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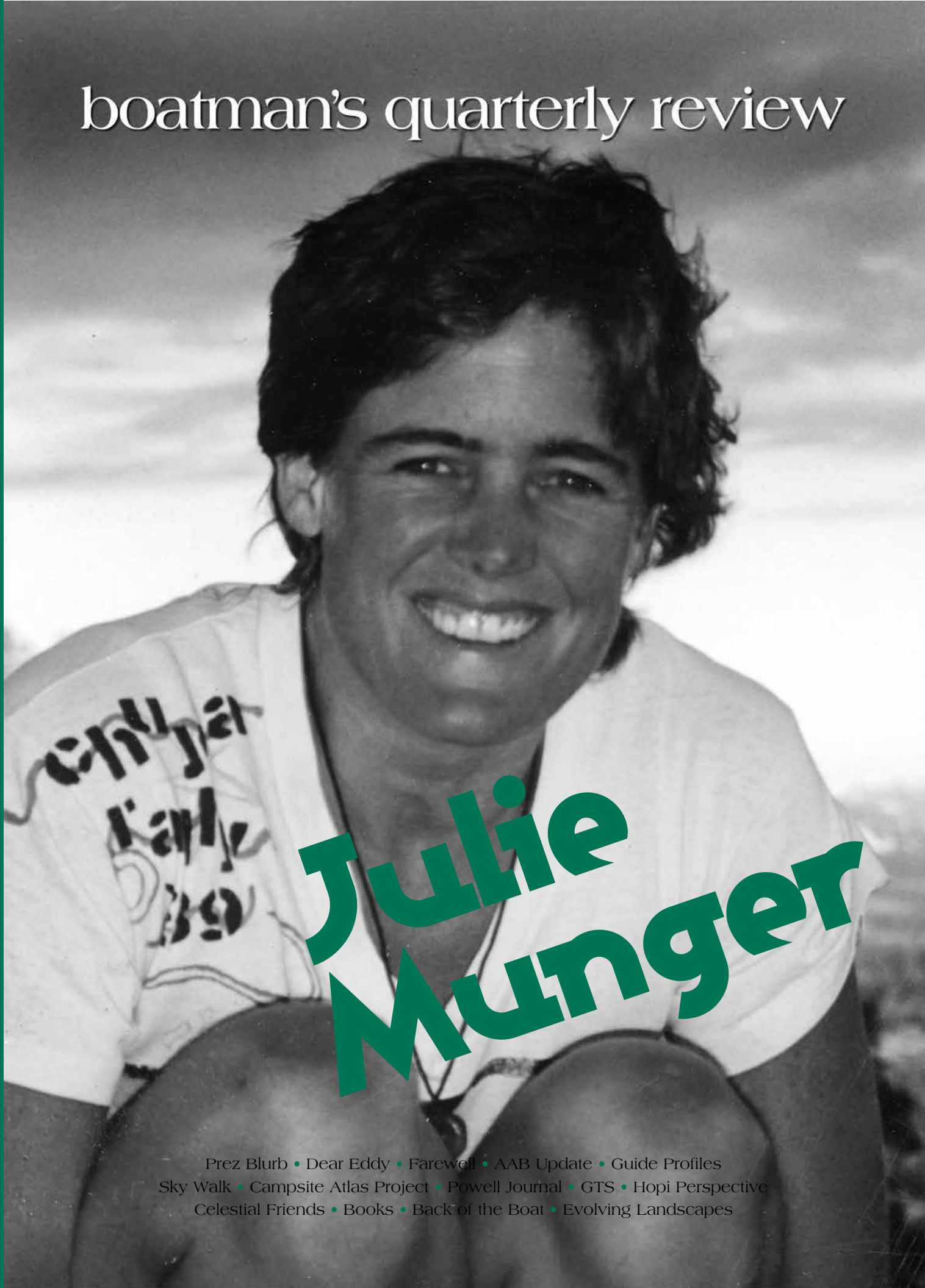
boatman's quarterly review



Julie Munger

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 generally held the first Wednesday of each month. All innocent bystanders are urged to attend. Call for details.

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

Written submissions should be less than 1500 words and, if possible, be sent on a CD or emailed to GCRG; Microsoft Word files are best but we can translate most programs. Include postpaid return envelope if you want your disk or submission returned.

Deadlines for submissions are the 1st of February, May, August and November. Thanks.
Our office location: 515 West Birch, Flagstaff, az 86001
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Prez Blurb

Greetings all you lucky bqr readers! First of all, thanks to all of you who attended the gts land and river sessions! As a participant, I can say that the land session was one of the best I have attended, and I hear that the river trip was incredible. Our total attendance was the highest it has been since 2002! So, spread the word and let's keep the momentum going in the years to come! In order to do that we need your help… Membership is the crucial element to the survival of gcrg and the bqr (what would we do without the bqr)! Please talk with passengers and guides about gcrg, what we do and how to become a member. With all the changes happening in Grand Canyon National Park and the management of the Colorado River now is a crucial time and gcrg is a strong voice that is needed for the protection of this place we all love. Please don't just be an armchair enthusiast, encourage folks to join and be a part of the greater whole!

I just returned from my first trip of the year. I didn't notice many changes in the amount of interactions with other trips—really pretty quiet. However we did see differences in some of the side canyons… A rock fall at one of the scrambles in Hakatai Canyon along with quite a bit of sediment deposition and pool formation from a recent flood (making the hike a bit more friendly and wet), and the disappearance of the big chalkstone boulder at the top of the first narrows in Matkat! It's always great to see the dynamic forces of nature at work.

As we are propelled into the heart of summer along the Colorado River in Grand Canyon I urge you to keep in mind the changes we will see—keep interactions positive and the lines of communication open, use the courtesy flyer and above all… Remember how lucky we are to be where we are doing the things we do!

Here are some words from the mind and hand of Edward Abbey: "Night and day the river flows. If time is the mind of space, the Colorado is the soul of the desert. Brave boatman come, they go, they die; the voyage flows on forever. We are all canyoneers. We are all passengers on this little living mossy ship, this delicate dory sailing around the sun that humans call earth… Joy shipmates, joy."

Marieke Taney

Day 21, Mile 225

Strung on a cable overhead
the orange balls
say it all
"You're back.
Too bad, buddy.
Get ready to suck it up."

Suck up all the unbelievable shit
this absurd life requires

We've been free
and free of it
for three weeks
like interplanetary travel
but still on earth
in the Grand Canyon

It's post-partum depression
but not for the mother
or the new-born
It's for those who have been re-born
in the Canyon
our sins washed away
by the Colorado's waters

Like Adam and Eve, then
we are cast out of paradise
We can't say why
why we cannot continue
this most innocent of occupations

Why can I not
go back to the Ferry
and start all over again?

They are coming for me
They will drag me
kicking and screaming
back to the city
back to "civilization"
back to the grind
that grinds you down
as surely do debris flows
to the riverbed

It is a jail sentence
this exile from the Canyon
But knowing that escape is possible
in every idle moment
we pace our cells
scheming
What will it take
to get a permit?

What will the Gatekeepers require
to let us back in?
We must agree
to shorter stays
to less time
to spend amongst our friends
the rocks and canyon wrens
to give up the mouths
of Tapeats and Kanab Creeks
and then, the ultimate question
—how to draw the lucky number?

Must I sacrifice my first-born
to appease the gods of the lottery?
I am torn
or must I take the name of a deceased
to go again this year
risking fines and maybe jail time
Desperate need calls forth desperate means

It is now two weeks
since we trekked our Trail of Tears
up the Diamond Creek road
and I suffer still

Steve Miller

Dear Eddy

From a letter to GCRG, dated April 20, 2007

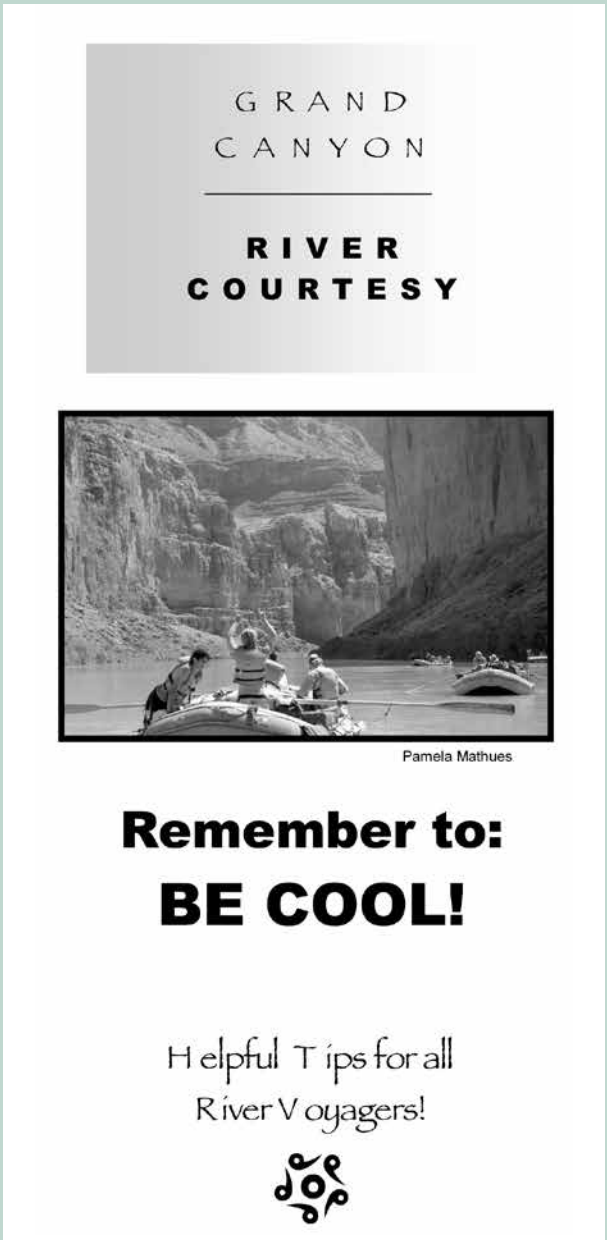
I am really sorry that I missed out on the chance to fund Lew's interview. Thinking about Lew reminded me that at this year's GTS, the Grand Canyon Courtesy Guide was not only mentioned, but the audience was asked to get a copy and to use it on the river. Lew and I had a heavy hand in its production, and I want to review that with you, hoping that perhaps we will one day collect a bit of credit for our role.

It all started with the Colorado River Constituency Panel, which was formed in December, 1990 under superintendent John Davis, and of which I was a charter member. The first meeting of this panel was held on January 10, 1991, and at that meeting I proposed that a "Courtesy Guide" be developed with the idea that it might alleviate some of the friction that I had experienced on the river between trips. In April, 1991, I sent an outline of a proposed document to Jerry Mitchell, who was the NPS Resource Management Specialist. My suggestions led to me being appointed head of a committee to develop the Courtesy Guide. The committee consisted of me, Lew Steiger, and Jim and Bev Heumann. I was the chairperson, and we reported to NPS ranger Mark Law.

The going was tough, as Lew will certainly testify, and the finished document was not completed until 1994. Approximately three years of hard work, research, and negotiation were required to put it together, and it had in it our hearts and souls, as well as numerous trips to the Canyon meetings, correspondence with Coast Guard attorneys, and many letters and phone calls between Lew and myself. When finished, it was published by NPS, with attribution to the Constituent Panel.

You may recall that in 2004 I saw a new version of this Guide that was attributed to the GCRG, and that I wrote to Mike Ghiglieri mildly protesting that attribution of the origins of the Courtesy Guide had been left out. It turned out, of course, that this was not intentional, but that time had simply erased any memory of how the Courtesy Guide came about. I think, in light of the Guide being mentioned at the GTS, that it would be appropriate for a mention in the BQR of its origins. Lew, acting for the guides, certainly had a large input.

Bill Mooz



A response from GCRG

You're absolutely right—we do owe a debt of gratitude to the hard work of the Constituency Panel members over a decade ago. Although the latest version of our River Courtesy Flyer has morphed significantly, similarities remain which are a testament to the longevity of the original document's content.

The Constituency Panel's arduous and lengthy process is well documented in a very dusty file of ours entitled "Courtesy Flyer Debate." As you mention, Grand Canyon River Guides was heavily involved in developing

the original brochure through Lew Steiger's participation. In fact, an initial version did have Grand Canyon River Guides' name on it, but subsequent revisions credited the Constituency Panel to avoid politicization.

Echoing the original flyer's intent, the latest iteration is an educational tool for *all* boaters. When the Colorado River Management Plan (CRMP) was heating up in 2002 and tensions between private and commercial sectors were on the rise, reviving (and updating) a courtesy flyer seemed prudent, especially since the document had languished unused for so many years. And most certainly, the availability of our newest version is timely as Grand Canyon National Park commences the implementation phase of the CRMP this river season.

Through both of these latest revisions, GCRG's highly successful collaboration with the Grand Canyon Private Boaters Association is indicative of our mutual desire to promote positive river encounters between all river users. Our path has been made much easier through your worthy efforts, those of Lew Steiger, the National Park Service, and all other Constituency Panel members, in proactively addressing a need that continues today—preserving the river experience for all to enjoy.

Lynn Hamilton
Executive Director

Note: *The new River Courtesy Flyer is being distributed widely to all sectors. We are very appreciative that the NPS will be including the brochure in all private permit packets as well as making them available at Lees Ferry. The flyers are also being sent to commercial river outfitters, to Grand Canyon Monitoring and Research Center, and to outfitting/equipment rental companies like PRO, Canyon REO, Ceiba, etc… If you're interested in seeing the brochure yourself, you can find it on GCRG's website, www.gcrg.org and that of the Grand Canyon Private Boaters Association, www.gcpba.org.*

From an email to GCRG dated April 20, 2007

On Friday, March 30, eight volunteers showed up to help pull Sahara mustard from the Lees Ferry area. In just a few short hours, the group removed 6,024 of the invasive plants from the Paria Bridge downriver along the roadside. This was a great effort and will truly help with the long-term control of this highly invasive plant species.

On the GTS river trip, the crew removed 2,300 camelthorn plants from Unkar and 1,575 from Crystal. Unkar and Crystal are the two test sites to see whether long-term manual removal of the spiny bugger's top growth will dimish its extensive reserves and ultimately kill the population. The group reported that both of those sites look much better than last year, which is great news.

If anyone is interested in continuing this work throughout the year, that would certainly help and would be greatly appreciated. There are very simple postcards that folks can track their numbers on and send them directly to Lori Makarick—please contact Lori at (928) 226-0165 if you are interested in helping with this project and don't forget, we have to *get the data* to answer the question. The GTS group couldn't be stopped as they pulled about 3,000 tamarisk seedlings up Mohawk Canyon!

Lori J. Makarick
Backcountry Vegetation Program Manager

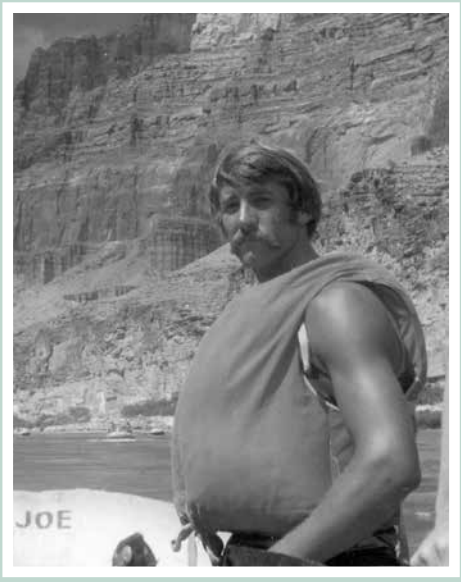
GTS trip pulling camelthorn at Unkar. Photo: Greg Woodall

Farewell

Joseph Lewis Tonsmeire
January 22, 1948 –March 7, 2007

A passion for life and adventure, an inspiration to all.

Joe Tonsmeire, longtime Grand Canyon boatman, died March 9, 2007 of multiple myeloma. Joe came from an adventurous lower Alabama family with eight boys. He headed west in 1969, finding work with Hatch up in Vernal and doing his first training trip in Grand Canyon late in the year. He worked long seasons in the Grand the next three years with such luminaries as Steve Bledsoe, Tom Moody, Pat Conley, Tim Means, Dave Leesburg, and Whale. Joe once told me the story of how he and Whale decided to hike in and see the wonders of Thunder River. They had a short break between trips in the middle of summer, and it was to be the first "backpacking experience" for both of them. By the time they got to the trailhead with their brand new hiking boots and packs it was already the heat of the day and by the time they got down to the Esplanade they were out of water and suffering considerably. Finally Whale laid down under the meager shade of a small bush and uttered the classic lines "you go on, it's all right, just leave me here to die." Joe couldn't get him to move and promised he'd return as soon as he could with water, "just please don't die!" Joe made it down to Thunder, and after filling his gullet and canteens was about to head back up when he saw a cloud of dust heading down the slope. He thought it was a rock fall but soon realized it was Whale. Whale had decided not to give up on life just yet, and upon catching sight of the falls had barreled straight down the slope, ignoring both trail and switchbacks. The two hikers were reunited, spent the night in cool watery bliss, and hiked out early the next morning to go rig another river trip.



In the Fall of '71, Joe married his high school sweetheart Fran Bender, in Upper Elves Chasm on a private trip with his brothers. The two were to remain sweethearts the rest of their lives. They took a month long honeymoon trip in December of '73, two people rowing two seven man rafts during which Fran dislocated her shoulder on the way back from Thunder River. They put the shoulder back in by guess and by golly and rowed a double-rig until Fran was healed up enough to row with both arms again.

During a short break in the epic summer of '72, Joe and Fran managed to squeeze in a Middle Fork private and fell in love with Idaho. They moved up to Lemhi and began building Wilderness River Outfitters (WRO), a truly adventurous company running river trips and other expeditions all over the Northwest and up into Alaska. It was about as far from industrial Grand Canyon boating as you could get and still call it a river business. Yet they couldn't stay away from the Grand, running private family trips with their children Amy and Seth, and sharing Charter trips with their many loyal customers and friends. Joe remained a Grand Canyon guide to the end, captaining a paddle boat all the way on his last trip in September of 2006.

Fran, Amy, and Seth are keeping WRO alive with the help of Joe's brothers Skipper, Dan, Pepper, and Mike.

Matt Herrman

With the pace of a mountain goat and the heart of Lion, he never stopped living—he'd rather die trying;
From the top of McKinley or thru raging falls,
he's riding the range and shooting the stars;
The River it called and the trail it began,
and the wind always whispered to this special man;
A figure of love, and passion and grace,
blue dancing eyes and a smile on his face;
I wonder now what we should do or should say;
I'll follow his tracks and cherish each day;
Well the River it called and the trail it began,
and the wind always whispered to this special man.

~ a poem by Joe's daughter Amy

Adopt-a-Boatman Update

How are we coming along on our Adopt-a-Boatman oral history project? The proverbial ball is rolling along, lickety-split! Here's the scoop:

- Lew Steiger will conduct the interview with *Howie Usher* in late May.
- We've been in contact with *Allen Wilson* and *Tim Whitney* to schedule their interviews.
- The Adopt-a-Boatman sponsorship of an interview with *Lew Steiger* is now fully funded with Katie Lee putting up the last $250 (Richard Quartaroli had taken the initial plunge). Quite a number of you were itching to help with that sponsorship and we're sorry, but Katie beat you to it! But it's great to know that there is such interest in "interviewing the interviewer." We've already talked to Richard Quartaroli and Brad Dimock about cornering Lew sometime this summer. As Katie urges, "If push comes to shove, sit on his oars!"
- We have a brand new fully funded "adoption" for an interview with *George Billingsley* (geologist, river runner in the 1970s), courtesy of GCRG member, Guy Blynn. We're thrilled to add George to the list! Thank you, Guy.
- We have two new partially funded adoptions! The first is to sponsor an interview with *Richard Quartaroli* (GCRG past president, river historian, and river guide), courtesy of GCRG general member Elizabeth Stewart. Richard's adoption needs $500 to complete. The second partial adoption will help sponsor an interview with *John Blaustein* (former dory guide under Martin Litton, noted river photographer), needing another $350 to be fully funded. GCRG members John Downing and Betsy Barker have stepped up to the plate as sponsors for this adoption of "J.B." Thanks to all!
- Our existing partially funded Adopt-a-Boatman sponsorship is for interviewing *Dick McCallum* (Expeditions) with another $400 needed to take up where his previous interview left off…Thank you Bill Bishop for helping to get that adoption started.

Please help us fully fund any of these partial adoptions by sending a check to GCRG today! You need not cover the entire remaining balance as any adoption can have numerous sponsors.

For more information about this fundraising program, including the current spreadsheet detailing Adopt-a-Boatman sponsorships and their status, check out the GCRG website: www.gcrg.org/adoptaboatman. Considering the flurry of activity in this program, checking out the current status is advisable, or you can give Lynn a call at (928) 773-1075, or email to gcrg@infomagic.net.

We are so encouraged by the widespread interest in this fledgling program. Thanks so much to the generous sponsors, and to those willing interviewees! Capturing their stories for posterity will be an honor.

Announcements

JOB

Toucanet Coffee in Flagstff is looking for someone to help label coffee bags, grind coffee and perhaps do some delivering—therefore must drive and have a vehicle. This person will need to work at least two days a week, minimum four hours each day (Monday and Thursday) through August this summer. The pay will depend on how responsible, etc. the person is. Please let me know if you know of—or are—a person I can trust to help with this. Contact Helen at (928) 779-1856.

ARTIST OF THE ISSUE

The art in the center of this issue is by Erica Fareio, who guides for Arizona River Runners. You can see more of her work at ericafareio.com.

Guide Profiles

Beverly Caifa, Age 46

Where were you born and where did you grow up? I was born, and raised in Austin ,Texas.

Who do you work for currently (and in the past)? I currently work for azra, and worked with Sleight Expeditions/High Desert Adventures until it was purchased by azra.

How long have you been guiding? I started training in '88, and got my guides license in '90.

What kind of boat(s) do you run? Oar and Motor

What other rivers have you worked on? The San Juan.

What are your hobbies/passions/dreams? Scuba Diving, creating-crafts, I love to travel! My goal…to introduce as many people to my passions as possible.

Married/family/pets? Fortunately, I still have my entire family, and my wonderful…and understanding husband Michael.

School/area of study/degrees? Living abroad and being around thousands of talented, and interesting people.

What made you start guiding? The fact that we are such a small speck in time will always keep me in awe of the Grand. Nowhere else do you lose the sense of time, routines, and what society expects. I love to see people unwind and become kids again. I think having to experience Mother Nature in all her many facets builds a bond that can't be experienced in many other ways.

What brought you here? Destiny, I missed my flight to Hawaii and ended up camping at Lees Ferry. Next thing I knew I had begged my way on a river trip with Diamond River Expditions.

Who have been your mentors and/or role models? Wow!…too many to mention. Peter Weiss, Rusty Dassing, Don Bacco for taking me under their wings in those early low water days. Now it's all the wonderful people that work for azra like Drifter and Brad, that just seem to have endless amounts of knowledge about the place we work in. And of course all those people out there who strive for what they believe in.

What do you do in the winter? Scuba Diving Instructor.

Is this your primary way of earning a living or do you combine it with something else? I combine it with my earnings from teaching diving.

What's the most memorable moment in your guiding career? Probably this one—being nominated when their are so many talented and educated people working on the Grand Canyon!

What's the craziest question you've ever been asked about the canyon/river? Does that rock reach the bottom? Are we going to go under that bridge? What color is my underwear?…just kidding.

What do you think your future holds? Keep traveling until I find that special spot. Maybe I will always have "Puppy Feet" as my Belizean friends call it. I imagine I will always try to squeeze in a trip or two a year down the Grand as long as my body will allow it. I, like so many others, will always be drawn back to the Canyon.

What keeps you here? Mostly the freedom I still feel in the Grand Canyon. Waking up each morning and getting to choose what we would like to do with the folks that day. I think that's how we guides are so successful at sharing or knowledge of the Grand Canyon. Not too many jobs out there allow that sort of freedom. And of course my Grand Canyon family, the chance to reunite with them all somewere down there.

If I had one word of advice it would be *simplify*.

Rachael Rankin; Age 29

Where were you born and where did you grow up? I was born and grew up in West Jordan, UT until I was fourteen. In '92, my family moved to Big Water, UT just outside of Page, AZ. I graduated from Big Water School in 1995 in a class of four—fairly large for our little school.

Who do you work for currently (and in the past)? I began working for Diamond River Adventures after I fell in love with the canyon on a private trip. I started in June of 2001 and I still work for Diamond. I have done a trip with Wilderness River Adventures and I rowed my first boat with High Desert in October of 2001. Also, I have done a few GTS trips and a tamarisk removal trip.

What kind of boat(s) do you run? I run 18-foot oar boats and 35-foot motor boats. I benefit from working for Diamond because we get to play in both types of boats fairly equally.

What other rivers have you worked on? I have not worked on any other rivers; I hadn't done a river trip until I went on my private in the Grand in May of 2001. I never knew it was such an amazing place and I was determined to spend as much time in the big ditch as possible. I grew to love sharing the experience with passengers; seeing the canyon through their eyes over and over again, every trip! I have run the Salt River in southern Arizona as well.

What are your hobbies/passions/dreams? I fancy doing anything outdoors. I hike, road bike, cross-country ski and snowboard. I love to spend time on Lake Powell kayaking and water skiing. My passion for the last six years has definitely been the Grand Canyon; however, my dream has always been to be in the medical profession.

Married/family/pets? My better half is Dave Panu, another guide for Diamond. We live in a lovely little house in Page and have a cat named Kitty.

School/area of study/degrees? After high school I attended college at Southern Utah University in Cedar City. I obtained a B.S. in Biology in May of 2000. I am going back to school to work on a nursing degree.

What made you start guiding? I started guiding because I became enamored with the Grand Canyon and the simple life on the river. It became a place of sanctuary for me and a place to challenge myself. I enjoy working with people and it all fit together nicely.

What do you do in the winter? In the winter time I have done a variety of things. I worked in Brian Head, UT for several seasons as a cocktail waitress/ bartender. In 2004 I began working as a teacher in Big Water, covering all the Math and Science for the secondary grades. This winter I have gone back to nursing school to pursue my dream.

What's the most memorable moment in your guiding career? I have had many memorable moments—moments that involve unimaginable beauty that takes your breath away; waterfalls, flashfloods, helping save a life on an October trip. I've listened to live string quartets and bluegrass in side canyons. I've laughed so hard that my stomach hurt on countless occasions. I've had the feeling of triumph after rowing 26 miles on a windy day, and low water trips on the same prop from put-in to take-out. I've had great runs, and not so great runs (Bedrock, yikes!). It is difficult to pick out the most memorable moment—they are all memorable moments.

What do you think your future holds? My future holds more school and hopefully a few children. As sad as I am to realize that my Grand Canyon rafting as a career is coming to a close, I am grateful for the incredible experience. I plan on starting back to school at NAU in May of 2007. I will receive my BSN in December of 2008 and go to work as a nurse in preparation for graduate school. Although my program will not allow me to run as a full-time guide any more, I will be squeezing in as many trips as possible. It is something that will be a part of my life as long as I live.

What keeps you here? I began running river and I keep running river for the same reasons: the beauty of the canyon, the song of the river, the friends I meet, the challenges I greet, and the simplicity of life. My feelings are best expressed in a quote by Henry David Thoreau:

> I went to the woods [canyon] because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived.
>
> —Henry David Thoreau, *Walden* (1854)

The Sky Walk

News of the newly opened Sky Walk out on the Hualapai Plateau seemed to be flooding over me for the past couple of months. First it was releases on the audacity of the plan, then it was news that the main structure had been placed, and lately that it was *open*.

Much of the reaction from the people in my circles and the press I read has been tut-tut and judgmental. The take from these commentators is that the whole scene smacks of carnival and crass commercialism. Where is the appreciation of nature and quiet?

But, I'm innately a curious guy—a guy who likes to probe the edge, even to be shocked or startled. Guess I am just another of life's voyeurs.

Saturday, April 22 found me driving to Grand Canyon West from my environmentally correct life in prosaic Boulder City, Nevada. I was on the road to Meadview—so familiar from so many takeouts—sneaking in alone under the radar of my politically correct friends and my critical significant other, headed for my Sky Walk adventure. I figured this was going to cost me $40 plus gas. I was wrong.

About five miles toward Meadview from the turnoff from US 93, I became aware that there was a lot more traffic than I remembered out there. I was thinking that the Dolan Springs and Meadview developments were really starting to get a bit congested. Then I found myself behind one of those big white luxury buses, and upon passing it noticed that it was labeled Grand Canyon West Express.

The light dawned, these folks weren't locals. I started to notice that the cars I was passing had California plates, and there were too many from Nevada for this road. For crying out loud, all these people were heading for the Sky Walk! I sped up, passed the bus, got as far ahead of the traffic as possible; because I didn't want to eat their dust on the old Clay Springs road on the climb up to the Hualapai Plateau.

The turn onto the Clay Springs road delivered two surprises. First, it was a well graded dirt road, where before it had been a two track decades ago. Dotted before me was a chain of dust clouds. The road was congested with more luxury tour buses, pink and yellow Las Vegas tour company vans, white minivans from all the other tour companies in the surrounding three states, and numerous private cars and SUVs, many of the latter driven tepidly by tourists from Kansas testing their mettle against the washboards, curves and terrain of this mountainous desert road. Some were going just too slow at ten miles per hour on that 25-mile leg of the journey. At that speed the washboard was beating me to death.

We snaked our way up the flank of the plateau. After fifteen miles of dirt and upon reaching the Hualapai reservation boundary, we found ourselves on a nice paved road that took us directly to the Grand Canyon West airport terminal. The terminal serves as the jumping off point for tourists. We were all now funneled into the great white way, with no escape. My wallet immediately felt insecure.

A greeter on the road directed me to a large parking lot already crowded with cars and SUVs, and I joined the flow of people moving toward the air terminal which serves as the visitor center and hub for transportation out to the attractions that dot Grand Canyon West. The road fronting the terminal was lined with huge white luxury buses and vans, all parked herringbone style to optimize the space just waiting to be summoned. As I walked toward the terminal, I merged with a bus load of Chinese who had just disembarked from one of the white behemoths from Las Vegas, their giddy excitement being quite infectious.

Inside were three windows at a bank-like counter, two open, the other closed because the operation is desperately understaffed. They have a large menu of tours to select from including helicopter lifts down to the river where you can join the part day float trips on Lake Mead. A helpful Hualapai greeter read out the choices as we waited in line. I chose the stripped down, minimal tour with the Sky Walk as its centerpiece. This package is called the Spirit Package—price $49.95 after the 25 percent local resident discount which the greeter lady advised me I should request, plus $25 for the Sky Walk.

No discount for the Sky Walk. You want the walk, it's $25 no matter what package you buy! But you can't just pay that $25 fee and get on. The Sky Walk has to be bundled with one of the tours.

My Spirit Package included trips to Eagle Point where the Sky Walk is located, Guano Point farther out on the plateau to the west, Hualapai Ranch to the east of the airport, a Wagonwheel Ride from the ranch, lunch at either Guano Point or the ranch, and a free certificate of accomplishment at the gift shop.

The fellow in front of me was buying tours for three or four people, his tab over $380! Out came a fan of $100 bills.

There was activity and new construction in every direction from the airport. They are elongating the runway to accommodate Boeing 737s. The existing runway is crowded with tour planes representing every operator who is anyone in the region. You've seen them all. The whomp whomp of helicopters taking off and landing is omnipresent, from a heliport across the road from the terminal. Aircraft and helicopters were parked all over the place.

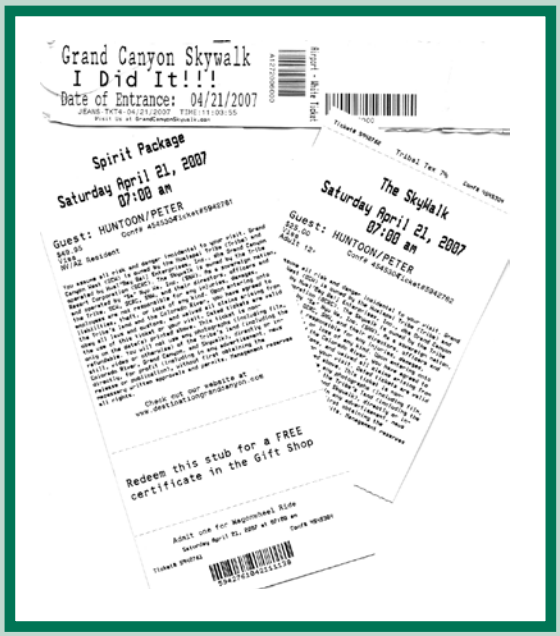
Eager staffers were pointing out that at least one major

hotel is planned, so posh overnight stays will be possible soon. Another staffer revealed that all the water to supply the place—10,000 gallons per day—is hauled by tanker truck from Peach Springs, seventy miles to the east on the Buck and Doe Road. Hardly any of it is used for toilets because there are rows of porta potties everywhere.

The pace of things, the provisional look of most of the buildings, the torn up ground for all the new and ongoing construction added to the urgency of the moment. Voices filled the air, people surged this way and that. The ambiance was similar to Las Vegas.

Shortly I found myself in another queue in front of the terminal, boarding a luxury white tour bus heading out to the Sky Walk. I was in the company of the same Chinese who had arrived along with me. A greeter counted us as we climbed in, and cut the line off when all the seats were taken. The line just kept forming for the next bus in five minutes.

I sat in front of a couple from Lawrence, Kansas, who had braved the Buck and Doe Road from Peach Springs. We quickly compared notes. That road was virtually deserted. I was going home that way—to Peach Springs, then back to Kingman, even though it added 150 mile to my return. Enough of the Clay Springs road with all that traffic!



The Kansans were excited. They had just survived a truly memorable driving experience to the ends of the earth on a road the likes of which they had never driven. They failed to fill up with gas in either Seligman or Peach Springs, so had done it on fumes, arriving at Grand Canyon West on empty. Helpful staffers found them some gas at $3.50 per gallon, and now they were on this bus off to see the fabled Grand Canyon! Their excited anticipation, coupled with that of the Chinese, was palpable. I found myself being swept further along by the anticipatory mood of these folks. We were driving across the flat Hualapai Plateau, less than a mile from the canyon rim, but no one could see it.

The Native American woman driver was a most congenial sort, so I struck up a conversation. I wanted to get a Hualapai perspective on all of this. The first thing she revealed was that they are hiring anyone who will come out there. Anyone! I already had noticed that most of the employees are not Hualapai. She then offered that she commutes from Meadview, a place she considers heaven.

Then she laughed, and advised that she was not Hualapai at all, but rather a transplant from the San Juan Pueblo in New Mexico. This was a great opportunity for her, especially because she already had all the necessary drivers licenses and certifications being a former Greyhound bus driver. We were moving smoothly down a fine, narrow paved road, one bus every five minutes, all day long.

After a few turns, there it was off to the right, the canyon rim, the Sky Walk! Even from a distance you could see all sorts of people crowding all over it.

A temporary reception building serves as entrance to it. You disembark the bus, take a dozen steps and enter. They immediately advise that you can't take photos, and that you must surrender all cell phones and cameras which are stored for you in bins until you leave. Next you pass through a standard airport security gate in order for a security officer to in fact determine that no cameras or cell phones are slipping in.

Then you queue in yet another line where an attendant affixes a bar coded time-date stamped wrist band on your left wrist. Unfortunately it does not contain a running serial number so that you see exactly how many have gone before. However, one of the guides enthusiastically told us they just recently had passed the 10,000 mark.

It was 11:03 A.M. based on my wrist band, as I walked out into what was a beautiful clear, bright April day, with widely scattered clouds. Stretching out ahead was a U-shaped sidewalk maybe six feet wide with five-foot high walls composed of panels of thick glass, and a floor comprised of composite glass panels separated by gaps of two inches. The walkway had no roof. The composite floor panels form a three- or four-foot wide clear glass view to the depths, but the foot wide edges over the support beams have some type of opaque metalized coating or layer so you can't see the top of the beams.

This structure is moored to the plateau surface back from the edge of the precipitous cliff. The Sky Walk juts out 200 feet beyond the sheer drop. The upper cliff is the full section of Esplanade Sandstone.

Some tens of feet back from the rim, attendants provide you with cloth booties to cover your footwear so you won't scratch the glass. They will help put these on, should you need help.

I felt vertigo as I walked past the edge of the cliff, surprised at being somewhat disoriented. Looking out at the horizon cleared that up instantly, but having the

confidence to walk the center of the clear glass floor required logic. People were excitedly chattering, hesitantly stepping forward. Most clutched the rail, a few would not venture off the metalized coating covering that they knew covered a support beam.

One man was having great difficulty taking the first step beyond the edge of the cliff, and it took him many very uncomfortable minutes to negotiate the first ten feet or so. Beyond that he struggled around the circuit grasping the railing as if there was no floor under him. Finally, with a look of great relief, he disembarked.

There were two cameras set up at the outermost point, each designed to take optimal advantage of different sun angles. Snap shots were $15 for an 8 x 10 photo, and there were plenty of willing visitors. By the time the folks reached the cameras, they generally were more at ease with the experience, so they became more talkative and effusive. Those cameras were pure good marketing.

If you weren't totally distracted having your photo taken, you could opt to drink in the scene at the outermost point of the walk between the two camera stations. Although the U-shaped sidewall sticks out 200 feet, it does not clear the edge of the Redwall cliff below. If you look straight down, it is about 600 or so feet to the slope that occurs between base of the Supai Group and the edge of the Redwall cliff.

Outward, you have a direct view of Lake Mead some 4,000 feet below. These details are really lost on most people during the walk because the adrenalin is simply too concentrated in the blood stream to allow for such analysis. A disclaimer is warranted. I lingered on the Sky Walk for over half an hour just so such details would fully register.

A Hualapai man in his twenties was fully employed out there, continually wiping the fingerprints from the class and dusting the glass floor. I struck up a conversation with him, and he shared many insights. He advised that since the Sky Walk opened, visitation has just about quadrupled, up from about 500 a day to between 1500 and 2000. People arrive in every mode—plane, helicopter, bus, tour van, private car. Clearly the Chinese businessman from Las Vegas who conceived and funded the Sky Walk has a winner on his hands.

Visitation is so great, it is overwhelming the operation. They were continually hiring, unable to fill all the jobs. And they hire anyone, not just Hualapai. In fact, the Hualapai were having difficulty taking the jobs, because it requires a daily 150-mile round-trip over the tedious Buck and Doe Road from Peach Springs. As a result, many of them find the jobs untenable.

Employees commonly work twelve-hour shifts, and some had been working seven days a week for lengthy periods since the Sky Walk opened. Another Hualapai I collared delighted in correcting me that he was in fact a Filipino-Hawaiian who baled from Las Vegas to take advantage of the opportunity afforded by employment at Grand Canyon West.

The fellow I was talking to on the Sky Walk continued. Construction of a two-story building hosting a restaurant on the second floor was going to commence shortly in place of the temporary trailer-like structure that now serves as the gateway to the Sky Walk. The building will be built on top of the beams that support the Sky Walk; consequently, it will be perched right on the edge of the plateau with spectacular panoramic views.

A technical problem has arisen. Condensation forms within the composite sandwich that makes up the glass floor of the Sky Walk, creating bands that sully the view and diminish the full psychological impact. This problem will have to be resolved soon.

Hotels and restaurants are in planning nearby, the idea of course to encourage overnight stays, generate even more revenue, and to make the place a plausible destination for commercial jet traffic. What I was seeing as torn up ground was just the beginning of construction of this infrastructure. The place is going to look differently even in a year or two.

I left the Sky Walk, and boarded a bus out to Guano Point. You river runners know this as the location of the headframe for the old cableway to the guano cave-mine on the north side of the river. The cave is in the Rampart Cave Member of the Muav Limestone, some 3,700 feet below the point.

Guano Point is spectacular, having a hill of Esplanade with a trail to the summit out at its very end. The summit provides an unimpeded 270 degree view of the canyon.

The canyon here is far more imposing than in the eastern Grand Canyon owing to the sheerness of the cliffs and minimal sloping benches between. The Esplanade Sandstone forms the rim of the Hualapai Plateau here, and is much more resistant to erosion than the Kaibab and Toroweap formations in the eastern Grand Canyon.

Two women were seated on the rocks at the top of the little hill. They looked quite representative of the crowd, so I struck up a conversation with them. They were reveling in the beauty of the scene, their only complaint being that they were having difficulty judging the scale of the things they were seeing. This turns out to be a common refrain out there, because the canyon is so deep, walls so sheer, and the scene so stark, there is little with which to scale things to mortal senses.

Think of it. At the Bright Angel Lodge you look over the edge and see the switchbacks of the Bright Angel Trail below, there are trees, there are buildings—all objects that can provide yardsticks. Grand Canyon West is devoid of these things, so it is as if the visitors are dropped into an alien world. They simply can't scale it. Thus the scene almost takes on the appearance of some huge billboard.

The women were a mother-daughter pair from Toronto. They were in Las Vegas for a few days taking

in a horse show—not the gambling type. The tour packages to Grand Canyon West afforded a reasonably low cost means to see the Grand Canyon; and not only that, conveniently within one day, just the amount of free time available to them. They were picked up at their hotel, and will be deposited there at the end of the day. This was just the ticket. Who could resist? The Sky Walk was not the primary draw for them, but what the heck, it was a kick, icing on the cake.

I thought of the bus load of Chinese whom I was accompanying most of the time. Theirs was virtually an identical story. This Grand Canyon West operation was making one of the premier world attractions accessible to them. They weren't going to get to see it, let alone enjoy it in any other way. I couldn't help but to discern parallels between their packaged experience at the rim of Grand Canyon West, and the packaged raft trips taken by many dozens of people I have talked to on the river, particularly those on the 36-foot pontoon rafts run by sophisticated guides.

The headframe of the old guano cableway is open to unhindered visitation now, a situation that will have to change in time. Much of it, and the machinery that drove the cableway, is still there. It is situated on the canyon side of the scenic hill where I found the two affable women from Toronto.

On the plateau side of the hill is a modest sized cafeteria in what appears to be a provisional building that serves up a pretty good lunch of barbeque. You are free to take your lunch out to picnic tables on either side of the building, both with fabulous views, or you can even wander over to the edge and dangle your legs over the side while you balance your food on your lap. There is a swarm of ravens awaiting your every mistake.

There are no fences. The Hualapai have been operating Grand Canyon West for sixteen years without a fatality.

Every square inch of ground is worn in the immediate vicinity of the cafeteria, but the traffic is confined to a small area that extends only a few hundreds of feet from the building. The class of visitor who makes it out here is not inclined to venture further. There are no hikers heading into the wilderness. There are no trails.

I boarded the bus back to the airport. My ticket was still good for a trip to the Hualapai Ranch, so at the airport, I climbed into a van for the two mile ride to the ranch. One leaves every fifteen minutes. This is the alternate lunch facility, where they have a food bar with home cooked meatloaf type meals.

The ranch is such an obvious made-for-tourist-trap, you have to laugh. It consists of a bunch of small clapboard buildings lining a wide bridle path that looks like a grade B road side attraction along Route 66. Aside from the lunch room, it has the jail, the curio shop, the fake mine with headframe situated on a pile of dirt, corals, and yet another gas or diesel powered generator. This piece of work needs more work and more imagination, but with the bucks flowing into this operation, that will not be long in coming.

The ranch is where I could board my wagonwheel ride on a horse drawn rubber tired wagon lined with benches—I didn't bother, or I could have hired a guided horse ride of any duration which would follow a well graded dirt road toward the northeast and back.

I recall the abject destitution of Peach Springs when I first visited the place in 1961. After contact with whites, the Hualapai were routed from their vast homeland on the southwestern corner of the Colorado Plateau, and herded down to Las Paz just north of Yuma at the beginning of the last century. Out of their environment, and exposed to European diseases, they died off in unconscionable numbers while crammed into what amounted to nothing more than a concentration camp.

After about a year, they were allowed to return to the plateau, their diminished numbers being confined to a fraction of their former domain at Peach Springs. They were set up as agrarians stuck in a landscape with minimal natural resources and no meaningful infrastructure. The place could hardly support coyotes let alone any semblance of human civilization without external aid. One legacy is that the leading killer of Hualapai men is drunk driving.

They tried a casino, but that didn't wash with Las Vegas just over the horizon. They slowly have been building Grand Canyon West as a tourist destination, along with their conjoined boating operations on the river below Diamond Canyon and upper Lake Mead. Growth of this enterprise has been incremental and fitful, but now they have this Sky Walk. Their operation is emerging with a true draw, and obviously reaching a critical mass.

Some sharp business acumen coupled with improved marketing is bearing fruit out there. They are turning a small piece of their Grand Canyon into an asset that has the potential to spread the bounty. Maybe their ship is finally coming in.

We are seeing a defacto zoning of the Grand Canyon. Operations such as this are engaging an entirely different clientele than many of us normally associate with the Canyon. I observed first hand that these folks were thoroughly engrossed in and enjoying their experience. For half a day I allowed myself to be carried along on their excitement and enthusiasm as they too experienced the Grand Canyon, most for the first, and probably only, time in their lives.

Peter Huntoon

The Campsite Atlas Project:
Mapping the Human Habitat of Yesterday, Today and Tomorrow along the Colorado River in Grand Canyon

Baseline inventories provide the foundation for long-term monitoring programs and research studies. Campsite inventories along the Colorado River—the area that Grand Canyon Monitoring and Research Center (GCMRC) scientists refer to as the Colorado River ecosystem (CRE)—were first conducted in 1973 (Weeden and others, 1975) and were repeated in 1984 (Brian and Thomas, 1984). The last comprehensive campsite inventory was completed fifteen years ago in 1991 (Kearsley and Warren, 1993). The 1991 inventory showed a significant decline in number and size of campsites compared with previous inventories (Kaplinski and others, 2003). Since that time, many of the camps identified during the 1991 survey have fallen into disuse or disappeared entirely because of sandbar changes and vegetation encroachment, while some new ones have emerged. A new inventory is needed to evaluate changes in the CRE during the past two decades, to document the current number, size, and distribution of campsites throughout the CRE, and to provide an up-to-date baseline inventory for designing future studies.

In fall 2006, GCMRC staff and NPS recreation staff began the process of updating the CRE campsite inventory with the eventual aim of developing an electronic, GIS-based atlas of all previously used and currently available campsites in the CRE. In addition to documenting the spatial extent of areas that NPS would like to manage as campsites in the future, the atlas will eventually include a wide array of information on campsite characteristics and attributes that are known to be important to visitors and commercial guides (e.g., physical size, estimated size of group that can be reasonably accommodated, amount of open sand versus vegetation, availability of shade, mooring attributes, etc.).

The atlas database will serve as both a current baseline and a historical repository of information related to individual camps. It will define the population of campsites from which samples can be drawn to characterize system-wide changes, and it will serve as a basis for evaluating recreation impacts on other CRE resources of concern such as archaeological sites. This atlas will also serve as the central repository for all campsite data collected during future inventory and monitoring projects, and will include links to Adopt-a-Beach photos, the sand bar survey data collected by Northern Arizona University geologists (Hazel and others, 1999, 2006; Kaplinksi and others, 2005), and related projects.

This project is being undertaken by GCMRC in close cooperation with the recreation planning staff from Grand Canyon National Park. In addition to meeting needs of the Glen Canyon Dam Adaptive Management Program, data from this project will be helpful to the National Park Service as they develop implementation plans and resource monitoring projects tied to the Colorado River Management Plan. Because the NPS has immediate need for some campsite data, we are focusing initially on documenting the 200 plus most commonly used camps, but in the next phase, we will be documenting the less frequently used sites, as well as former sites that are no longer campable.

So what does this mean for the river guide community? Why should you care?

In the near future:

- We may be requesting some of you (particularly those with silver hair) to help us identify camps that once were but are no longer used.
- As we ground truth the atlas data, you may be approached on occasion by someone asking to walk around the area where you are already happily encamped. We just wanted to let you know what we are up to in advance, and let you know that you always have the option to "just say no".

In the far future (but hopefully not much beyond the end of 2008):

- We plan to make the atlas available to the public through the GCMRC website. We will let you know of its availability through the *Boatman's Quarterly Review* and other outlets.

In the meantime, if you have photos or other types of data that are specific to particular camps that you think would be valuable to add to the atlas, please let us know. If you have questions, comments or would like additional information about this project, please feel free to contact me at the following address, or contact Linda Jalbert, Outdoor Recreation Planner and Wilderness Coordinator, at Grand Canyon National Park. Thank you for your interest!

Helen Fairley

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Stanton Finds the Original Powell Journal

In an attempt to rectify the discrepancies reported in 1875 by John Wesley Powell in *The Exploration of the Colorado River of the West and Its Tributaries* with personal observations upon the Green and Colorado rivers in 1889 and 1890, Robert Brewster Stanton continued his search for Major Powell's original journal. Fortunately for historians and archivists, Stanton persevered and prevailed. The following is from *Colorado River Controversies* (116-119), published posthumously in 1932 (New York: Dodd, Mead & Company; reprinted, Boulder City, Nev.: Westwater Books, 1982).

"It has always been supposed by some of us that naturally Major Powell had kept in the field a detailed record of his memorable journey down the Green and Colorado rivers in 1869." Stanton had followed many dead end leads; William Henry Holmes, Chief of the Bureau of American Ethnology, introduced Stanton to Mary C. Clark, Powell's former secretary. "She had never seen or heard of any diary or journal or notes kept by Major Powell in 1869," but promised "to make a thorough search through all the papers in his office"… "Finally Miss Clark informed me that she had searched everywhere, through the Major's desk, book shelves, in every safe, closet, and cubbyhole in the office, that she had found nothing, and that she did not believe any such records existed"… "On April 18th [1907], Miss Clark remarked: 'By the way, over there in the corner under that old desk, which has not been used for years, are two or three bundles of old papers'" … "The dust and cobwebs of years did not stop me. I took off my coat, rolled up my sleeves, and got to work with a feather duster. I opened the bundles and spread out their contents on the floor of Major Powell's old office. Almost the first thing I laid my eyes upon was the long-lost, long-sought-for *Journal of the Exploration of* 1869, in Major Powell's own hand writing—the original itself!"

Richard Quartaroli

Perspectives on the GTS

Everyone takes something different away from the Guides Training Seminar (GTS) Land Session—fascinating information, funny stories, new friends, and special moments. We offer you just a smattering of these perspectives from some of this year's attendees that represent the wonderfully diverse crowd that joined us in Marble Canyon. We are especially proud to say that the crowd topped out at around 175 people, with an incredibly high percentage of working guides. In fact, those numbers were the highest in the last eight years! Great speakers, attentive audience, fabulous food, totally rockin' band, and gorgeous spring weather…what more could you ask for!

This year's GTS was the best yet. Most dynamic speakers that had the most pertinent info. Well attended by both old guides and new guides and a great party to boot. And you can quote me on that.

Glenn Rink

* * *

Congratulations on another successful GTS land session. I have participated in over a dozen sessions in the past several years, and find this an excellent opportunity to interact with the guiding community on a personal and professional level. I enjoy the blend of management, science, history, and general interest topics. The NPS folks appreciate the GCRG's support and input on the development and implementation of the new Colorado River Management Plan as well as the contributions to the Adaptive Management Program.

Linda Jalbert
(Planner/Wilderness Coordinator GCNP)

* * *

This was my second GTS and it was every bit as informative as the first. Hard to believe that the Canyon attracts such a wide variety of experts, from hydrology to geology to h-i-s-t-o-r-y

I was not a huge fan of history when I was in school, but if the history teachers had been Brad Dimock and Tom Myers I would have made it my major! We all know a bit of the James White story, but Brad and Tom took that story, dissected it, turned it inside out, exposed the flaws and brought it to life. Then they made it funny and entertaining to boot. If there had been an admission fee for this presentation I would have gladly paid double.

Geoff Carpenter says each lizard species has a distinctive push-up/display pattern. Who knew? Not only that, but he's got me primed to hunt for lizard tracks and chuckwalla poop on my next river trip. Can there be a loftier goal in Grand Canyon than to photograph lizard tracks and reptilian feces?

Finally, the plant ladies. Two years in a row at the GTS I was brought back in time to high school pep rallies with the band and cheerleaders and pom-poms. That's what the plant ladies are like when they talk about their Canyon plants, and they make me want to stand up and cheer when it is all over! Their enthusiasm is contagious.

Mari Carlos

* * *

Ya'at'eeh,

This was my first attendance at the GTS land session at the Hatch warehouse. I was impressed with the range of topics that were covered throughout the first day. I enjoyed the booths that had books and information about their respective organizations available to the attendees. I met people that I otherwise would've just waved at in passing while on the river, and was able to get to know them. It was a great time to socialize and network while getting valuable information. I enjoyed all the presentations but I was thoroughly impressed and happy to hear Shana Watahomogie and Charley Bullets speak about their culture and how they hold the river and canyon culturally significant. I believe it's important to hear about the local tribal cultures first hand and offer them the opportunity to speak to an audience that is sincerely interested and respectful of the river and canyon so they can pass it on to their colleagues and passengers. This is something that should be included and emphasized in every GTS land session. Next year, I would advise including the Navajo, Hualapai, the San Juan Paiute, and other tribes.

Additionally, I appreciated the opportunity to advertise and give out information about the Native American Guide Training Program as I presented it to the audience and discussed it with numerous folks who came up to me afterwards. After that day, the number of participants interested doubled due to the help of numerous folks who spread the word through word of mouth, by flyers, and the internet. Thank you!

Nikki Cooley

Special thanks for this year's GTS goes to:

- Hatch River Expeditions—thanks Ted, Steve, and Sarah for giving the GTS a home once again!
- Our wonderful funders—the Grand Canyon Conservation Fund (a non-profit, grant making organization created and managed by the Grand Canyon river outfitters), The Grand Canyon Association, The Arizona Humanities Council, and Teva.
- The fabulous speakers—we're not just saying that, because they really were exceptional. The audience was so focused that not even the beautiful weather could pry them from their seats!
- All the Grand Canyon commercial river outfitters—thanks for urging your guides to come. What a superb learning experience it was for everyone.
- Grand Canyon National Park and Superintendent Steve Martin—we are so appreciative that the new superintendent took the time to come and introduce himself to the guide community. Welcome Superintendent Martin!
- The Whale Foundation Health Fair—for providing such an important service to the guide community.
- Simone Sellin and her fabulous cook crew—thank you for all the scrumptious eats!
- Mogollon Brewery, Cork N' Bottle, and Toucanet Coffee—necessary beverages!
- The vendors—from pro-deals, to book deals, to information on a variety of organizations, there was something for everyone.
- Jared Weaver and Geoff Carpenter—these guys handcrafted the most beautiful and functional fire boxes imaginable, with one each for GCRG, the Whale Foundation and Grand Canyon Youth. Our spontaneous raffle gained us $500!
- All super GTS volunteers—you know who you are and we couldn't have done it without you.
- All attendees—come again next year and bring along your fellow guides for the 20TH anniversary of GCRG and the 25TH anniversary of the 1983 flood! It may be the best yet!

Photos: Dan Dierker

Hopi Perspectives and the GTS River Trip

Receiving an offer to be a speaker on the 2007 Guide Training Seminar river trip was great news for me. As a Hopi archaeologist (but by no means an expert), I was invited on the trip to provide insight about Hopi culture and our history and ties to the Grand Canyon. I spent the few weeks prior to the trip getting my thoughts of the canyon into what I hoped would be "organized" presentations for those on the trip, 24 of us in all.

However, getting my thoughts in order proved harder than I thought. To begin with, how does one condense thousands of years of Hopi history and traditions within the canyon into twenty-minute presentations? For Hopi people, our physical and spiritual connections to the canyon (and the greater Southwest for that matter) encompasses countless generations of ancestry, each one passing their survival skills and cultural knowledge to succeeding generations. In this manner, Hopi ancestors (*Hisat'sinom* or People of Long Ago) were able to sustain themselves and thrive in the sometimes harsh landscape of the canyon.

As one of the first indigenous groups to occupy the Colorado Plateau, Hopi connections to the Canyon are long and complex. The science of archaeology states that human presence in the canyon stretches back five-, ten-, fifteen-thousand years. Yet to most Hopi people these numbers, while impressive, are arbitrary. For us, it is enough to know that our ancestors were the first to call the canyon home. They were the first to explore and experience the uniqueness of the river, the plants, the animals, indeed the spirit of this place.

Hopi tradition states that it was in the Canyon that our prehistoric ancestors emerged into this, the fourth world, after leaving behind three previous worlds in search of a better way of life. After emerging into this world, we were greeted by Masaaw, the original caretaker of this world. He instructed Hopi ancestors to embark on a series of migrations to the four corners of the earth. Through these migrations, Hopi ancestors would earn the knowledge necessary to survive and prosper in this new world.

As a part of these migrations, Hopi ancestors were also instructed to leave their "footprints" upon the landscape. These "footprints" would show that the various Hopi clans had faithfully followed their instructions to travel the landscape, learning the values of stewardship and the ethics of hard work. Today, these "footprints" are what archaeologists refer to as artifacts; ceramics, lithics, textiles, rock art, ruins and the burials of Hopi ancestors. In essence, the remnants of Hopi ancestors became our history, written so to speak upon the landscape that we have called home since time immemorial. They are tangible reminders to our ancestor's prehistoric occupation within the canyon and the Southwest.

But this of course is the ultra-condensed version of Hopi perspectives concerning our ancestral history. So imagine my struggle when I had to give my first real presentation to the group. Up until then I had been getting to know the others on the trip, which included scientists, boatmen, cowboys, indians, musicians, a few modern day savages, and people from all walks of life. When the time came to be "formal" about it, my mind raced through a checklist of "what I should say, what I shouldn't say." At that moment, I decided to indulge in the first rule of the river: go with the flow. So I ditched my mental checklist and decided to do this on the spot, off the top of my head, with no preconceived expectations.

Such would be the rule for the rest of the trip. In the days that followed, I talked to whoever would listen, sometimes a little about the cultural, somewhat "touristy" information, but also about the modern Hopi perspectives towards the scientific and ecological management of the canyon and river. In those moments, on the beach or in a boat, I tried my best to convey what the canyon means to Hopi people and the values learned there. During our stop at the LCR, one of the boatmen asked me a question that helped me get to the gist of what I was trying to say. He asked about a suggested "limits of behavior" by commercial and private passengers at such a sacred Hopi place.

In Hopi culture, the LCR and the surrounding landscape are considered to be especially sensitive and sacred areas of the canyon. That is because the point of Hopi emergence into the fourth world is located along the LCR and the Hopi Salt Mines are located a few miles downriver. These locations hold central places within Hopi traditions and are integral to Hopi religious societies that are still carrying out their ceremonial responsibilities. Historical pilgrimages to these places required much spiritual and physical preparation and prayer, things not taken lightly in Hopi culture.

My dilemma was figuring out how to convey that kind of information so that those I spoke to could understand the importance of these places to Hopi people. I struggled with the boatman's question but responded that Hopi people, like all those who venture into the canyon, view those experiences through their own beliefs and values. For Hopi people, this means understanding that these places remain viable, living parts of our cultural traditions. They are as real as a church, a synagogue, or temple and are given that same level of respect by Hopi culture.

At a general level, what I was trying to convey to

the group was that the Hopi "mission" wasn't to impose our beliefs and values on others, but merely to impart our experiences of these places in the spirit of respectful learning. That, I figured, was my real purpose of being on the trip. It wasn't so much to "educate," but to share what I knew, in the hopes that the group could come to their own conclusions about the information I gave, and decide how they in turn share that with others.

Throughout human history, the Canyon and the River have often been viewed as obstacles to get through, over and around; a divider. But more often than not, the opposite occurs on the river, which is to bring seemingly different people together in unexpected ways. In the beginning of the trip, we each represented some "group," maybe it was a company, a profession, an ethnicity, or way of life. Yet though our time on the river, we became one group, learning and sharing from one another. Such was the lesson.

At Phantom Ranch, it was the end of the ride for me. Bittersweet as it was, I left with 23 new friends with whom I will forever have this experience in common. I would like to thank all those who facilitated and made this trip possible, from the organizers and companies, to those I traveled with. In the end, I hope that I gave as much to them, as they were able to give to me.

Kwah-Kway (Thank You).

Lyle Balenquah

Lyle Balenquah has been a professional archaeologist working in the Southwest for over ten years. He is a member of the Third Mesa Greasewood Clan from the Village of Paaqavi (Reed Springs) on the Hopi Reservation.

GTS River Trip Snapshots

Photos: Greg Woodall

Your Celestial Friends

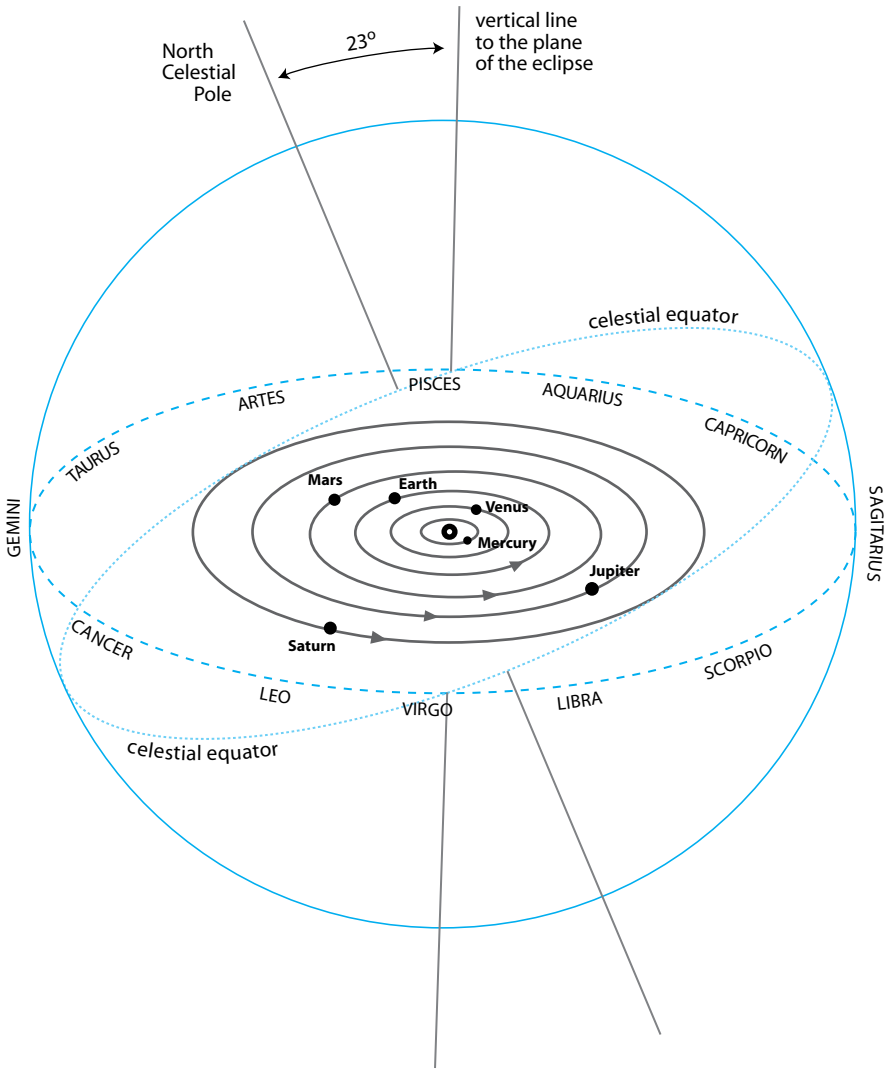
As a Grand Canyon enthusiast, you are most likely a frequent admirer of the night sky. Perhaps you wish to better understand the heavens above, and the relationships different celestial bodies have to one another. We covered the basics of these "celestial mechanics" in the winter article (BQR 19:4), and today we will go a step further, exploring the wonders of our solar system's planets.

The word planet is Greek for "wanderer," and indeed these reflective bodies move about the celestial map, holding no fixed positions. But their movement is precise and predictable, and can be charted along a specific plane of (or circle around) the celestial sphere. This plane is called the ecliptic.

The ecliptic can perhaps best be visualized from an "above" perspective, using the attached diagram. The planets revolve around the sun on an almost flat plane, so that, as seen from Earth in the night sky, all the planets lie within a straight line. Project this plane outward onto the celestial sphere, and it aligns with the constellations forming the band of the zodiac, (which, for purposes of clarity, are the only ones represented on this diagram.)

Place yourself now on planet Earth in this diagram, and imagine yourself looking outward toward the other planets. Each of them is either blocked by the sun or falling in line with a zodiacal constellation. This is a constant of the night sky: the planets will only be seen within the constellations of the zodiac.

As we revolve around the sun in a year's time, the sun's position also falls along the ecliptic, spending approximately one month "in" each of the zodiacal constellations. Because Earth is tilted 23 degrees to the axis of its orbit, the celestial equator is offset 23 degrees from the ecliptic. There are, then, two points on the celestial sphere at which these circles converge, above which the ecliptic is in the northern celestial hemisphere, and below, the southern. (As an interesting side note to our planetary lesson, these two points of convergence are the vernal and autumnal equinoxes. Which is to say, on March 21, the sun lies directly between Earth and the point of convergence in line with the constellation Pisces, and on September 23, the same is true for the point in Virgo.) The offset of these two planes governs where the ecliptical constellations rise and set on our horizon, and the band they trace across the celestial sphere.



This drawing illustrates the relationships between the celestial equator, the ecliptic, the zodiacal constellations, the planets' orbits around the sun, and how we chart them along the larger circle—the celestial sphere. (Adapted from Rey, p.119 & p.131.)

The planets fall into two categories: inner and outer. The inner planets are Mercury and Venus, which orbit the sun in 58 and 243 Earth-days, respectively. The outer planets are Mars, Jupiter and Saturn, whose orbital periods are 1.9, 11.9, and 29.5 Earth-years, respectively. This information is important in understanding the relative speed at which they move across our night sky. (Uranus and Neptune are not visible to the naked eye, nor is Pluto, which recently lost its planetary designation.)

An inner planet will only be seen close to the sun, meaning: for a short while after sunset, chasing the sun below the horizon; or, rising shortly before dawn, the sun chasing it, along the ecliptic, above the horizon. We will explain this using the hypothetical positioning of the planets on our model diagram, in which Earth is in late fall season, its southern axis not yet pointing directly at the sun.

As shown in the diagram, Mercury is positioned behind the sun and therefore not visible. Venus would be the "evening star," (since Earth is rotating daily on its axis from east to west,) visible just after sunset in the constellation Sagittarius. Because Venus moves more quickly around the sun than does Earth, in short time it would move lower and lower on the western horizon, until it moved between the Earth and sun and was visible no more. This, of course, until it moved far enough around the sun (in about three months time,) ahead of Earth, to become visible in the eastern sky before dawn, the "morning star." Mercury follows the same pattern, though on a much faster time scale because of its shorter year.

Outer planets can be seen away from the horizon, throughout the night, as they do not travel between Earth and the sun. In our drawing Mars falls in line with Taurus, visible high in the ecliptic throughout the night. Orbiting at about half the speed of Earth, it would slowly move east along the zodiac in the weeks to come, until Earth "overtook" it in its orbit. At the point of overtaking, Mars would be said to be in "opposition," meaning directly opposite the sun from Earth. After this point its "retrograde motion" would begin, a term which refers to an outer planet's apparent reversal in direction across the sky once it is overtaken. Finally in our model, Jupiter would be obscured by the sun, and Saturn would rise late at night in Leo.

These are the basics to understanding why we see the planets, when and where we do. In fairness, you could forego the above information, and still easily identify planets in the night sky with a few simple tools, particularly if you are well acquainted with the stars. A monthly sky chart can help you with this acquaintance, and I prefer to use the excellent book *The National Audubon Society Field Guide to the Night Sky*, which presents this information clearly. For planetary identification two additional tools (also found in this and other guide books,) are essential: a map of the zodiac and a current planetary chart.

A map of the zodiac is simply a sky chart which shows only the zodiacal constellations, (and those in their immediate surroundings,) and their corresponding longitudes. The celestial latitude of the ecliptic varies by only 23 degrees above and below the celestial equator, but along that latitudinal path the planets move through every degree of longitude, from zero degrees to 360 degrees. Every constellation has a fixed coordinate on the celestial sphere; it is only their longitudes which we use in conjunction with a planetary chart.

A planetary chart is simple. It is arranged in a grid with the left-side column listing dates throughout a given year, in two week increments. The planets are listed individually across the top row, and the columns descending from them list their longitudes at each given date. So, you might see that on July 1st, 2007, Jupiter will be at 255 degree longitude. Turn to your zodiac chart to find that 255 degree longitude lies within the constellation Scorpio, as indeed it does. And indeed, we will be delighted with its appearance there for much of this summer!

It is difficult to assimilate all this information, but with years of intimate acquaintance the heavens above can become our familiar companion. It is much like learning Grand Canyon geology—overwhelming at first-but in time the "layer-cake" Paleozoic rocks become so familiar that the fault lines, travertine, lava dams, slumps, and countless other variants begin to come alive. The sky, however, holds the distinct advantage of being always with us. We spend our entire lives under the watchful eyes of these constant, luminous orbiting bodies. Whether we know them or not is up to us!

Next issue: meteor showers, comets, galaxies, and more!

Teddy Anderson

References:

Rey, H. A., *The Stars, A New Way to See Them*. Houghton Mifflin Company, Boston, 1952.

Grand Wash Guardians — Erica Fareio

Books and Music

Glen Canyon Betrayed, A Sensuous Elegy
BY KATIE LEE

OPENING THIS BOOK IS LIKE dropping into the Havasu boat harbor and joining friends and PLU's (People Like Us) for a round of river yarning. You might also turn back the calendar a few years, tie the boat a few miles away, shift a few rock layers up or down the stratigraphic sequence, but the effect would be roughly the same. The conversation meanders through rapids, side canyons, clients, crew, practical jokes, politics, food, drink, cliff hangers, flash floods, historic events, and more. Reputations are polished, tarnished, sometimes corroded.

> "At Redbud, I'm filling my canteen at the falls when a canyon wren lights on my head and gives me the whole verse, bridge, and chorus, with a coda. Gawdamighty? How many people know what it's like to have a canyon wren (or any wild bird) light on their head and sing an aria for them?"

Katie's experiences with songwriting and the performing arts shine through her well organized and palatable writing. In the first part she chronicles her introduction to river running and describes her performing life. Alternating between journals, commentary, and conversations, the second part explains her growing attachment to the river and especially Glen Canyon. "The Wild Secret Heart" is the section devoted to descriptions of three autumn "We Three" trips down the Glen with just Katie, Frank Wright, and Tad Nichols. "Yet, it has taken only three days with friends who can sense when and where not to talk to know that the quiet communion, the intimacy this canyon is offering me, will be lost if I go on letting strangers interfere with my purpose for coming here: To learn what nature has to say." The last few chapters are devoted to the events, disbelief, and outrage associated with the fluid burial of Glen Canyon by "Lake Foul."

Sprinkled throughout the book are encounters with well known historic river runners, Katie's song lyrics, naughty language, strong opinions, black and white photos. Her sense of outrage is persistent and infectious; get out your checkbook and some paper and do some writing of your own to bring the Glen back. You can order this gem of a book from Fretwater Press at www.fretwater.com.

Liz Hymans

Condors in Canyon Country: The Return of the California Condor to the Grand Canyon Region
BY SOPHIE A. H. OSBORN

SOPHIE A. H. OSBORN'S groundbreaking book, *Condors in Canyon Country*, tells the tragic but ultimately triumphant story of the condors of the Grand Canyon region. The book's kaleidoscopic photographs of these huge birds flying free over the Southwest are nearly as breathtaking as seeing California condors live. *Condors in Canyon Country* is a must-read for anyone passionate about endangered species and what humankind can do to save them.

You can purchase the book from the Grand Canyon Association at www.grandcanyon.org.

- Hardcover: ISBN-10: 0-938216-87-2; ISBN-13: 978-0-038216-87-2; 160 pages $29.95; 9 1/2 x 9 inches.
- Softcover: ISBN-10: 0-938216-98-8; ISBN-13: 978-0-038216-98-8; 160 pages $18.95; 9 1/2 x 9 inches.

Katie Lee, at 87, is not slowing down. She just published the 296-page book "Glen Canyon Betrayed, A Sensuous Elegy, and Love Song to Glen Canyon," and a half-hour DVD of her magnificent photographs of Glen Canyon with commentary and song.

To purchase Katie Lee's music and DVDs contact Katydid Books & Music, Box 395, Jerome, AZ 86331; (928) 634-8075.

Match Made in Moonlight — Erica Fareio

The Crystal Ball — Erica Fareio

Back of the Boat—
The Whale Foundation News Bulletin

Health Fair at the GTS

On March 31, more than 65 brave souls took advantage of their lunch break at the GTS. They ran the gauntlet at our 4th annual Whale Foundation Health Fair. Originally conceived by Dr. Tom Myers, the Health Fair offers free screening for various potential problems including; cardiovascular issues, skin cancer, colon cancer, breast cancer, prostate cancer, oral and dental health, diabetes, depression issues and physical therapy advice. Vouchers for blood tests and mammograms were given out and the results will be forwarded to the guides that participated.

This year's Health Fair was located in two EZ-Ups poised outside the Hatchland's warehouse. Special thanks go to Wyatt Woodard, FNP and Alan Motter, FNP for organizing this year's Fair and a special round of applause to all the health care providers who volunteered their time and expertise: Dr. Rich Haag; Susan Hamilton-Gourley, RN; Dr. Karl Bigler; Kelly Rowell, PT; Jessica Pope; as well as Terri Merz, MFT. We also thank Hatch River Expeditions, Sonora Quests Medical Lab, Northern Arizona Radiology, Optimists International of Flagstaff, and the Sedona Cancer Center for their various contributions to this worthwhile effort. We'll be back next year!

Scholarship Application Update

For those guides interested in applying for a Whale Foundation scholarship, we will include two grant cycles in 2007. Our deadlines are June 1, 2007 for fall and December 1, 2007 for spring scholarships. Please download the application from our website (www.whalefoundation.org). Our grantees are selected in a "blind" application process.

Leadership Skills for Your Toolbox Workshop

This workshop with our Health Services Committee, Betsy Kerr and George Breed has been rescheduled for Saturday, November 3. Mark your calendars and stay tuned.

Whale Foundation Board of Director

The Whale Foundation welcomed Lisa Lamberson and Dan Dierker to our Board of Directors recently; we want to thank them for donating their time and talents in support of our river family. If you are interested in volunteering for the Board or in other capacities, please give us a call at 928-774-9440. We look forward to hearing from you!

The Whale Foundation
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Toll Free Help Line: 1-866-773-0773
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Photo: Dan Dierker

Holes to Heaven — Erica Fareio

Julie Munger

I'm one of the…how many of us are there? There are so many of us who had our first river trip in the Grand Canyon with our parents, I think, who eventually became Grand Canyon guides. At least I know so many guides I've worked with where that's the case. So, my first river trip was a Sanderson motor trip in 1977 and Schmedley…do you remember Schmedley? He's the boatman I remember most vividly because he had such a dynamic personality. But no, it was just one of those magic motor trips where it was all families and kids and all the kids would hang out and cause trouble and all the adults would hang out with Schmedley at night and get drunk and have no idea what their kids were doing. (laughter) [Steiger: Didn't care!] Didn't care. So you know, we hiked a lot and that definitely…we hiked during the day and slept on the boats at night. The motor boatmen let all the kids sleep on one boat and they slept on the other boat. So that definitely started us…

Steiger: The boatmen let the kids sleep on the motor boat?!!

Munger: Can you believe it? They were really young, the other boatmen. Must've been. Yeah, there were at least two nights where all of us—we were all between thirteen and seventeen—we all slept on the motor boats for a couple nights.

Steiger: Oh man. That must have been so cool!

Munger: It was really cool. So it was a great introduction, and it was a very adventurous trip because we had a guy on there who went psycho and was chasing the boatmen with a knife and ended up getting tranquilized and flown out at Nankoweap. So that was an interesting juncture in the trip. But dealing with that brought everybody closer, especially as a group, so it was a very impactful first river trip. I was fifteen.

And then from there, the next couple of summers my dad started to teach me to row and I learned how to kayak right after that trip. I mean it definitely instilled a passion. Although I have to tell you I was terrified of the water. I probably took longer to learn how to kayak and river guide than anybody I've ever known. Because I was absolutely terrified of the water. It took me a very long time to do anything more than Class Two, especially in a kayak…You know my mom had almost drowned when she was pregnant with me 'cause my dad had taken her canoeing on some crazy Class Two section. So I don't know if there's anything true to that—imprinting. But I was terrified, especially in a kayak. I was always much better in a raft. I liked being in a raft. And learning how to row I felt like I had a lot more control.

Steiger: Was your mom scared of the water?

Munger: Uh-huh. She was terrified of the water too. Because of that experience, yeah. 'Cause my dad tried to drown her.

Steiger: Maybe that factored into their divorce!! (laughter)

Munger: Maybe. It probably wasn't a very good start. Yeah. So…so we did the Middle Fork of the Salmon. I mean we did a ten-day family trip with my dad and his new wife and one of her kids and my brother and I. And then we did the Tuolomne River in California a bunch before I got to college. Then when I got to college I needed a summer job. I started river guiding. But my attraction to whitewater was actually more where rivers go than whitewater itself in the beginning. It was like, I loved being outside. I loved camping. I loved being in the woods. And "rivers" were the most… rivers go to beautiful places, incredible places. So that was my incentive in the beginning, was just being transported to wild places. And then over the next years I definitely developed a passion for whitewater too, but that took a long time.

* * *

A passion indeed. Julie Munger has run rivers professionally all over the world—from Borneo to Russia to the Futaleafu in Chile…and got the job done using all manner of cockamamie watercraft (ask her someday about that trip in Russia where they had cataraft tubes that were rubber bladders sewn into outer shells made from old car convertible tops, held together by frames of fresh-cut saplings lashed with ropes—the trip where the thirty dollar an hour military helicopter dropped them off two tributaries away from the river they were supposed to be on…). She's been working in the Grand Canyon since the early '90s with azra *and CanEx, among others.*

This interview took place at the CanEx warehouse April 7, 2007. In it, we ended up focussing our attention on a particular trip she did, on one of the most remarkable crafts ever.

* * *

I grew up outside pretty much my whole life, and my first passion outdoors was horses. Did a lot of competitive trail riding and cross country endurance riding. But all the way through growing up as a kid I saw pictures of my dad kayaking, and some of my first memories were of being pushed out in an eddy—at the end of a long throw bag in a kayak—out into an eddy. So even though my first river trip wasn't until I was fifteen, I was always very aware of the river and kayaking. But very much a land based person as a kid.

Maynard Munger running Cottonwood Rapid on the Arkansas River on his way to third place in the International Kayak Slalom and Downriver Race, June 1960. Start to finish—26 miles.

STEIGER: What was up with your dad and rivers?

MUNGER: He learned how to kayak in the service over in Germany in the '50s and then they actually saw how they were building kayaks in Germany and came back and made their own molds and started building kayaks in California in the early '50s. You know he was on a trip with Georgie White before they filled Glen Canyon that went from Green River all the way through Glen Canyon and Grand Canyon. So he—you know especially before he got married and had kids—was an avid river runner. Maynard Munger.

STEIGER: What did he do for a living?

MUNGER: The funny part…he was actually Lou Elliott's first safety kayaker, when he did his first commercial trip ever, on the Columbia River in Canada, I think. At that point they were just starting getting commercial river running going. But he decided, since he'd got married and his wife got pregnant relatively soon after, that a more responsible route would be to go into real estate. So he had actually—he and Bryce Whitmore, who started Wilderness Waterways, were best friends; and when Bryce Whitmore started Wilderness Waterways, my dad almost went that way, and then went the other way, and got into real estate. So he was a real estate broker for his whole life. [STEIGER: And just boated for fun.] And boated for fun. [STEIGER: Lucky for him!…and how old were you in the kayak, at the end of the throw bag?] Oh, like one, two, three. 'Cause he was competitive racing. He went to the Kayak Slalom World Chamionships in '62, which was the year I was born. So he was still racing slalom when I was a baby…I spent a lot of time with him and then a lot of time with my mom on horses. I actually never got in the water on a river until I was fifteen…there was a long section of time I'd say, from the time I was like five until I was fifteen, that I wasn't around rivers at all.

* * *

STEIGER: You started out rowing on the Tuolomne?

MUNGER: Yeah. You know, I got into boating, in my opinion, in the magical time—in that time frame before self-bailing rafts. So I was comfortable in Class Four, which was a kind of a bigger deal then because the rafts

weren't self-bailing. I started working on the Tuolomne for Sierra Mac right in the transition time. I was running little fourteen-foot Adventurers down the Tuolomne and then Sierra Mac was also the only company that was running Cherry Creek, which was Class Five at that time. We were running it on pontoon rafts—those big old Huck Finn type pontoon rafts—and I was a high-sider. So I was becoming comfortable with bigger water and then self-bailing rafts came. It was just a great time to be a paddle guide.

STEIGER: A pontoon raft is like an early cataraft?

MUNGER: Uh-huh. But instead of just having two tubes it had four tubes lashed together. [STEIGER: Just to get around the bailing thing?] Yeah, and that's how Marty Mac and Wilderness Waterways, Bryce Whitmore and Marty, those were the boats they designed. And they were incredible boats—just tubes strapped right to each other and then the gear fits in between the tubes and is strapped down and the people sit in front, so the boatman is in the back in the middle and then all the gear right in front of the boatman and then the people are in the front of that.

Photo: Julie Munger collection

Rowing for Sierra Mac on the Tuolumne, 1986.

STEIGER: And are the tubes unbroken? You're sitting on top of the tubes? MUNGER: They're laced together. So they're four individual cataraft tubes with grommets all the way around and all laced together. Yeah, with a big, kind of steel frame and you had to make your own seat out of some kind of box that you'd rig, as a guide, that you had to figure out how to strap down on the back of the cataraft to row from. …Yeah, you're right on top, just like an old Huck Finn raft… They're incredible. They're really manueverable and fast. And if somebody's on top of there that can high-side you can take them just about anywhere. They track really well. And that was another thing that was helpful in my boating career was learning how to row those boats, because you always had to use your load to push you where you wanted to go. So it was all downstream ferries. Which is often a hard time that low water boaters have switching to high water, is learning how to do downstream ferries. Well that's all you could do with those Huck Finns. Everything was downstream ferries. You had to get the load to push you where you wanted to go. You can never do an upstream ferry because the load would be tracking you downstream. So it was a great way to learn how to row, from the very beginning.

STEIGER: And your load…I guess your load was mainly the people up there? That's where all your weight was?

MUNGER: Uh-huh. Right off the front. Their feet would almost be hanging in the water. They'd be sitting in the front and the boxes would kind of be laying on their sides on the tube and then their personal gear would go in these big long black bags that you basically tie off like you were tying off a goat's foot, with clove hitches. You just lash them together and tighten them and then rig that over the top of your coolers and boxes, and that would be the padding and it would be their backrest. So it was like being on a couch, and so much fun for people because all four people are sitting right in the front looking at the whitewater, and the whitewater is coming right in their face the whole time. So those boats were really ingenious.

STEIGER: How would you describe the Tuolomne to somebody who just grew up on the Grand Canyon? It's markedly different, isn't it?

MUNGER: It is. It's a much smaller river bed. A low flow on the Tuolumne is a thousand CFS [cubic feet per second]. Three or four thousand is medium, and then anything above four thousand started to get high… so a lot lower, tighter, narrower, just quicker. Lot of maneuvering. Million rocks. Bigger drops. I think the gradient on the lower Tuolomne is about 65 or seventy feet a mile. So, just continuous rapids. Really a lot of fun. Not a whole lot of slow water. Pool-drop, but the pools weren't very long before the next drop. And of course every river has to have its, you know, Lava Falls…and Clavey Falls was always the big rapid cause it was a rapid where you'd go over a really steep fifteen-foot ramped drop, with all the current racing towards a wall and you had to make a move to miss a big hole. So it was always an exciting part of the trip. But just really beautiful, all granite, very safe river, beautiful side creeks to swim in and just…short…eighteen miles was the run on the Tuolomne. One, two and mostly three days. Working for Sierra Mac at that time we did mostly three-day trips. So that was great.

"River Runner" July, 1986.

Steiger: So where'd it go from there?

Munger: Well, I was in college during that time and I was studying international relations and so, of course I wanted to be an international river guide. So right when self-bailers came out, some friends of mine and I started an all women's exploratory team. 'Cause there were a lot of rivers that had been kayaked in California at that time but hadn't been rafted. So we just started running these rivers just for fun in the middle of nowhere. It was really a great time. There were six of us and we'd just take one boat, which of course isn't, you know, the safest, now that I teach Swiftwater Rescue. But it was adventurous, it was going into remote beautiful canyons, it was right up my alley and a way to get there and explore them. So we started doing that. At that time we were figuring out how to run paddle-boats anyway on Class Five on the upper Tuolomne and so I was getting a lot of experience in steeper water. And what really changed my career was, we took our raft over a 22- foot waterfall and there happened to be a photographer there and we got on the cover of *River Runner* magazine and then we got to go do an exploratory in Borneo with Richard Bangs for Sobek with the Dayaks, and that's what kind of launched my international… viability, to be able to do international trips, was that whole thing. Just kind of a freak—one thing leads to another. And then I just, I mean I worked as a river guide for 25 years so that's a lot of years of playing around, but after that I started to work for Steve Curry Expeditions. I got a lot of opportunities because there weren't a lot of people who were paddle guiding at that time.

Steiger: So, why an all women's paddle team? Also, for the humanities angle, just, what has it been like to be a woman in this river running world?

Munger: I think the "being a woman" question was easy to overlook. While I am a "woman," when I am boating, I am a "river runner." I feel as if I have always been treated as a part of the crew and judged by my abilty to do the job. I was never hired because I was someone's girlfriend. I have always taken my boating and guiding skills seriously and considered myself a professional. I boated a lot of really scary rivers and the important thing was who you could rely on. I worked with very few other women in the early days and never thought much about it. There just weren't as many women around that were passionate about working in the places I worked.

Beth Rypins and I started this "All Women's Exploratory" team in 1986 to start running rivers that had not been run by rafts because we thought it would be fun, that we could get more sponsorship with the novelty of all women, and because we were both working with all men in our respective companies at that time. We grabbed as many women as we could and started going

off on these one boat exploratories. I was doing a lot of guiding on the Upper Tuolomne (Cherry Creek) at the time and we had developed really good paddle boat techniques, including fast portaging and scouting, that made our attempts possible. It was good fun for us and a novelty at the same time.

STEIGER: Where'd you work for Steve Curry?

MUNGER: I started on the Bio-Bio in Chile and worked about six seasons there and then, you know, we'd do the circuit: the Bio-Bio and then…Tibet or Nepal in the fall. Well, the Bio-Bio in the winter and then I'd work either the Grand Canyon or Alaska in the summer for awhile. So my career kind of went all over the place. I worked in Idaho for awhile.

STEIGER: So Grand Canyon would be just like a couple trips a year kind of thing?

MUNGER: Well I started in Grand Canyon I think in '94 or '95, right at the end of the Bio-Bio heyday…so I worked for AZRA full-time for seven or eight years.

STEIGER: But you were a full-time guide? That's how you made a living?

MUNGER: That's how I made a living. Yep. For a lot of years.

STEIGER: And did you take a degree in international relations?

MUNGER: Uh-huh. I did.

STEIGER:What's that all about?

MUNGER: It's about being an international raft guide, of course. (both laugh)

STEIGER: Yeah, but I mean, what did the university think it was about? I mean, what does somebody who has a degree…?

MUNGER: It's political science and economics and… you can take it anywhere you want. Geography. So, you know, I was headed towards the State Department or international law.

STEIGER: Do you keep in touch with your classmates?

MUNGER: Only my boating classmates. That was definitely where my focus was, even when I came out of school. Because I worked an internship for awhile for an environmental lobbyist in Sacramento and learned very quickly that I did not want to live in the city. So I bought a little place up in the foothills of the Sierras, and basically made it work for me there. I mean I've done every different kind of job, probably…I was a hotshot fire fighter for a season. I was a waitress and a school bus driver and a carpenter and a laborer. I dug ditches one year, and I cleared brush one year. Because when I was a hotshot we learned how to use a chainsaw.

STEIGER: This is after you had your degree in international relations?

MUNGER: Yeah, exactly, but you know I couldn't work doing that in the foothills of the Sierras at that time. (laughter) And I didn't have any other…you don't really have any employable skills when you graduate from college. So I developed them very quickly by pretty much going… "I can do that!" [STEIGER: (laughs) "That sounds like fun! That's oudoors!"] Yeah. So I was a laborer. Basically a laborer. In between guiding seasons or when there was a drought. Because there were six years that I was a river guide before I ever got into any international stuff, or really got out of California. So I spent a lot of time building up a base of skills before I did anything else.

* * *

STEIGER: So what about your Grand Canyon swim? When did that first…?

MUNGER: The swim materialized on a training trip where we were doing Wilderness First Responder stuff, but also Swiftwater Rescue stuff. I was teaching Swiftwater and whenever I do I always have river-boards with me, 'cause they're the most incredible teaching tool, I think, for anybody wanting to learn how the river works. So I had three or four river-boards on an AZRA training trip, and Connie Tibbitts and I pretty much spent almost the whole river trip on those river-boards. It was actually her idea, originally, to do a self-supported river-board trip. Of course, I thought that was the greatest idea ever. 'Cause we'd talk about it. Just, "This is so much fun." It's so intimate with the water being on a river-board because you're at water level. You're still floating. you're still on top of the river, but you're just right there and the waves are all around you. It's a really intimate experience with the river. And so, we loved it. And she loved it. So it was her idea, and we spent three or four years trying to get a private permit.

STEIGER: To swim the river.

MUNGER: Not swimming, we were floating. [STEIGER: What's the difference?] Well, there's a big difference, actually, if you're trying to get permission to go. [STEIGER: Oh, you're not supposed to be swimming. You had a craft…] Exactly [STEIGER: …which was your boogie-board. And what are the dimensions of that thing?] Oh, five-feet by three-feet by about five inches, 165-pounds of flotation. So you're actually floating. You're not swimming. [STEIGER: Up out of the water!] Exactly. (laughter) Well you can say swimming, but it was definitely a big issue in the getting-permission-to-go process. But we aren't really there yet…Connie, you know, she was working full seasons down there at that time and I was too. And you know, you spend so much time around people. What a great adventure to just have two people on river-boards doing a self-supported trip! So we individually tried for about three years to get a private trip cancellation, because we were both on the waiting list. And tried. And I finally got a cancellation in the fall, like a November 24TH put in. But Connie's idea of the time of year to have a fun river-

Photos: Top – Lava South on the Bio Bio River, Chile, 1994. Photo by David Kissinger.

Middle Right – On the Alsek River, Alaska. Photo by Kelley Kalafatich.

Lower Left – US Women's Rafting team competing on the Zambezi River, 1997. Photo courtesy Kelley Kalafatich.

board trip (laughter) was not November. She decided that November or December would not be any fun but that I should go do it anyway. 'Cause you know, we tried for like three or four years. It was like, "We're never going to get a cancellation in the summer. We're both working in the summer. Let's go in the fall." So it looked like, you know, "take it or it might never happen." So at that point I'd been talking to Teresa Yates quite a bit about it, and she was really excited about the idea. I'd approached Connie anyway, 'cause three seemed like a better number to me than two, just safer if something goes wrong or somebody needs help—you've got one person to stay and the other to set up camp or whatever, just three seemed like a really safe number. And Teresa was fine with doing it in the winter. So Connie was pretty…she was always supportive, like, " You guys have a great time, but: I don't want to go in the winter." So we started planning for the trip and I got another friend of mine, Kelley Kalafatich, who I've boated with for 25 years. She's like a sister. I know her really well, I trust her. We did a lot of cataraft boating together in California, paddled on the U.S. Women's rafting team… so a big history of paddling together. Somebody I really trust, had been in a lot of situations all over the place with. You know, a bud. So the three of us started to plan for the trip. And there were all sorts of things to figure out, namely, one, "How do you river-board and carry enough gear to make it for fourteen or fifteen days down the river?" And really when I got a November cancellation… I think I got that cancellation in the beginning of October, so I didn't have a lot of time to plan and figure out all the logistics. So we had some interesting, creative ideas about how to deal with our food situation, one of which involved burying a few cans and having a little treasure map to find the cans on our way down there…but the only way that we could really figure out to carry our gear was in small daypacks and then a little drybag that was rigged to the front of the board. So we had it pretty much figured out, and we had a good enough plan that I think we would have made it.

But we went to Lees Ferry on our put-in day, we had all of our required equipment with us, and this was in 1999, fall of '99. I had actually called and asked one of the rangers a question about fire-pans, so I didn't think it was going to be a surprise to anybody that we were showing up with river-boards, because even on the permit I had written river-boards as our craft, but evidently it was a surprise. We were paddling around in the eddy waiting for our checkout…and I can't remember who was the ranger at that time…but there was also a body recovery search going on, so there were a bunch of Glen Canyon rangers around too, and, you know, someone came walking over—"What are you… what are you guys doing?" It was like, "Well we're putting-in for a private trip." "Well where's your boat?" I go, "We don't have a boat. These are our boats." And they just were laughing at us, basically. So somebody made a call to the River District ranger, who didn't think that that was an appropriate way to go down the river, and he alerted the Lees Ferry ranger that he was not allowed to let us go. So he came down to us and basically said, "You can't go. Without a boat." We said, "Why not?" and—that's why I was making jokes about the whole swimming thing. It's like, "'Cause you're swimming in the river, and it's illegal to swim the river." "Well we're not swimming the river. We're river-boarding the river. We're not swimming." "Well are you using a swimming motion to propel your craft? You're swimming." [STEIGER: "Says so right here in the book!"] Yeah. Basically it became…it was very clear that we were not going to be allowed to go, and that if we tried to go… [STEIGER: They were gonna get ya.] They were going to arrest us. Yeah. But he said, "You can go get a boat and come back to the put-in and go. With a boat." And to me that didn't make any sense. "What, we go with a boat, with these river-boards? We're not allowed to get in the water with the river-boards, so we have to go with them on a boat?" It was just not a good thing. So we contested the decision. I contested the decision, as the permit holder, and said—and that was Teresa Yates and Kelley Kalafatich and I that were there, and just said, "I believe that we're being denied to a public resource without an adequate reason. We're not swimming. These are watercraft. We should be allowed to go. So…respecting you, we're going home, we're not coming back with a boat, but we're contesting the decision." And so that's when we started to develop a document as to why we believed we should be allowed to go. Ruth Stoner was actually a key part of that whole process. We basically went back to Teresa Yates' house and for about a week, five days, just did research. We put together a document that—there's a section in the document that explains the historical evolution of watercraft in the Canyon—all the different crafts that have been used through the Grand Canyon—we documented our experience, we documented our expense and all the things that we'd gone through, all the equipment we had to show that was in our permit requirements, and we documented that by the definition of the Coast Guard, a river-board is a watercraft. 'Cause there are a few places in Coast Guard literature that said, "a watercraft is anything that transports people on water." So we showed that we were floating and not only were we floating but we had more flotation than a kayaker has. A plastic kayak has a lot less than 165 pounds. of flotation. So we basically wrote up a legal document without being lawyers, in a way, and put it into sections and made an appoiment with Mr. Hattaway, who was the River District ranger at that time, and took all our equipment to his office, (laughs) the poor guy, in the

parking lot there, and showed him our document and just said "We believe that we should be able to go." And he didn't disagree with us, he didn't agree with us. He said he'd have to, you know, "look into the matter." So I called him about every month—"Have you looked into the matter?" And that went on for about a year and then, when Mike McGinnis got that job, he was one of the rangers who had been at Glen Canyon when we first were there and so he actually looked into it and actually took it further than our document, than just…

STEIGER: So…so when Patrick Hattaway said he was going to look into it, did that really just mean "I'm not going to make a decision…(but it's not going to happen on my watch.)"?

MUNGER: No, I don't think he was stalling, I think he was just involved in other things. I don't think it was ever at the top of his list of things that he needed to do. No. I never felt like…I mean I felt like all the rangers were exceptionally respectful of us. I just really felt like it was a misunderstanding. I mean, a river-board is not a craft that people are really familiar with. It's a relatively new watercraft that people aren't using a lot. And, you know, I think their concerns were legitimate and that… and also, Patrick Hattaway at that time,was interpreting a law that was really, in my opinion… which eventually—Rob Elliott and I…Rob did most of the work but I was definitely…I ended up quitting being a river guide in Grand Canyon over it: over the whole swimming interpretation. Because the law that they were basing our denial on was the same law that was affecting a lot of river guides for awhile…it was like "no swimming or bathing in any pool or riffle or eddy or any rapid." [STEIGER: 'Cause they'd heard that people were swimming the bigger rapids and that didn't sound too good?] Right. They were worried about the liability of it. But when you look at that law in context of the actual document…it doesn't have anything to do with river running. It's in the section of law that wasn't about river running. It's about *hiking*. So it's a great law. The law wasn't the problem. It was just at that point he had decided to interpret that law to apply to river runners. And me being the Swiftwater Rescue instructor…well he had made a comment to the outfitters, like, "Your passengers are not allowed to float in the rapids or float in the river at all," and some companies didn't take it extremely seriously, but some companies did. I mean here's the River District ranger saying "You can not float your clients in the water anymore," and for me as a Swiftwater Rescue instructor (and a paddle guide), to me that…me following that law would be negligence. Because I know that people who are afraid of the water, who are uncomfortable in the water, need to get in their lifejackets and float around a little bit, so they understand that they can float, in order to survive a big swim at Lava or Granite. I mean some people are going to be fine and some people are going to panic. And so for me—I didn't feel like I could obey that law. And that's ultimately why I quit working for AZRA.

STEIGER: So when you're orienting your people, if somebody's nervous you have them go ahead and get in and…?

MUNGER: I do. I float them all the time. If I'm guiding a paddle-boat I do a lot of flip drills in the flat water so that they're used to…you know the big deal is people going underwater and having to come up and deal with the boat being upside down or being under the boat. So I do a lot of practice like that. I always have as a paddle guide. And getting them to float…expecially if somebody's scared or old…you know, on one of the trips I did for AZRA we had seventy-year-olds in the paddle-boats. We actually waited at Lava for the water and that's what really made the decison for me—because I wasn't allowed to put them in the water before Lava. It made me feel like, "If one of these guys falls out and hasn't had the experience of being in the water—I'm negligent." Whether anybody sees me that way legally, I'm negligent. Because I know better. And I know that people need to float in rapids…if they're older, they don't…yeah. Anyway, that was quite a tangent, but it all ties in.

STEIGER: So you quit over that principle?

MUNGER: I quit over that principle. Because it was either: lie to the company and say. "Oh I'm not going to swim my people." And then swim them. Or just, realizing, you know, "I can't honestly work under these circumstances." And I couldn't. So Rob Elliott and I had long conversations about it and eventually he got a lawyer to look into it and that's one of the reasons that the interpretation of that law has been re-evaluated.

STEIGER: So did Rob and those guys decide to change the company policy on that?

MUNGER: I believe that they have. I'm not positive, but I know they're at least not as concerned or worried or strict with their own policies about it anymore. I mean I think that's really something of the past. And all my conversations with Mike McGinnis are, "As long as it's training related and related to people's survivability" they're very supportive of that kind of training. But it's at the river guide's discretion. It doesn't mean you drop your people off at the top of Hermit and let them float through, but…(well at least not anymore!) But…that's definitely a thing of the past. I mean, I wouldn't swim Hermit in a life jacket, personally. I'm not brave enough. [STEIGER: Not the way it is now. Back in the eighties maybe…on a training trip…] Still. I like to be on top of the water. I don't like to be under the water.

STEIGER: So a year went by. Mike McGinnis got in and you approached him…

MUNGER: No. I didn't have to approach him because one of the first things that fell on his desk was our docu-

ment. And I think because, at least…you know he had been there that day we tried to put in, so he had seen us there. I think he just felt "Look, I owe it to these guys to at least look into it." And the way I understand it is, the solicitor for the Park Service looked at the document and it was basically McGinnis's call. They just said, "It's your call, whether or not you let them go." And he made a decision, mostly based on our experience level, that we could go.

Steiger: Was that when Rob Arnberger was the superintendent still? Or was it Joe Alston?

Munger: I don't remember who it was. Because my only interaction was with McGinnis—when he called me and said he was going to let us go, that it was a one-time thing and—it was really brave of him, I think. To just make a decison like that, that no one had made before.

Steiger: I think it speaks well of him and whoever was the superintendent too. Just to say "Alright. Well, that's your job. So you go ahead and figure it out then." I'm sure there've been people in there who would just say, "What do I gain from this?" Like if something went wrong you lose, but otherwise what do you win? Probably a lot of people in that position would just automatically say, "Nah. Not worth it for me."

Munger: Right. A big hassle is what's in it for me if something goes wrong. You know, they have to be able to defend their decision. And you couldn't blame them, really.

Steiger: I guess depending on how you view that job.

Munger: Yeah. But I think because he is more of a river-type person, he had a better understanding of what we were trying to do and realized that it was a fine thing to do. That there wasn't anything inherently dangerous or crazy about it.

* * *

Steiger: So…Oh shit! Now you had to go do it.

Munger: Yeah! How great is that?! So, I think he let us know that we could go in like September or October and we got a permit for November of the following year. I got really attached to the idea of doing it in the winter, because nobody would be down there. It would just be the three of us and it would be an adventure. You know? And that was one of the great things about it, was figuring out everything. How to make it work. The backpack/little bag on the front might've worked but certainly there had to be a better way and it was a matter of trying to figure that out… At least one of us needed to have a complete board free of gear, for just maneuverability and speed and…you know going over drops and having a twenty-pound weight right in front of your head is different than not. So it was a matter of trying to figure out something else. I tried abalone floats that divers use—maybe we could tow those behind us. "What can we use to tow our gear?" Kelley just had an epiphany one day, like, "Well, duh, what are we thinking? We can just use another river-board to put our gear on." That was really brilliant. But we came up with it relatively closely to our launch date so the first time we actually tried it was on our trip. But we knew it would work.

Steiger: You just had the stuff tied down really good on this other board?

Munger: Right. It was great. From dragging stuff around it made it really obvious that it would need to be floating, and that would float it. And so we designed a system with a—basically a floating water-ski handle that would attach to the board and we modified a throw-bag. So we all had quick-release Live-Bait lifejackets and a ten-foot tether where we would tow the boards in the flat water and then any sign, any little riffle, just because a rope in water, as my friend Mike Mather likes to say, "is an evil serpent looking to do nothing but harm, at any time." So I was adamant, 'cause I know how many people have drowned entangled in ropes…so every time a little riffle would come up we'd stuff the rope all the way in the bag, seal the bag off, and we'd just ride side by side with the gear board.

Steiger: And just kind of let it go if you had to, or…?

Munger: If we'd needed to but we were trying to hold onto it, realizing that just letting it float the whole way was going to use a lot more energy than was necessary. So just by floating right next to it we kind of became like a cataraft. Because we'd just grab on the side of the gear…and it was really stable, actually. More flotation, stability, everything. If we went up on a wave and it kind of flipped over you just push it back down. So that worked great. So we floated side by side through a lot of the rapids that way. Every rapid was different. It was like, "Well what…ok now we're at Hance. That's not going to really work at Hance. It was still relatively low water when we got to Hance, it was like 12,000 [cfs] I think, so we had to run the left side and there's a lot of exposed rocks, so the idea of kind of maneuvering that through…we wanted to be able to run the pour-overs and not worry about the gear board.

Steiger: You ran the left side? Wow. Instead of down the middle you were like far-left?

Munger: Just kind of the normal boat run. The left boating run.

Steiger: Did you go to the left of the square rock or to the right of it?

Munger: The left. [Steiger: You did? And caught that eddy and came across?] And caught that eddy. What we did is we caught that eddy and then ferried out with our board and then at that point let go of the gear board, because at that point, once you made that

move, the gear board wasn't in danger of getting caught in the rocks on the left. So we couldn't just let the gear board go, and that was a horrible rapid to do that—in Hance—but that worked out perfectly, I mean we caught the eddy, made the move out a little bit and then let go of it so we could run the pour-overs just with us and our board. Got into the tail waves, looked around for the board, paddled over to it and grabbed it and did the lower part with the board.

Steiger: Did you go to the right or the left of the Whale rock?

Munger: To the right. Everything went to the right. So we didn't let go of our boards until we were clear of the rocks. [Steiger: Wow.] Yeah. And then we caught them in the tail-waves, and that worked out great. And then Sockdolager we just let go of the—you know at kind of the entrance waves, let go of it, went through the big wave, and then reconnected. So places…and I think Sockdolager it wasn't even…I can't remember if we actually held onto the board the whole time, or, or not. But the rest of the rapids in there were fine. Then the water came up to about 18,000 [cfs] after we passed Phantom Ranch.

Steiger: Boy I was thinking…because man, that 11,000–12,000 [cfs] is right in there, that's an exciting stage for swimming Sapphire.

Munger: Yeah I'll have to look in my notes.

Steiger: Of course, 18,000 [cfs] at Granite or Crystal…what would you do?

Munger: Just ran the right. Easy. Piece of Cake. Crystal. Just the right run. It might have been 8,000 [cfs] and came up to 13,000 [cfs]. I should remember that. It was only five years ago. …Really every different rapid had its challenges.

Steiger: How many days was the whole thing?

Munger: Nineteen. Because we actually got a ride

Photo: Rebecca Rusch

Kelley Kalafatich and Julie Munger enjoying a river campsite on their river-board trip.

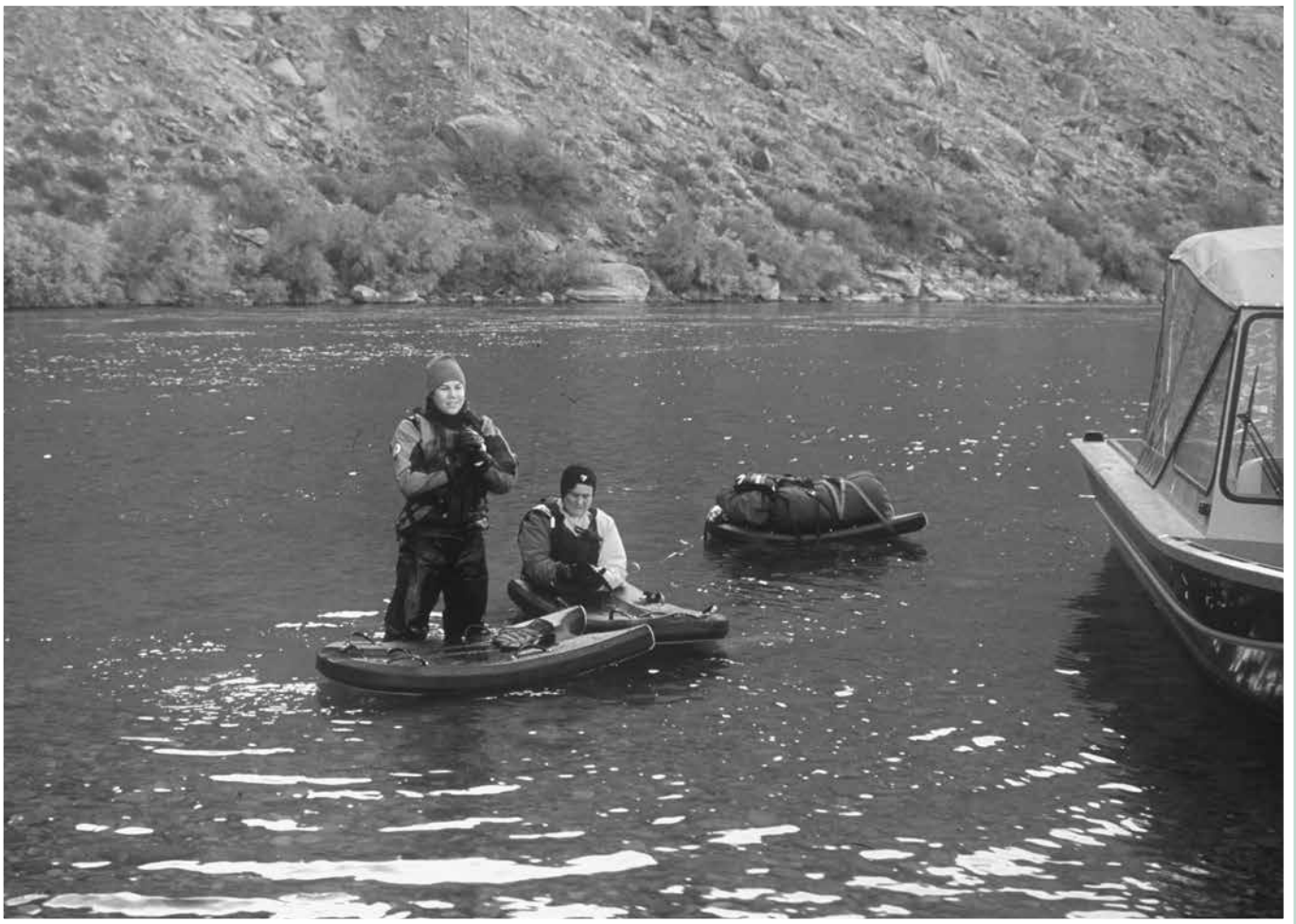

Photo: courtesy Rebecca Rusch

Rebecca Rusch and Julie Munger preparing to get underway from Glen Canyon Dam.

right up to the base of Glen Canyon Dam…that was a kind of a dramatic thing for me because I went up there with my dad. He came down for our launch and he hadn't been above Lees Ferry since the dam was built. The last time he'd come down that part was on that Georgie White trip. So we went all the way up to the base of the dam and started our trip there.

Steiger: And he came down to see you off? That's pretty cool.

Munger: Yeah, It was really cool. It was great. So we went all the way from the base of Glen Canyon Dam to Pearce Ferry.

* * *

What stands out for me now? Well I've always definitely been bummed that Teresa Yates couldn't make it, because her life really changed in those years. She was there with us at the put-in and there with us through all the stuff…with all the documentation…and then got married and her husband was having some heart difficulties at that time and so she ultimately wasn't able to join us. So that's always been a…I've always wished that she was able to go, because it was definitely a passion of hers and she was really instrumental in making it happen. And it also would have great if Ruthie Stoner could have come with us. Because she still…and Connie! So, even though I know that they were all there with us in spirit, it would have been great to actually physically have been on the water with them. So looking back on it, I mean even though Rebecca Rusch is the third woman who ended up joining us, you know she was also part of Kelley and my paddling team…and it's incredible that the three of us were there—but I've always felt that, you know, there really were more of us involved, not just the three of us who actually did it. And there's Carr Clifton and Abigail Polsby who were our incredible support crew. We couldn't have done it without them. I think it's like any kind of adventure that takes a long time to put together. The people who actually do it aren't the only people… you know they are really just a small part of the whole picture: which is everybody who

put energy into making it happen. So, I look back on it as more of a whole, encompassing event. There were just so many pieces that went into it. And that's as valuable as the actual trip.

Steiger: Yeah…I guess Ruthie helped because having worked so long for the Park she knew how… was her contribution like: "Look if you file these papers, there'll be such and such a process…"? and da-da-da?

Munger: No, not so much that as she did all the internet research. Because none of us were internet compliant then.

Steiger: So she looked up the laws themselves?

Munger: Exactly. And it was like, you know: "We need to get the definition of a water-craft." And she would go and she'd find it. "Well we need all the historical information about how river-boards are used." You know, commercially, recreationally…and she would find that information on the internet for us. So she built the base of our document.

Steiger: So how about actually running…how'd that go? Just in terms of the evolution of your own techniques for getting down there.

Munger: Oh, it was great and that was part of the adventure too… We pulled out of the eddy at Lees Ferry and our gear boards instantly just tipped over. So part of it was figuring out how to rig the gear low and wide, so they'd be more stable, and that helped a lot just in our maneuverability. But, you know, river-boards are kind of—they're a misunderstood part of boating in that they're incredibly maneuverable. Your visibility is different because you're water level but if you scout and you can read the river or you know the river…It's great because everybody says the Grand Canyon is 85 percent flat water—well not when you're on a river-board! It's pretty much continuous. All those little riffles that you just float over in a boat are so much fun. They're just—you know you're going all the time. Everywhere. But we were very precise in the lines that we picked and how we ran. We got to House Rock, it was low water and we scouted it and we picked our route. In House Rock and in Granite and in Lava we portaged our gear boards to the eddy at the bottom and just tied them off there and then we'd run the rapid and catch the eddy and pick up the gear boards then. So, no, we were very precise. It took awhile to get in shape. And relax. A lot of it is just learning how to relax and use your fins to steer and… one of the reasons I love river-boards in teaching rescue stuff is they're very responsive to ferry angles and very unresponsive if you're at the wrong angle. So once you learn… if you've got a good ferry angle the board will do all the work for you. Just like any boat. So it's just a lot of learning. Getting intimate with running.

Steiger: What was the most exciting run you did?

Munger: Well, Lava, I would say. The interesting thing is just that not having been in big water very much at that time on a river-board, just not knowing how it would handle. And being concerned about, "Well if you go over a big pour-over, what exactly is the board going to do?" But uh, you know, it's much safer to go down the Colorado on a river-board than it is in a raft. I can definitely say that. Because when you think about it: you're prepared for a swim. You've got a helmet on, you've got a dry-suit on, you've got thermal protection, you've got gloves, you've got fins. If you flip over you just flip right back up. If you fall off you have a 165 pounds of flotation floating with you. So a lot of it was just discovering how…what a great craft it is. Especially for the Grand Canyon. It's perfect…

Steiger: Can't fall out of bed if you're laying on the floor! (laughter)

Munger: Well I guess that's another way of looking at it. But it's just the perfect craft for the Grand Canyon. So a lot of it was just figuring out the capacity of the board itself. Lava Falls…we got to Lava…I think it was right around 12,000 cfs—right at the cutoff for the right or the left run. Any time it gets down there a little bit like that, you know the black rock and some of those lava sieves on the right are really concerning to me… We looked at it and talked about it and said, "Yeah, let's go left." But the pour-overs were pretty bitey at that level and I got a little bit too far right in the big pour-over. Not anywhere near the ledge hole, but…

Steiger: Sent you over to the domer.

Munger: Yeah. So I went off that thing and just went completely underwater. I mean I gained a new respect for the board because I went over and just ducked and went under and got tumbled over once but came right out, just right with the board and everything. Jumped back on and it really wasn't a problem. But Lava was definitely the biggest hit, at that level.

Steiger: Was it hard to see where you were going floating into that?

Munger: Oh yeah. It's really funny in the dvd because I had run it once and…had some things going on that day…didn't really want to run it again. So Rebecca went out to run it herself and did the classic, kicked way too far out to the middle and was heading right for the ledge-hole. I was standing there watching her and I thought, "you know I'm just going to try." I just started to point over and she saw me out of the corner of her eye and got it right away and turned at ninety degrees and kicked to the left, and she had a great run. She had a really good run. Then Kelley, who was at the bottom filming it, and then hiked back up to run it...she barely even got her hair wet. She just slicked it. She's really good—she's an amazing river runner. Anyway, she just duck-dove all the waves. Didn't get her hair wet.

The most catastrophic thing that happened on the trip was an msr stove that blew up at South Canyon. That's

Photo: Rebecca Rusch

Julie Munger shows how it's done in the whitewater.

the closest we came to not completing the trip. Had nothing to do with the river. Had to do with a stove… We were having trouble, we had two MSR stoves and we were having trouble with them from the very beginning. Well now I think we just had some bad fuel. We'd been priming it and having trouble and Rebecca went to turn it off and it just exploded with this huge fire-flame, and it caught her arm on fire and her hand on fire, she had a down jacket; so her hand and her arm jacket were on fire. All our gear was on fire. There was white gas flame everywhere. It just shot out. I mean the pictures I have of it. The whole stove, the fuel bottle, everything just melted. 'Cause it just went. So she doused her hand in the sand and we ran to the river and she put her hand right in the river. Kelley just basically took her straight to the river. And that was a pretty tense moment-slash-night…I don't think I've ever been so happy to see somebody start blistering. Because that was the thing, "Was it going to be second degree or third degree? Because third degree would've ended her trip for sure, right there. She would've been hiking out at South Canyon. But they blistered, she had blisters all over her hand and we just were there with a needle and we were popping them as fast as they started to fill up, so that her skin loss would be minimal, on the top of her hand. She probably lost, oh I'd say at least a third of the skin on the top of her hand.

STEIGER: I never heard that. Is that a WFR thing?

MUNGER: Well it is for me. It's kind of a field experience thing. If you're getting a blister and you're not going to do anything with that then you can let it keep filling with fluid and then the body will re-absorb the fluid and it will go back down. But if you actually want to lose it, you know the longer you let it start filling up with fluid the more skin is going to de-laminate, the bigger the wound you're going to have to deal with. So we were just popping the blisters as quick as they came up. Just trying to keep the wound small… Right there on the spot, yeah, as soon as her hand came out of the water, and it was blistering. So, we got the whiskey bottle out. Little pain medication. She woke up in the morning and had some more blisters that we popped and just, you know put some aloe vera and gauze and taped them up and put her hand in a glove and kept going. By the end of the trip her hand was almost healed.

Photo: Rebecca Rusch

Julie Munger gearing up for another day of boarding.

STEIGER: Wow. What an adventure.

MUNGER: It was a great adventure. It was a great time.

* * *

STEIGER: I remember you said when you first got into river running, the rivers were fun but it was more like where they were taking you. What's that all about? Being in those places, what was the attraction there?

MUNGER: Well I think it's the way that we can best survive as a group away from mechanized society together. So it's about exploring people in places…and even in international relations, I mean when you think about it, as someone who is really passionate about systems and politics and places and how people get along and inter-relate with each other…A river goes everywhere. It starts in the mountains and it goes to a major city…so being on a river in the mountains you get a glimpse as to how people in the mountains are living in that country, and you interact with them. You end up buying food from them and figuring out how to do logistics and transport. So, you know, as far as international relations, there's no better way to understand the world than a river. And then, just sharing experiences with people and figuring out what's important to you in your life. I mean you still have to make the transition when you get back to your normal life about…well what are you going to do with it? But it's such a great place to reflect on yourself, and make decisions about your life. And it is that unique experience, it's that two week experience that transports you somewhere else. To me the big challenge is actually taking that and transferring it back to your life, but it is an opportuity to just be in a place that's honest. I mean it's a hundred percent honest. You can't lie, you can't cheat. You can either run the line or you can't. You can either deal with yourself, or you can't. And once you get people away from mechanized society, it strips you down. So, I've always liked that honesty that the wilderness brings. Besides just,of course, the selfishness of just being in a beautiful, spiritual, wonderful place.

There's a great DVD *about this adventure, well worth watching. If you are interested in seeing it contact Julie at julie@sierrarescue.com.*

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Evolving Landscapes, Stream Wars, and the Darwinian Survival of the Fittest

In previous "Letters From the Grand Canyon," I have attempted to outline the various ideas on how and when the Grand Canyon came to be, together with the facts that have a bearing on the problem and must be taken into account (but often are not) by any theory that aspires to respectability. Whatever the theories, the Grand Canyon is there, vast and mysterious. So, it not only *can* exist, it *does* exist, no matter how much we may argue about how this happened. This now gives us leave to start having fun by looking at the happenings within the Canyon once it had developed into something much like what we see today—roughly the past one to one-and-a-half million years. It is within this interval that we can delineate with some degree of confidence the events that have led to what is there now, and the processes by which this has happened. And it is also near the very end of this interval that we start seeing the Canyon interact with that strange and self-important bipedal primate, *Homo*, which is so pleased to call itself *sapiens*.

We would be remiss, however, if we were to do these things without first exploring several interesting lessons that issue from the observations that have been made and the intellectual turmoil that has occurred in attempting to solve the great dilemma. This is the subject of this "Letter."

Evolving Landscapes

We humans know that the landscape around us generally changes little, if at all, within the time we are there to observe it. It is natural, then, for us to project this immutability to intervals of time much longer than our admittedly short life span: what is there now must have been there thousands, hundreds of thousands, even millions of years ago. "The eternal hills," and so on. This may be perfectly acceptable in the domain of poetry, but it is not acceptable in the field of science, where not taking into account the rapid evolution of landscape can lead to mistakes such as using the present-day landscape to develop theories on the origin of the Grand Canyon several millions of years ago. It is useful, then, to see how this landscape has changed in the past several million years during which the Grand Canyon was born.

Today, the region surrounding the Grand Canyon is underlain principally by the Permian Kaibab Limestone, the cream-colored rimrock of the Canyon. The Kaibab is tough and hard to erode in a dry climate, so erosion slows down greatly when it has worked its way down to the top of that unit. Meanwhile, rocks above the Kaibab, which are much softer, get swept away. The end result is that today's topographic surface coincides with the top of the Kaibab over wide areas, resulting in a subdued landscape that slopes gently northeast because that is the regional dip, or slope, of the Paleozoic strata of which the Kaibab is part. This landscape is interrupted only where some geologic feature such as a fold disturbs the otherwise simple arrangement of the strata. But even there the topographic surface mostly follows the top of the Kaibab Limestone. For example, a topographic feature—the Kaibab Plateau—follows exactly a geologic one—the Kaibab Anticline (or dome), an up-arching of the strata.

Has this always been so? Not at all. To begin with, we know that even a short time ago, geologically, the region where now the Kaibab Limestone forms the surface rock was underlain instead by the Triassic Moenkopi Formation, the brick-red sandstone that crops out near the Lees Ferry boat ramp. We know this because lavas that have been dated and are not very old lie over the Moenkopi in many erosional remnants throughout

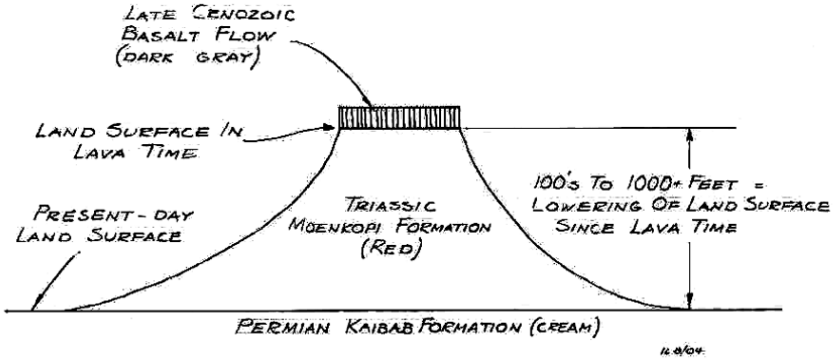


Figure 1. Schematic representation of a butte typical of many in the Grand Canyon country. The basalt capping the butte flowed over the land surface as it existed at the time. In most cases, the land surface was then underlain by the Triassic Moenkopi Formation. Afterwards, the area under the tough lava was protected by erosion, but surrounding areas were not. These were eroded down to the present level, generally on top of the resistant Kaibab Formation of Permian age. Today, the old land surface preserved under the lava caps is hundreds and, in some cases, more than one thousand feet above the present-day topographic surface. This represents the erosional lowering of the land since lava time. If one knows the age of the lava, one can then calculate the rate at which the land has been lowered.

the region (Figure 1). Since lavas flow over the topographic surface, whatever material is directly under the lavas formed the surface when the lavas hissed over the land. This ancient surface was hundreds, if not thousands, of feet above the present one. As a rule, older surfaces are higher than younger ones. Ancient lava-capped surfaces can readily be seen at places such as Red Butte, near Valle (Page 44), and at Black Point in the valley of the Little Colorado River upstream from Cameron.

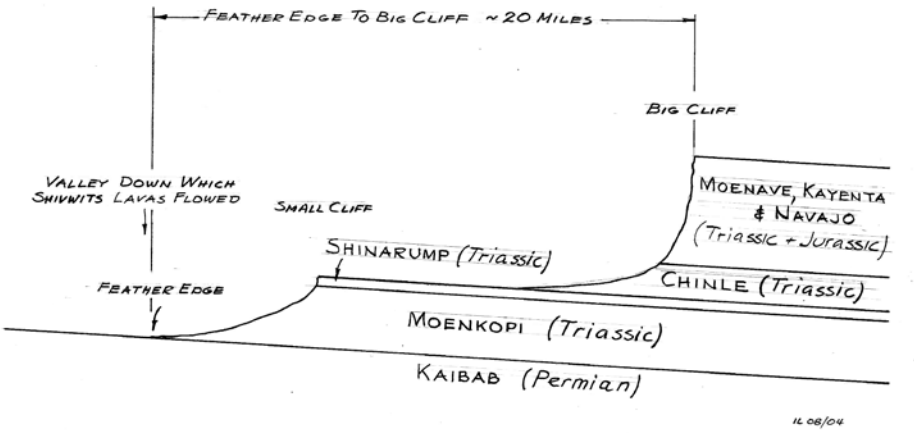


Figure 2. Mesozoic strata exposed near the Shivwits Plateau. This is the lower part of the Grand Staircase

Were present topographic highs such as the Kaibab Plateau also high in the past? Again, no. The strata that today form the Vermilion Cliffs, and in fact higher Mesozoic strata as well, once extended completely across the Kaibab Plateau, from which they have been since stripped. The stripping occurred through retreat of cliffs to the east and west off the axis of the Plateau. As the cliffs started on their journey, the axis was a low point, a valley, between opposing cliffs.

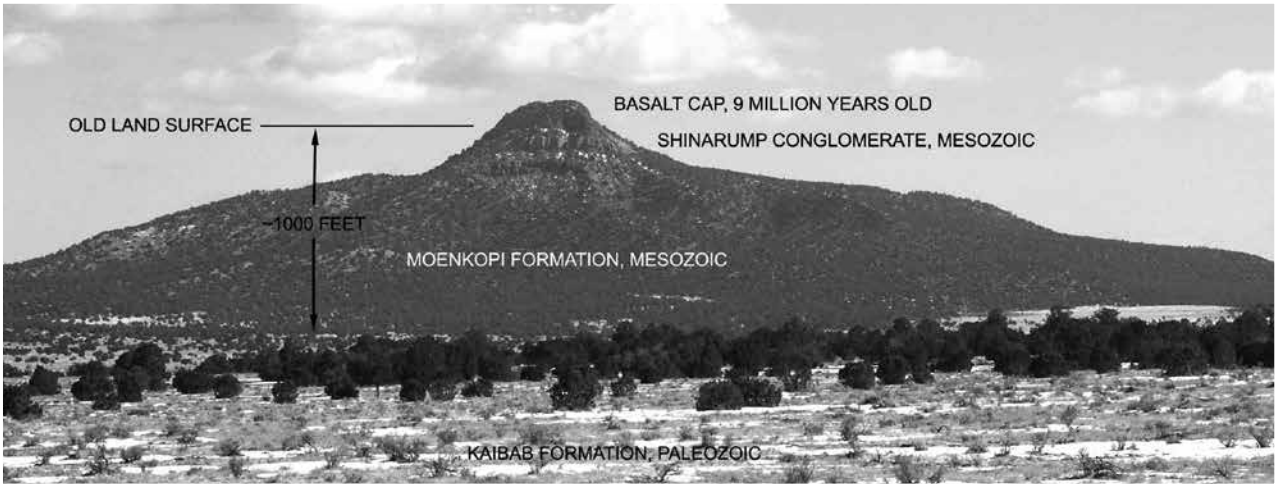
Was the pattern of streams and washes similar to that of today? Mostly not. The cliffs of the staircases regionally erode back in a northeast direction, down the dip (slope) of the strata. The cliff bands themselves trend northwest, parallel to what geologists call *strike* (by definition at right angles to the dip). Valleys form at the foot of the cliff bands. These strike valleys generally are occupied by streams. The Little Colorado River upstream from Cameron is a good example of such valleys. The overall drainage pattern in the past consisted of longer northwest-trending strike valleys and shorter northeast-trending segments. This is a "trellis" pattern, quite different from today's pattern controlled by incision of the Grand Canyon.

Were the cliff bands where they are today? Again, no. As detailed in a previous Letter, lavas of different ages on the Shivwits Plateau show us that the scarps (and indeed the Grand Staircase itself) have moved northeast, or down-dip, with time at a rate of at least two and a half miles per million years. We know this because all these lavas, whatever their age, flowed down broad strike valleys whose bottom was where the feather edge of the Moenkopi Formation against the Kaibab was at the time (Figure 2). About eight million years ago, the feather edge was near Mt. Dellenbaugh, in the southern Shivwits Plateau. Today, it is to the northeast, near Colorado City, where several rungs of the Great Staircase are also visible. The most conspicuous of these is the great cliff formed by the Navajo sandstone. This cliff is about twenty miles northeast of the feather edge. If we apply the modern separation between feather edge and Navajo cliff to the ancient feather edge of eight million years ago near Mt. Dellenbaugh, we conclude that eight million years ago the Navajo Cliff (and the Grand Staircase) would have been somewhere between the present Parashant and Whitmore Canyons, a far cry from the topography we see today in that area. Clearly, it is dangerous to use modern topography as a good representation of an older situation without first mentally playing backwards the movie of cliff bands being eroded down dip and the general lowering of the land surface with time.

Stream Wars, and the Darwinian Survival of the Fittest

Streams fascinate us because of their many aesthetic qualities, which have been celebrated by poets and painters for thousands of years. Now, we are becoming aware of another interesting property, which is this: of all inanimate things, streams come closest to being alive. Streams have the ability to react—you do something to a stream here, and it will react there, sometimes in ways that seem almost capricious. This is well illustrated by the Colorado River and Glen Canyon Dam. The upstream disturbance was obvious even to the dam builders: all sediment carried by the river is dumped into Lake Powell, and the river creates a rapidly-expanding underwater delta. The reaction downstream was less obvious: here, the river is starved of sediment, so tries to acquire a load by attacking anything it can sink its teeth into, notably beaches and other deposits near the river level. The environmental consequences in the Grand Canyon are severe.

The river's behavior is controlled fundamentally by



Red Butte

two properties: sediment load, and the energy of the moving river water. The energy is strongly influenced by the velocity of the water, and that in turn is controlled by the gradient. A river that is in equilibrium has just the right amount of energy—and gradient—anywhere along its course to just carry its sediment load, no more, no less. It acquires a characteristic concave-upward longitudinal equilibrium profile between source and mouth. Now lets build Glen Canyon Dam across its path. Suddenly, the sediment load is removed while the energy remains the same. The river needs to use its excess energy and does so by eroding and lowering its bed. A new equilibrium profile is established below the original one. This profile is longer, so the average gradient is less, and a new equilibrium is established at a lower energy level. The opposite happens if the river is overloaded or base level (the elevation of the mouth) is raised. Rivers are self-regulating systems and we, who like tampering with them, are often dismayed by this characteristic.

Even more interesting for me is an aspect of streams that is seldom thought of but that depends on the same characteristics: gradient, energy, and erosive power. I am talking here about the ceaseless struggle between competing drainage networks and the constant evolution of these networks, a network being all the streams and washes within a drainage basin. Many people are surprised to learn that seemingly-tranquil systems of streams are locked in endless battles for territory and survival, yet that is precisely what is going on beneath the placid appearance.

Each network is trying to expand its territory at the expense of neighboring networks. The strongest and fittest networks are those with the steepest gradients and the greatest erosive power. These networks acquire bigger drainage basins by tapping into and capturing the water of weaker neighbors, a process we call stream piracy. Weaker networks disappear as independent entities, and their territory is absorbed into that of more successful neighbors. A common result is that the direction of flow of captured streams can change drastically, even to the point of reversal.

The external or independent events that promote the struggle and give some networks an advantage and others a disadvantage are such things as uplift, tilting, and the incursion of the sea in areas that were previously dry land. The weapons used in the battles are downcutting and headward erosion. If all this sounds familiar, it should be, because it is precisely the kind of mechanism Darwin advanced for evolution, which comes about because external events such as mutation cause certain organisms to be favored over others in the struggle for survival.

Let us now give substance to these theoretical concepts by envisioning a region occupied by drainage networks flowing in random directions, and let us introduce an external disturbance by tilting the region. The gradient of streams that originally flowed in the direction of tilt is now increased, whereas that of streams originally flowing away from the tilt is decreased, and that of streams originally flowing parallel to the axis of tilting is unchanged. The consequences are that the first group of streams is invigorated, the second weakened, and the third remains the same. The invigorated streams cut down rapidly and extend themselves by headward erosion. In due course, they reach the other streams, which have cut down little or not at all, and capture their flow. When this happens, the streams flowing parallel to the axis of tilt are deflected ninety degrees, and those flowing away from the tilt experience flow reversal. When the dust settles, one or several streams flowing with the tilt will have conquered the whole region, and the drainage configuration of the region will have changed drastically. This is an important point:

drainage networks are not static, but constantly reconfigure themselves and evolve in response to external stimuli such as deformation, uplift, or glaciation. There is no such things as a beginning of a drainage network, only evolution. The analogy with living things is obvious.

We now have the tools for envisioning the mechanism proposed by McKee's group long ago and then by me for the carving of the Grand Canyon: the capture of a sluggish ancestral Colorado River by a brash upstart at the southwest edge of the Colorado Plateau. This was made possible by uplift of the Plateau combined with encroachment of the sea to very near the Plateau's edge. The result was that streams developing on the southwest edge of the Plateau had a great fall over a short distance, meaning, a steep gradient, so were able to cut down and expand rapidly. Eventually, one of the streams became dominant. Meanwhile, the ancestral river continued to be sluggish because it flowed to a far-away sea: its gradient remained low and it did not cut down appreciably. The penalty for such laziness was capture and re-routing into the present course.

As an interesting side issue, geologists working on the Nile River of Africa were inspired by our mechanism for the history of the Grand Canyon to came up with a similar one that explains certain remarkable features of the Nile. Briefly: the modern river flows northward into the Mediterranean Sea, but much evidence shows that the ancestral Nile flowed instead into central Africa, and specifically toward what is now Lake Chad, for millions of years. Then, a remarkable thing happened: worldwide sea levels dropped so much that the shallow bedrock "sill" at the Straits of Gibraltar became exposed. The Mediterranean Sea became isolated from the Atlantic and nearly dried up, with the consequence that its level dropped many thousands of feet. We now had a high and steep north-facing scarp along the Mediterranean coast of Africa, a fine place for new and energetic streams to develop. This situation was similar to that along the southwest edge of the Colorado Plateau when uplift combined with an incursion of the sea gave steep gradients to the streams of the region. In both cases, the result was the same—the capture of an old, low-gradient stream by a new, high-gradient one. In case of the Nile, a new and energetic stream developed along the present course of the lower (or northern) Nile. This new river flowed northward into the Mediterranean and extended its head southward, in the process carving an enormous canyon comparable to that of the Colorado. Eventually, the new river tapped the sluggish upper Nile and diverted it into a northerly course. And then another astonishing thing happened: the level of the Atlantic rose so much that it overtopped the sill at the Straits of Gibraltar again, causing enormous amounts of water to cascade into the Mediterranean, whose level rose to where it is now. As sea level rose, the Nile River was forced to build up its bed. This caused the great canyon to be entirely filled up with river sediments; today it is buried by the classic Nile River delta. Nevertheless, the canyon can still be seen very clearly in the subsurface by means of geophysical techniques.

Ivo Lucchitta

Grasping for Grandness — Erica Fareio

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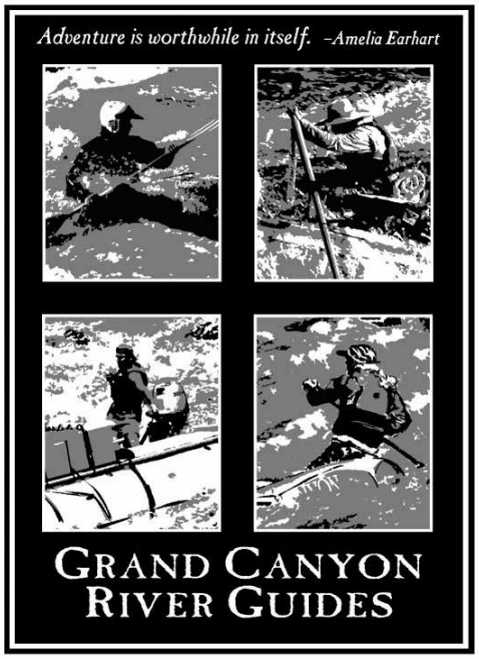

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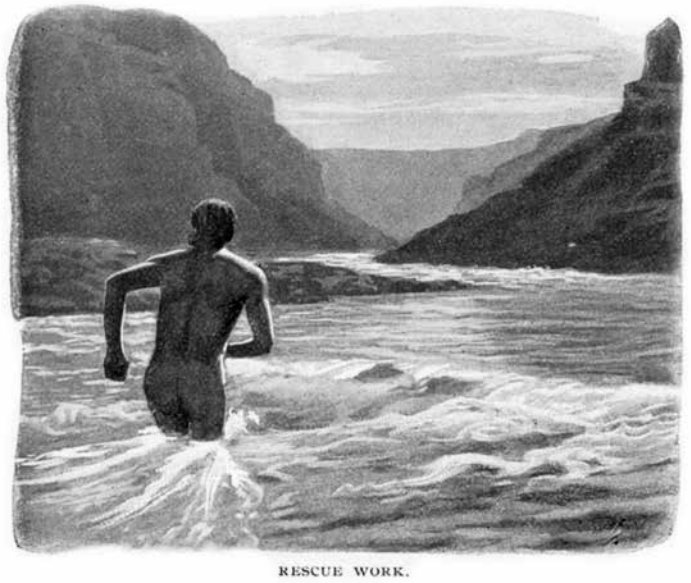

RESCUE WORK.

From "Engineering with a Camera in the Cañons of the Colorado" by Robert Brewster Stanton, in Cosmopolitan Magazine, 1893.

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