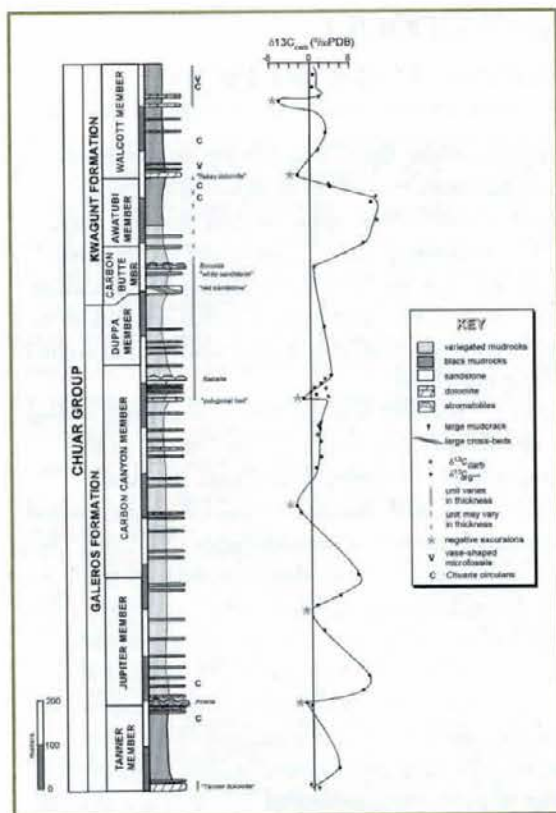


Figure 1. Stratigraphic column of the Chuar Group and preliminary carbon curve. The higher magnitude negative excursions match similar excursions found in other Neoproterozoic sedimentary rocks around the world. These excursions are sometimes found associated with ancient glacial deposits (tillites), but this is not the case with the Chuar Group. By association, the Chuar Group excursions may also represent glaciation events. The new 742 Ma date comes from a tuff in the uppermost Walcott Member.

to see on the faces of dipping beds along the Butte fault, especially between Carbon and Lava Chuar Canyons. The shape of these ripplemarks requires even flow of water in opposite directions to maintain this symmetry. Therefore, we know these sediments (silt and sand) were being pushed around in an oscillatory current within a wave zone. Waves can form in lakes, oceans, and even rivers, so, these features alone do not help us to pinpoint a paleoenvironment. Interestingly though, these ripplemarks are draped with mud that exhibit mudcracks. These mudcracks require a wet environment to deposit the mud and a dry one to dry out and crack the mud. We have observed many cycles of mud-draped and mud-cracked ripplemarks stacked on top of each other. The most likely sequence of events to create these cycles and suite of features is in a wave and tidal regime along an ocean shoreline (see Fig. 2). As the tide comes in, the sand or silt becomes rippled in the oscillatory flow. When

the tide turns around at high tide (flood tide), the fine mud settles out and armors the newly rippled sand and silt. Then the tide goes out and when low tide is reached (ebb tide), these armored ripplemarks are exposed above the waterline, become dry and crack. Then the cycle repeats itself. Whether the tide fluctuated once or twice a day is not known, but was likely the latter (we are still searching for tidal features to tell us this).

In the Carbon Butte Member (a big red cliff of sandstone marks the base) are a suite of sedimentary features that also suggest a tidal- and wave-influenced environment. We have found **crossbedding** in the sandstone, which indicates that there were small underwater dunes being influenced by a fairly strong current moving in opposite directions (suggesting tidal currents). Associated with these small crossbeds are very large, very low-angle crossbeds that you can trace for at least a half of a mile. These are most likely the sides of shifting tidal channels or they were large underwater sand dunes. The Carbon Butte Member also hosts soft sediment deformation features, indicative of either very fast deposition and/or seismic shaking. The best place to see these features is up Kwagunt Canyon, either right along the Butte fault or up west of the Butte fault where Kwagunt Creek flows right over the lower cliff-forming red sandstone.

Stromatolites are a small yet consistent part of the Chuar Group stratigraphy. There are 6 different types of stromatolites (see Ford and Breed, 1973a and Cook, 1991), some being more recognizable and accessible than others. Probably the best known of the stromatolites is *Boxonia*, a specimen which looks like a giant brain (see Fig. 3) and can most easily be seen near the Butte fault in Carbon Canyon (this specimen has tumbled down from Carbon Butte to the north). You can think of these spectacular "brains" as microbial reefs or mounds. Had you been snorkeling in this Precambrian sea, you may have scraped your belly on one of these bad boys. What the "brains" and other stromatolites tell us about paleoenvironment is that the water level had to be at least

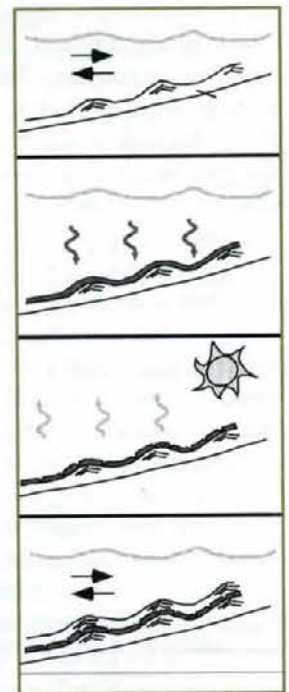


Figure 2. Explanation of how mud-draped and mud-cracked symmetrical ripplemarks form by tidal processes. These features suggest that Chuar sediments were deposited in an ocean basin (as opposed to a lake).



Figure 3. Photograph of the stromatolite, *Boxonia* a.k.a. the "brains", Kwagunt Canyon. If you had been snorkeling in this Precambrian sea, you might have scraped your belly on this microbial mound (now dolomite). Leif Karlstrom for scale.

as deep as the height of a mound. Therefore, this "loose brain" in Carbon Canyon, being about 2 meters (3.6 ft) tall, tells us that the water depth had to be at least 2 meters deep. Another environmental condition required by stromatolites is that they remain in the light so that photosynthesizing microbes can do their thing. This also requires that the water not be too cloudy with sediment. The fact that this and some of the other stromatolite types have been found in *marine* deposits of Proterozoic age worldwide suggests, but does not confirm, a marine origin for Chuar Group stromatolites. Another good place to see the "brains" is on the hike up to Nankoweap Butte (They are better exposed on the Kwagunt side.).

While you are in Kwagunt Canyon, walk north up the Butte fault until the creek splits and then tool around on the slope facing the Butte fault. Here you will find *Bacalia*, a rather "Dr. Suessish" stromatolite typically less than .5 meters in any dimension, and below this, a dolomite bed that contains very strange features that we interpret as large mudcracks (see Fig. 4). These strange cracks, arranged in polygonal shapes in bedding-plane view, likely represent a time when sea level was lowered and this part of the land was exposed for a long duration.

It's funny, but the domineering and colorful shales in the Chuar Group don't tell us much of anything when looking at them "in the field". We have learned that the beautiful Martian colors you see on Chuar hillsides are mostly created by post-depositional processes (i.e.; color typically is not diagnostic of paleoenvironment). By looking closely at these shales back in the lab, however, we may find geochemical trends indicating things such as unconformities, burial depth, and changes in Chuar water chemistry through time.

Well, why not "Lake" Chuar? From sedimentary structures we deduce that the Chuar Group sediments



Figure 4. Photograph of a strange feature in a dolomite bed currently interpreted as a large mudcrack (possibly modified by seismic shaking), Kwagunt Canyon. If our interpretation is correct, this dolomite bed represents a sea level fall followed by a long duration of exposure above sea level (i.e.; regression of the sea followed by a lowstand).

were under the influence of tides and waves. Tides, especially ones large enough to leave their mark in the rock record, are a process inherent to the ocean and not to lakes. Therefore, the tidal features found throughout the Chuar Group allow us to interpret deposition in a marine setting (see Fig. 5). In addition, stromatolites (and microfossils) in the Chuar Group can be matched to stromatolites (and microfossils) found in Neoproterozoic *marine* deposits elsewhere in the world.

Life in Chuar waters

Although there were no animals or land plants during Chuar time, the earth was not barren. Oceans teemed with life—many **eukaryotic** lineages had diversified by Chuar time (about 750-800 Ma—see below), and **bacteria** had been around for at least 2.5 billion years, indicating that life was here on Earth nearly since the beginning (4.6 Ga). The Chuar Group provides us with an exceptional window on the diversity of life and the dynamics of ecosystems during this time just prior to the poorly understood "Cambrian Explosion". Both bacteria

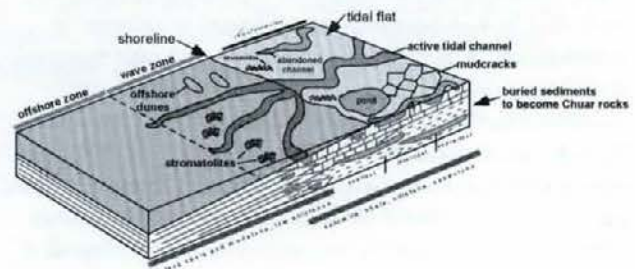


Figure 5. Our visualization of a "slice" of Chuar beach. This "depositional model" best represents the middle Chuar Group, which has the greatest diversity of rock type.

and eukaryotes are well-represented in its sedimentary record.

In the shallow, high energy, warm water environments of the Chuar Group (represented by dolomites), bacteria probably related to cyanobacteria grew on the surfaces of dolomite grains. They are preserved at a number of horizons in the Walcott Member (see Fig. 1; Schopf et al., 1973). As mentioned earlier, also growing in shallow, lower energy waters were stromatolites. These are formed by mats of microorganisms, mostly cyanobacteria, which, as they grow, trap and bind grains or promote localized carbonate (limestone and/or dolomite) precipitation, thus causing the stromatolite to be laminated in cross section. If you look closely at the dolomite layers throughout the Chuar Group, you should find this wide variety of stromatolites in all but the Carbon Butte and Duppa Members (Fig. 1). Modern examples can be found in Shark Bay, Western Australia, in the Gulf of California, off Baja Peninsula, and off Lee Stocking Island in the Bahamas.

A diversity of algae also lived in Chuar waters. They are represented in Chuar Group shales by acritarchs, i.e., organic-walled microfossils of unknown taxonomic affinity, the majority of which are probably algal cysts. Many algae form cysts — a dormant stage in their life cycle — when they are exposed to stressful conditions, such as a lack of nutrients, or a change in salinity or temperature. The cyst wall is made of resistant material, and thus is commonly the only stage of the life cycle preserved in the fossil record. Chuar Group acritarchs include the megascopic *Chuaria circularis* (Fig. 6a), a flattened, carbonaceous disc, 0.4 to 5 mm in diameter found on the bedding planes of shales throughout the Chuar Group. Although earlier interpreted as a brachiopod, a snail, a foraminifer, and a trilobite egg, *C. circularis* is now thought to be a smooth, spherical algal cyst (Ford and Breed, 1973b and references therein). It has been found in Neoproterozoic marine rocks all over the world.



Figure 6a) A scanning electron image of *Chuaria circularis* preserved as a flattened carbonaceous disc on a bedding plane of shale. Note wrinkles due to flattening. White bar equals .5 mm;

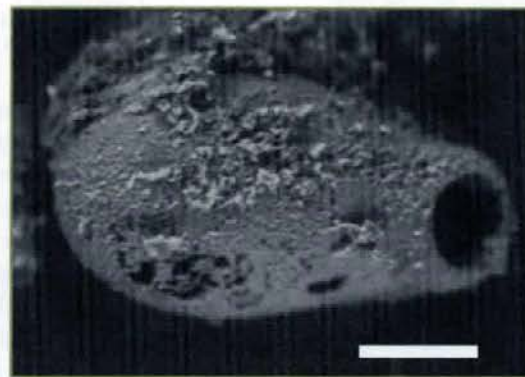


Figure 6b) A scanning electron image of a vase-shaped microfossil, or *Melanocyrrillium*, interpreted to be related to testate amoebae. Note the circular aperture, or opening, in the test, from which the organism would have extended its pseudopodia. White bar equals 0.02 mm.

The ecosystem that inhabited Chuar Group waters consisted not only of algae and bacteria, but included single-celled predators, or protozoa, as well. Evidence for this comes from 'vase-shaped microfossils' (*Melanocyrrillium* Bloeser, 1985), which represent the tests of testate or 'shelled' amoebae (Fig. 6b). Most modern testate amoebae live in freshwater or moist terrestrial environments, although some inhabit marine environments, living at the sediment-water interface. They eat bacteria, algae, other protozoa, fungi, and even (very small!) animals, by engulfing them with their pseudopodia (finger-like extensions of the cell). By analogy with their modern counterparts, Neoproterozoic testate amoebae probably lived on the sea floor, and ate any or all of the organisms in Chuar waters — algae, bacteria, and even other amoebae. These testate amoebae represent the earliest evidence for protozoa in the fossil record, and therefore also provide evidence for a relatively complex ecosystem — one that contains predators as well as primary producers.

Climate during Chuar time

Geochemical signatures in sedimentary rocks are the record of chemical changes that occurred during deposition of the sediments. These geochemical imprints can be indicators of fundamental changes on Earth such as climate fluctuations and life cycles (e.g.; glaciations and extinction events). Although many geochemical impressions in Precambrian rocks have been obscured by metamorphism, the Chuar Group is unmetamorphosed and hence, holds a record of what the water chemistry was like during deposition of Chuar sediments. For example, the amount of the element carbon, found in the black shales and dolomites of the Chuar Group, has not changed since it was buried so long ago. By looking at the ratio between the two stable isotopes of this carbon (^{12}C , the lighter one, and ^{13}C , the heavier one), we have found (with the help of Dave Des Marais at NASA and Zachary Sharp at UNM) that the ^{13}C -to- ^{12}C ratio has fluctuated significantly throughout Chuar time (Fig. 1). Based

on the hypothesis that the Chuar Group is a marine succession, these fluctuations in carbon-isotope ratios through time (carbon curve) can be used as an approximation for the carbon cycle (linked to life and atmosphere) of the Neoproterozoic ocean!

Many geologists have recognized Precambrian glacial deposits (tillite) (e.g.: Harland 1964). Oddly enough, it has been demonstrated that many of these tillites were originally deposited in low latitudes. This combination of tillites and low latitudes has instigated an array of hypotheses to explain how glaciers could form in equatorial regions (see Hoffman 1998a for a review of these hypotheses). Currently, the most published hypothesis is the "Snowball Earth" hypothesis (original Harland, 1964; extended Kirschvink, 1992; revived Hoffman, 1998a) which suggests that the Earth's oceans were completely frozen over for possibly up to 10 million years at a time. During these oceanic deep freezes, the ocean was cut off from the atmosphere (i.e.; oxygen supply) causing many of the organisms on the planet to die off.

Coupled with these Precambrian tillites in the rock record are anomalously large variabilities in carbon-isotope ratios ("excursions"). Some Precambrian sedimentary sequences lack tillites yet show these carbon excursions and are interpreted to also be recording glaciations. We are finding the Chuar Group has several of these (large) excursions (Fig. 1)! We also know from **paleomagnetic** data that the Chuar Group was deposited at near-equatorial paleolatitudes. This information has several implications: 1) the Chuar Group was deposited near the equator during a time of fluctuating climate associated with glaciations; and 2) we can match the Chuar Group to other Neoproterozoic sequences with these same carbon excursions to piece together a global history of climate and life (and whatever else is controlling this curve—tectonics?); and 3) we can use the Chuar Group to learn more about the "Snowball Earth" hypothesis.

Does the Chuar Group record a "Snowball Earth" scenario? This is hard to say. What we can say is that the Chuar Group likely records global climate changes. What will be exciting is to combine detailed paleontology with these excursions to see if we can find extinction events. This would be consistent with a "Snowball Earth" hypothesis.

What time is it anyway... How old is the Chuar Group?

There are two ways to determine geologic time; relatively and absolutely. Relative age determination involves recognizing the ordering of geologic events. For example, the dark green dike (igneous-intrusion) at Hance Rapids crosscuts the Hakatai Shale, therefore the shale had to be there first (the shale is older than the intruding dike). We know from absolute age determination, based on radioactive elements decaying at constant

rates, that the Hance dike is about 1.1 Ga. There are no intrusions (e.g.; dikes) in the Chuar Group, so we cannot use these techniques, yet these intrusions below in the Unkar Group tell us that the Chuar Group is at least younger than 1.1 Ga (a maximum age). But even better, there are a few bright white beds found in the Chuar Group that appear to be volcanic ashes (tuffs). One of these at the very top of the Chuar Group (Walcott Member at Nankoweap Butte), has been recently dated by Sam Bowring at MIT and yielded a U-Pb date of ~742 Ma. This is the first direct age on the Chuar Group! Fossil data and the new carbon curve are consistent with this date. Now we can combine the age (of the top of the Chuar Group) with this fossil information and the carbon curve to visualize what the Chuar world was like, and when. With all of this data, we can really do some high-resolution correlation with other Neoproterozoic successions that have absolute ages, carbon curves, and fossil data. This will give us a keener view of the greater Neoproterozoic (~742 Ma) world.

Reflections

Next time you're hiking in the Chuar Valley, think of it as taking a stroll along an ancient equatorial shoreline. You'll be sharing the environment with small photosynthesizers and Earth's first predators, and enjoying the lapping tides and mellow surf. Imagine glaciers at the poles and, at times, glaciers closer by. You might even feel a tremor as the Butte fault makes room for more Chuar sediment. If you look at your watch, the time is ~750 Ma.

Enjoy your beach walk!

Carol Dehler
Susannah Porter
Karl Karlstrom

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Glossary of geological and biological terms

- algae**: photosynthetic eukaryotes.
- amoebae**: a microscopic, single-celled eukaryote consisting of a naked blob of protoplasm that can change in shape as it moves and eats
- bacteria**: the group of organisms which do not possess a membrane-bound nucleus (a.k.a. prokaryotes). They are single-celled, live virtually everywhere, and some kinds give us nasty colds and diseases. One of the big players in stromatolites, especially cyanobacteria.
- brachiopod**: a kind of bivalved animal which possesses a lophophore—a folded, often horseshoe-shaped feeding structure that encircles the mouth and bears ciliated tentacles. Despite the common possession of a bivalved shell, brachiopods are unrelated to clams and their relatives.

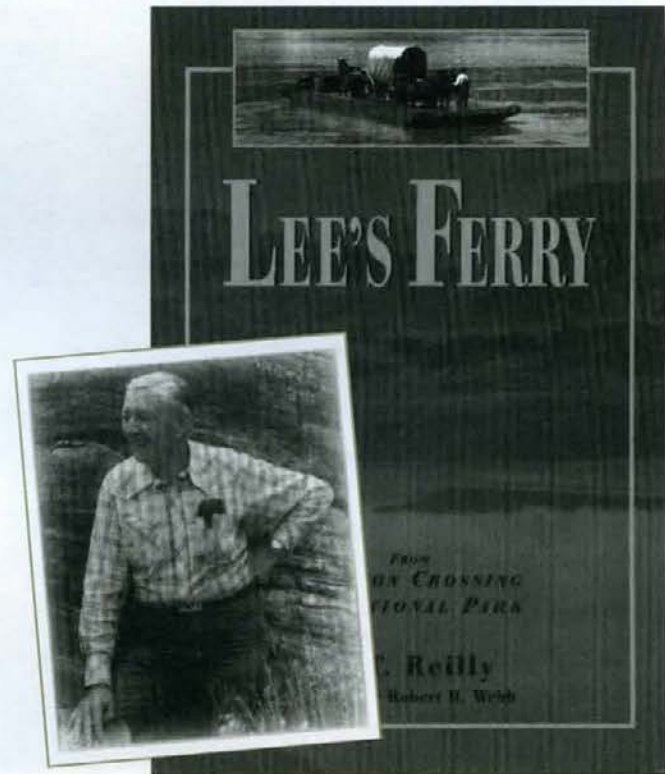
- crossbedding**: a type of sedimentary structure where angled, planar to concave-up features in the rock represent the ancient face of a migrating dune (subaqueous or subaerial) or the side of a migrating channel
- dolomite**: magnesium-rich limestone ($(Ca, Mg)_2 (CO_3)$)
- eukaryote**: a group of organisms which possess a membrane-bound nucleus. The group encompasses all life (amoebae, algae, fungi, plants, and animals) with the exception of the bacteria.
- foraminifer**: a group of single-celled eukaryotes that secrete distinctive, chambered calcium carbonate shells or 'tests'.
- geochemistry/geochemical**: the chemical nature of natural processes and results occurring on Earth and beyond
- Neoproterozoic**: geologic time period between 1000 and 545 million years ago, the latest subdivision of the Precambrian
- paleoenvironmental**: ancient environment such as a shoreline, lake, or river
- paleomagnetic**: pertaining to a past intensity and direction of the Earth's magnetic field
- Phanerozoic**: geologic time period between 544 million years ago and present
- Precambrian**: the geologic time period between 4.6 billion years ago and 544 million years ago
- primary producers**: organisms capable of making organic carbon compounds by fixing CO_2
- protozoa**: (typically) one-celled, non-photosynthetic eukaryotes that generally lack a cell wall
- sedimentary structures**: features in sediment/sedimentary rock made by processes such as wind, water, gravity, ice, or biota.
- sedimentological**: the nature of sediments/sedimentary rock
- stable isotopes**: certain elements, such as carbon, have varying numbers of neutrons in their nuclei. ^{12}C (6 neutrons) and ^{13}C (7 neutrons) are two different stable isotopes of carbon. They do not radioactively decay like ^{14}C (8 neutrons), another isotope of carbon—yet an unstable one.
- strata/stratigraphic**: layered rock/the nature of layered rock
- stromatolites**: distinctively laminated rocks formed in association with microbial mats (Walcott, 1899)
- taxonomic**: pertaining to the classification of organisms on the basis of the evolutionary relationships.
- tectonics**: referring to the large-scale structural elements of a region and the processes by which they formed (e.g; deformation from differential stresses due to plate motion)
- trilobite**: a group of animals, related to crustaceans, insects, and spiders, that was diverse and abundant during the Early Paleozoic (544 Ma+) and became extinct at the Permo-Triassic boundary (~225 Ma)
- type section**: the most continuous and well-preserved succession of rocks representative of a particular time period in the area where those rocks are found.

P.T. on L.F.

IN CELEBRATION of the publication of P.T. Reilly's long-awaited *Lee's Ferry: From Mormon Crossing to National Park*, a book sale, book signing, and media presentations will occur in Northern Arizona University's Cline Library Assembly Hall, Flagstaff, Arizona, on Saturday afternoon, August 28, 1999, sometime in the 1 p.m. to 5 p.m. time range.

The NAU Bookstore will have copies for sale, and books may also be ordered from Dan and Diane Cassidy, Five Quail Books-West, and Bill Bishop, Canyon Books. Presentations will be by Editor Robert H. Webb, Contributor Richard D. Quartaroli, Cline Library Special Collections and Archives Department Head Karen J. Underhill, and possible others. Special guests will also be in attendance.

Cline Library Special Collections and Archives holds the P.T. Reilly collections of research manuscript materials, photographs, and oral histories. All the manuscript material, except for that of Lee's Ferry which is now being processed, is available for reading or research, as are the oral history interviews. The photographs are currently being processed and will be available in the near future in the department or online at <http://www.nau.edu/library/speccoll/imagedb.html>.

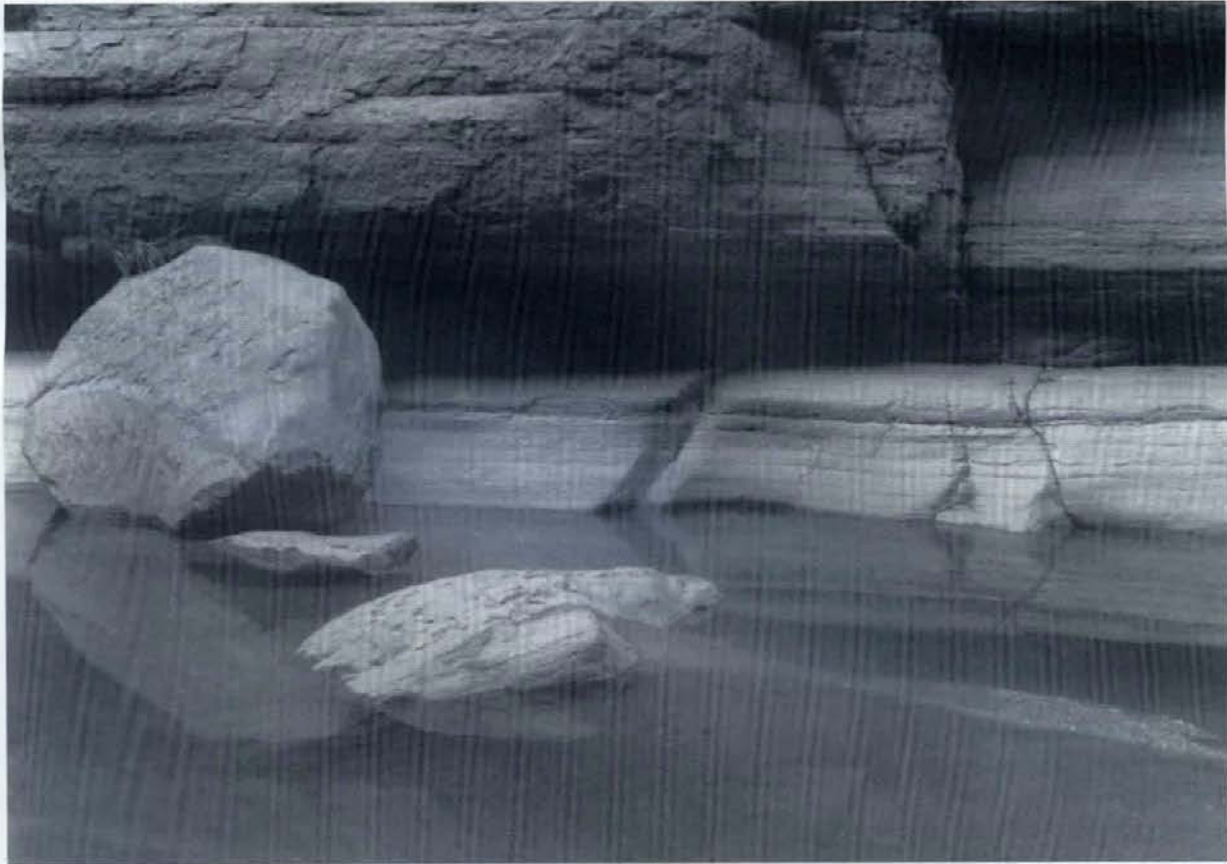


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THANKS to all you poets, photographers, writers, artists, and to all of you who send us stuff. Don't ever stop. Special thanks to the Brown Foundation for their generous and much appreciated support of this publication. Printed on recycled paper with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

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Marie's Bad Week

WE MOVED ON thus till January 29th, when we came to the greatest fall in the river—put down in government reports as eighty feet in one-third of a mile. Over the upper end of this rapid we let all three boats down by lines in safety, but as we started to repeat this for a further distance, the *Marie* was caught by a cross current, swept in against the rock, turned half on her side, filled with water and was jammed tight between two sunken boulders.

With a line tied around their waists and two men holding it on shore, first one man and then another (for the water is so cold one can stay in it but a few minutes) went out upon the boat, waist-deep in the rushing waters, and with grappling-hook and line secured nearly all the load of provisions, blankets, etc. Only two sacks of provisions were swept away by the current. But the boat, though we worked hard at her till dark, we gave up as lost, and lay down to sleep, if possible, literally upon the sharp edges of the broken granite rocks.

That night the river rose two feet and lifted the boat loose, so that early the next morning by a little hard work we got her out. But such a boat! One side half gone, and the other smashed in, yet her keel not broken. We pulled her upon the rocks and at once set to work. We cut four feet out of her centre, drew the two ends together, and with five days hard work we had a new boat. In those five days we were not a moment without the awful roar of that mighty torrent in our ears, with hardly wood enough to cook our meals (the last two days cooking done with the shavings from the broken boat) and the ever-returning question which boat would go next?



Rebuilding the Marie in the Granite Gorge, Grand Cañon

[Two days later, at Horn Creek, after a nearly disastrous lining of the *Bonnie Jean*] ...we adopted Major Powell's plan in such cases, of shooting the boat through and catching it below.

The *Marie*, the rebuilt boat, was started first. She rode gracefully the high waves at the head of the rapid, but in the middle she turned, partially filled with water, shot to one side, struck against the cliff, sank in the worst part of the rapid, and came up in pieces about the size of tooth-picks—our five days' labor and our boat gone together!

Robert Brewster Stanton

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