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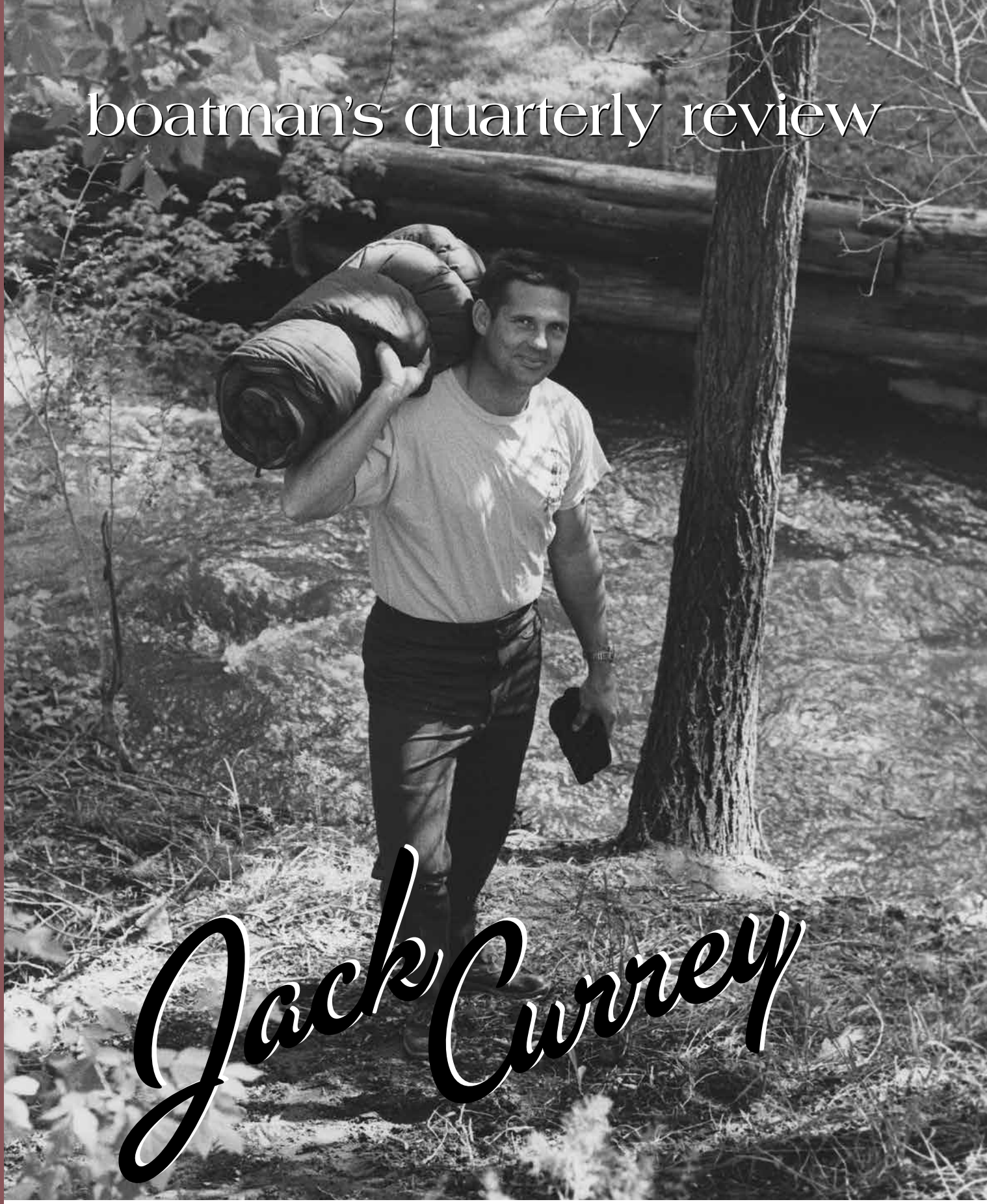
boatman's quarterly review



Jack Currey

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 Office Hours: 10:30–5:00 Monday through Friday

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Prez Blurb

Here's a crazy thing. I've been speaking for you river guides quite a bit this year. Well, writing letters mostly. There are important issues in the works: Uranium mining in the vicinity of the canyon, decisions to be made about overflight noise, the flood this spring. Stuff that matters. It's been fun. People want to hear what we think. Lawmakers, policy makers, and managers—from the Park Superintendent to the House of Representatives, they've been getting letters and emails.

I hope I'm doing well by you. I know that some of you are going to disagree with some of what I have to say. That's part of the deal with an informed democracy, and guides tend to be a well informed and opinionated bunch. Heck, a lot of us are going to have different opinions about how to run Hance Rapid. Some better than others, some maybe a little crazy, but most of them valid. It's part of the fun.

And here's another cool thing: those decision makers and managers want to hear from individuals, too. They want the spectrum of ideas, opinions, strategies and desires. Even the crazy ones. Even emails just a paragraph long that say, "There should be no planes flying over the Grand Canyon because they ruin the perfect blue skies," or "We should fill the skies over the canyon with planes and choppers because we need all the shade we can get down there." Whatever you've got, if you tell them it means more than the opinions of ten thousand people who don't say a thing.

So I'm actually hoping you don't agree with everything I say. I hope you like the basic ideas but see a strategy that you like better, or know of an important detail that I've missed. And I hope you're bothered by that disagreement enough to fire off an email. Something quick, to the point, and personal. They'll hear it if you do.

Thanks for throwing it out there. And thanks for giving me the chance to speak for all of you.

I hope the river season is treating you well. There are some nice fresh beaches down there…

Sam Jansen

Flash Flood

In the heart of this desert oasis
A blessed rain I prayed appear
Grew to a raging river

Now days later
Down the trail ahead
There is empty space
Where limb and leaf
Once filled the sky

Instantly
The place in me
Connected to
A cottonwood tree
Shatters to bits and pieces and
Imagining her completely uprooted
I'm carried away in a rush of tears
Honestly thrilled by the thought
Of her journey of flying
Through the chute
Over the edge
Past behind her
Coming to rest
And a new beginning

I drop my pack
And run upstream
Holding hope until I see
Remnants of her
Amazing roots exist
So sprouts will
And in the place she's given up
Other life all ready open to opportunity
Reaches deep and prepares to flourish

I lost my mom Sally
Last autumn to a fall
So it is of great comfort
To find of all people
Fellow river guide
Sally
Is here
At the tree
Where it was
With me
Now

Beauty
Held us timelessly
In this sacred place

Defined by the tree
Nourished by a waterfall
Drumming my back
Gnarled roots grown
'Round rocks that crashed
Into her tenderness finding a home
All washed away leave me to mourn
In this cold world of constant change
Where the sun beats down without her shade
I'm wrapping myself in precious sorrow
When a woman here with Sally insists
I shift my focus away from loss and look
Beauty and grace still fill the space
There is a new waterfall

Gently
Taking that in
The warmth of a
Feeling I can only call love
Floods my body
To overflowing
And I know
In a flash as
Quick as that
It springs to mind
Licking lips tasting ocean
All lit up inside out all
Liquid light pouring
Into every cell spills
Over into clearly
Remembering
I am
Dreaming
This dream
Giving the cottonwoods their smell
The raging river each drop that fell
The who the what the now I see is
Exactly how I agreed it be

Drinking in these gifts received
I send my love to a cottonwood tree
Tell Mom and Ron and Uncle Bill
We love them now and always will
Thank you for our time together
Sorry 'bout the nasty weather

Nancy Coker Helin
Summer 2007

Dear Eddy

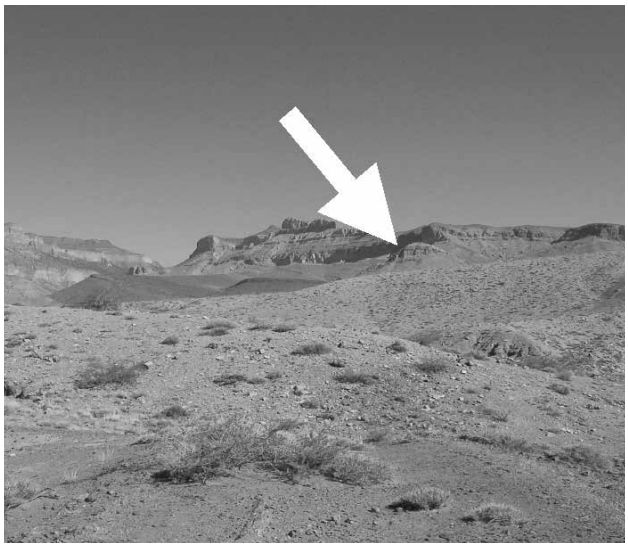
In Respone to a *"Dear Eddy"* in BQR Volume 20:4 by Tubby that was in reference to "*The Grand Age of Rocks Part 3: Geologic Dating Techniques*" by Allyson Mathis and Carl Bowman in BQR 19:4

Thanks for Tubby's letter regarding the third installment of our "*Grand Age of Rocks*" articles. I'm glad it was helpful in explaining geologic dating, since that was their primary target. It's a subject that can get pretty arcane and convoluted, so I'm happy they made sense!

With regard to the Bright Angel Shale squeezing out underneath the Canyon's temples, the diagram is not based on personal investigation. Much less glamorous, I (Carl) redrew it (quite some time ago, for a different reason) based on an illustration in *Geology of the Grand Canyon* (1974, Museum of Northern Arizona & Grand Canyon Natural History Association), and the original has appeared as recently as the 2003 second edition of Beus and Morales' *Grand Canyon Geology* (page 250). The caption, describing the ductile Bright Angel Shale as "squeezing out" from under the more brittle layers above, was based on Peter Huntoon's explanation in Chapter 14 of *Grand Canyon Geology*. He has also written about this in a number of publications going back to his 1973 article in the old Museum of Northern Arizona *Plateau*, "High Angle Gravity Faulting in the Eastern Grand Canyon" (Vol. 45, pp 117–127). The Bright Angel Shale is far and away the most fissile ("flakey") shale in the Grand Canyon (far more so than the silty and sandy Hakatai and Hermit). Unlike the salt Tubby mentions, we'd expect fissile shale to be more likely to slip like a stack of playing cards when lubricated by water, rather that squeeze out like toothpaste (shoulda picked a different verb?). Checking geologic maps, either the USGS Grand Canyon 30'x60', or Grand Canyon Association's "Dragon Map" (thank you, George Billingsley), some of these faults do show up on the east side of Bright Angel Canyon, especially around Deva Temple. It's interesting to note that while they die out in the Bright Angel Shale as Huntoon describes, they also "line up" with the Roaring Springs fault, suggesting that Huntoon's deformation in the Bright Angel Shale might not be the only factor at work here.

(As an aside, in Cataract Canyon, you can see the evidence of salt movement like Tubby describes, as the jumbled exposures of Paradox Formation in Spanish Bottom and other spots. Of course, the climate is way too wet to see the halite (table salt) at the surface; it all washed away and you see mostly the gypsum left behind. Less dramatically, salt movement and solution has crumpled some beds in the Grand Canyon's Kaibab and Toroweap formations, too.)

Huntoon has described the Bright Angel as "failing" in three ways, especially if lubricated (the shale, that is). First are the gravity faults discussed above. Second are the massive "rotational slides" Tubby mentions and are made famous at Surprise Valley, though they are seen elsewhere—Carbon Butte is the longest traveled (photo below from the Butte Fault in Carbon Canyon) and there's a big rotated block up on the Tonto below



205 Mile Canyon (river right). These blocks are thought to have formed when an underlying shale failed—the shale is often Bright Angel, but can be in the Hakatai or Galeros formations, too. As Tubby correctly noted, these blocks are completely bound by a fault, which rises from the failed shale layer in a long curve up to the surface behind the block. The whole mass of rock in the slide slumps down this curved surface, rotating as it goes. Often, the movement is smooth enough that even though the rock in the slide is jumbled, you can still identify the original layers in the block (like the Redwall on the summit of Carbon Butte). Driving to Lees Ferry from Jacob Lake, the same process has dropped huge blocks off the Vermilion Cliffs, where the weak Chinle Formation shales are to blame. Conor Watkins ("Overconsolidated shales and their role in triggering megalandslides in the Grand Canyon shales," Geological Society of America 2007 *Abstracts with Programs*, on-line at http://gsaconfex.co./gsa/2007AM/finalprogram) reports that when overconsolidated shales are exposed by erosion, they "unload and undergo strain softening." When the Bright Angel Shale undergoes this process, it can lose two-thirds of its cohesion when saturated. A poor foundation material, indeed!

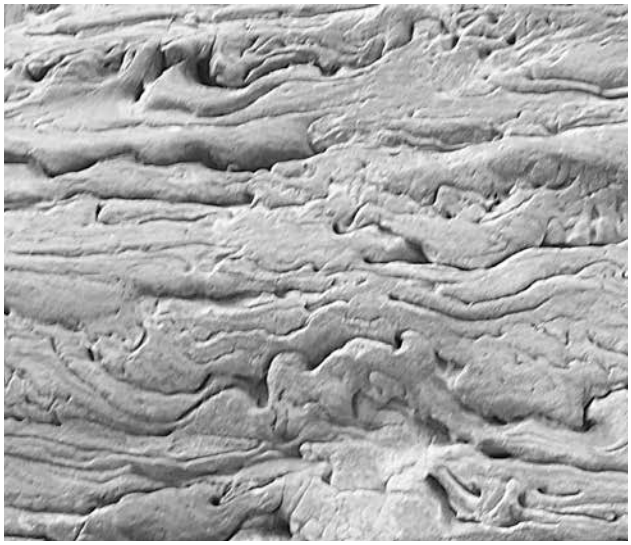
The third example of Bright Angel weakness is the

series of river (or valley) anticlines from Fishtail to Parashant, especially in the Muav Gorge, and in some tributaries (Tuckup, and Kanab). In these folds, the Muav Limestone falls away steeply (up to 60 degrees) on either side of the River, and extending back as much as 800 feet from the River (photo above). These folds

follow the River's course, rather than the structure in the surrounding plateaus. Again, an explanation is the lubricated Bright Angel Shale (or similar shaly beds in the lower Muav) slipping out and/or rebounding under the River in response to the weight of the Canyon walls (read more about it in Huntoon & Elston, 1980, "Origin of the River Anticlines, Central Grand Canyon, Arizona", USGS Professional Paper 280, and in Sturgul & Grinshpan, 1975, "Finite Element Model for Possible Isostatic Rebound in the Grand Canyon," *Geology*, Vol. 3, pp. 169–171). River anticlines seem to form where the shale is close enough to the surface that river water can get in and lubricate it. Since the fold dies out going back from the River (or trib), as further erosion widens the Canyon, the evidence of the anticlines is eroded away.

These three landforms—gravity faults, rotational slides, and river anticlines—are all explained, at least in part, by the character of the Bright Angel Shale. Even though it doesn't erode into spectacular cliffs, it's a critical part of Grand Canyon landscapes.

Oh, and by the way, the Shinumo Quartzite is a great example of a layer that thins across a fault line like Tubby talks about in his letter. It thins as it crosses the Bright Angel Fault, showing that fault was active even back then. Also, the weird marble-cake deformation in the Shinumo, right at the mouth of 75-mile Canyon (photo below) may have been caused by the earthquakes when the Shinumo was still wet sand getting jiggled over a billion years ago! For more, see Hendricks & Stevenson,



2003; "Grand Canyon Supergroup: Unkar Group" in Beus and Morales' *Grand Canyon Geology* and Daneker's 1975 nau masters' thesis *Sedimentology of the Precambrian Shinumo Sandstone, Grand Canyon, Arizona.*

Sorry we didn't get Tubby's e-mail. Allyson was out of the office for a spell, but she checked and apparently didn't receive it. But hopefully, this response will provide some fun geobits to hand out along the River!

Carl Bowman & Allyson Mathis

What is that?

In 2007, the U.S. Geological Survey (USGS) set up new solar-powered weather stations at several locations in the canyon to measure wind conditions, rainfall, temperature, humidity, barometric pressure, and eolian (wind-blown) sand transport. These stations are part of a new monitoring effort that builds on and expands an earlier study that ran from 2003 to 2006 (see BQR Volume 17:1).

Data from these stations will help USGS scientists unravel the various factors that contribute to the preservation (or deterioration) of archaeological sites along the Colorado River in Grand Canyon. The weather stations are an essential component of an interdisciplinary study that is tracking rates of erosion at archaeological sites in relation to geomorphic setting, vegetation cover, visitation impacts, and weather events. In addition, data from the stations will help us understand whether, and how, the sandbars built by the March high-flow experiment increase the amount of wind-blown sand transported up toward sand-dune areas, some of which contain archaeological sites that depend on a supply of wind-blown sand to stay covered up and preserved. Having detailed weather data from multiple locations within the inner canyon will also be useful for other biology and temperature-modeling studies.

Sand traps, with a weather station in the background.

Combining the data we've collected over the past year with data from the earlier study, some interesting trends are starting to show up. It's becoming apparent that the most rainy areas of the canyon are in lower Marble Canyon, and by a lot. The Malgosa and 60-mile area often gets two or three times as much rain as places just a few miles away. So far, this trend has held up whether you look at a single storm event or over time scales of seasons to years. For instance, a major winter storm from January 5–7, 2008, dumped 2.96 inches of rain near the mouth of 60-mile canyon. Six miles downstream, the Lava-Chuar area got only half that amount, 1.46 inches of rain, from the same storm. Hmm…where would you rather camp when the skies start to cloud over?

And yes, it's hot down there in the summer. The highest temperature this study has recorded so far was on the afternoon of July 4, 2007, near Diamond Creek, where the air temperature exceeded 122 degrees Fahrenheit in the shade. (Although weather data has to be collected out in the open to get accurate wind measurements, our temperature sensors are shaded by their plastic housing).

One important goal of this weather study is to evaluate how the wind moves sand from river-level sandbars up to higher elevation: how much sand transport occurs, in what directions, and what time of year? Understanding those processes helps predict whether eolian sand dunes (and any archaeological sites within them) might benefit from high-flow experiments and erode less because of the additional wind-blown sand supply. From the earlier work we did in 2003–2006, we estimated that five to fifteen times more sand gets blown around during the spring windy season (April to early June) than in other times of year, and that the dominant direction of sand transport is toward upstream, although that varies depending on where in the river corridor you are. In some areas, the large sandbars built by the March 2008 high-flow experiment are expected to provide new wind-blown sand that could help keep archaeological sites covered up. In other places, the main wind direction isn't quite right for the new sandbars to carry sand toward dune fields and cultural sites.

Some of these weather stations are short-term study sites where the equipment will be removed after the spring of 2009. At other places, we hope to collect data for several more years to understand long-term weather trends more accurately. If you come across one of the weather stations while on a river trip, it would help us out a lot if you can make sure that your group understands why they are there and respects them. (Not only will the data be used for the focused studies described above, but they will also provide baseline data for monitoring climate change in years to come). Feel free to chase off any feral goats that you find attacking the equipment too, that was kind of a problem last year! In the near future, we plan to post weather data from these stations on the Grand Canyon Monitoring and Research Center web site. These stations will not be in the canyon forever. While they are there, many thanks to everybody who has helped with this project—we're very grateful for your participation, and really excited about what we are learning from this work.

Amy Draut

GCRG Announcements

We Need Your Help…

Hey everybody! Happy River Season! Wahoo! The really great news is that GCRG's guide membership numbers remain strong (please keep your dues current and encourage your peers to join!). The not-so-good news is that our general membership numbers are decreasing—down about three hundred members from what they were years ago. That's significant—really significant.

Once upon a time we used to be able to say "GCRG has over 1,800 members", but slowly over time it's morphed to just barely 1,600. The attrition is slow but real. Not only does that affect us financially, but it also reduces Grand Canyon River Guides' considerable political clout.

So, *please* make a *big* push this year to get your river clients to join this river season—make sure you take GCRG membership flyers and some bqr's along on *all* of your trips.

It's critical that GCRG build our membership so that we can continue to work towards our goals of protecting Grand Canyon and the river experience. We work really hard on it. Now we need your help too. This is a direct way that you can give back. Please let us know how many brochures and bqr's you need and we'll mail them to you.

Join the GCRG Guide Email Lists

Ever wonder what the dam flows for a particular month might be, or what events might be happening that you wouldn't want to miss? Join the GCRG guide email lists! It allows us to have instant communication with the guide community about topics ranging from dam flows, to lectures, GCRG events, and first aid classes—pretty much anything guides might want to know about. Plus it gives GCRG the opportunity to reach you quickly on management issues that require public comment, which in turn provides you with a way to participate in canyon and river advocacy.

If you want to be added on our guide email list—just email to gcrg@infomagic.net and request it! Get connected!

2008 T-Shirt Design and New GCRG 20th Anniversary Mugs!

Check out the fabulous new 2008 t-shirt design by river guide/designer, Mary Williams. One can't have too many t-shirts, and especially not ones as cool as this! Order some for yourself and your friends! They make bomber presents! Just $16 for short sleeved and $18 for long sleeved.

Also, GCRG has limited edition "20th Anniversary" insulated travel mugs so you can have your java in your car or in camp and not spill a drop. Be a caffeine achiever and help GCRG! They're yours for an absurdly cheap price of $5 out the door of the GCRG office, or $8 each if we mail them to you. Such a deal! They're made of dark blue recycled plastic with white graphics. They'd make great gifts also for your river-loving friends! And when they're gone they're gone. Please order some today!

2008 GCRG t-shirt design (back), GCRG logo on front.

Adopt-a-Boatman Progress

GCRG's Adopt-a-Boatman Program is the public funding mechanism for our Colorado River Runners Oral History Project.Thank you sincerely for all your enthusiasm and support.

New full sponsorships: Brian Dierker, Fred & Maggie Eiseman, Loie Belknap Evans & Buzz Belknap.

Partial sponsorships: Dick McCallum ($400 needed), Vaughn Short ($650 needed), Serena Supplee ($360 needed), Brian Hansen ($600 needed), Ivo Lucchitta ($600 needed), Drifter Smith ($600 needed).

We now have 17 fully sponsored interviews! Check out the full Adopt-a-Boatman Program list at: http://www.gcrg.org/adoptaboatman/adopt_list.xls.

We encourage you to put any money towards the partial adoptions shown above, rather than start new ones, so please send a check to GCRG, PO Box 1934, Flagstaff, az 86002. It need not be the full amount—just whatever you can spare. Checks can be made out to GCRG and include a note that it is for the Adopt-a-Boatman program and the name of the adoptee.

Adopt-a-Beach 2008

This will be a critical year to photo-document the changes (and longevity) of the High Experimental Flow conducted in March. There are a few beaches left that need adopting: the Nautiloids (34.5 and 34.7), Nevills (75.6L), Lower Tuna (99.7L), and Lower Bass (108.3R). Call the office today at 773-1075 or send an email tp gcrg@infomagic.net if you're interested in adopting a beach. It's easy! Thanks!

Lynn Hamilton

Farewell

Frank McNeel Bird

Frank McNeel Bird best known as "Max", age 59, passed away February 7, 2008, in St. George, Utah. Max was a native of Marietta, Georgia, and graduated from Marietta High School in 1966 and West Georgia College in 1971. Max first ran the Grand Canyon as a passenger in '70s. He came as a passenger on a commercial trip for crate. He had good energy and was adopted into the crew immediately. His main occupation was builder and carpenter, but he came back almost every summer as a swamper for crate and Fort Lee Company. Max was a participant in the epic Fort Lee Company three-day "wall-to-wall, and tree top tall" moonlight rubber boat derby that occurred at Pearce Ferry in the late '70s . He then went on to become a "boatman" for Sleight Expeditions and Grand Canyon Expeditions. His trademark was that he had a birthday on every trip, which was a great reason to have a party. Max was always keen to have a good time and will be remembered for his southern accent, warm smile, good nature and easy going attitude.

Walt Gregg

Terry Brian

Late word as the spring issue is going to press: Terry Brian, veteran Colorado River boatman and adventure travel guide, died in the Fiji Islands on May 24. He drowned while snorkeling near Pacific Harbour, but few details have been confirmed at this time.

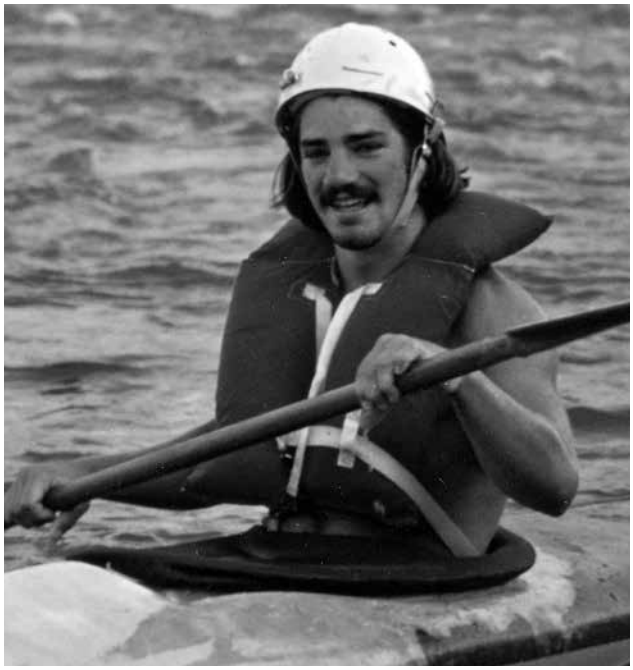
Terry rowed his first Grand Canyon trip in 1972 and never looked back. When it wasn't the Colorado, he had a way of turning up anywhere from the headwaters of the Amazon to Alaska's North Slope, from Tierra del Fuego to one of those nightmarish, tumpline-portages deep in the machete wilds of Venezuela. I don't know how many times I heard someone say, "Guess who I bumped into on . . ." And if I guessed it was Terry, chances were I'd be right.

If he wasn't floating down a river, he'd be leading a party up a peak somewhere in the Andes. Terry once sent us a photo of him standing on a 20,000-foot summit with a pair of crampons strapped to his flip flops. A gag shot, probably, but with Terry you never knew. I once watched him climb the Walter Powell route out of Grand Canyon carrying an 80-pound pack–and wearing flip-flops.

In a letter from the Straits of Magellan he mentioned his hand freezing to the throttle in a whiteout. "Pay's bad," he wrote, trying to lure me down, "but adventure's good." On another trip he spent 13-hour days trekking in rubber boots through peat bogs in knee-deep mud. Then he'd be off to the tropics, boarding his clients in the local bordello before heading into the thick tangle of it. "With all the snakes, spiders, and bitchos," he wrote, "the safest place is in the river with the piranha."

Most of his exploratory trips happened in South America, where he made some first descents. And no matter how tight the bind, Terry had a laugh that took the edge off the situation. As we pulled in at the end of a river trip, purposely run in a very small boat, he looked at me with a grin. "Well," he said, "we cheated death once again." Then he gave that big laugh of his to let me know not to take even that too seriously. He took pure joy in the adventure of it all, and I'll miss him. Un abrazo, amigo.

Scott Thybony



Terry Brian as a second-year OARS guide, 1973. photo: Bruce Helin

Guide Profile

Jason Mackelprang, Age 24

Where were you born and where did you grow up? I was born in Cedar City, Utah in March of 1980, but I grew up in Fredonia, Arizona.

Who do you work for currently (and in the past)? I am working for gce (yeah northsiders—just kidding) but I have run boats for azra, Western, oars, Grand Canyon Youth, and a reveg trip as well.

How long have you been guiding? I swamped my first trip in '99 for Cleve Anderson at gce, but I ran my first boat for azra in '04.

What kind of boats do you run? I mainly run S-rigs but I have run J-rigs, snouts, C-crafts or modified J's—I think they are called…azra's motor-rig anyway. And I row as well. 14 miles loged in a dory…fun boats.

What other rivers have you worked on? Mainly I have worked in the Grand, but I have received a paycheck from the San Juan and the Rio Espolone—a class 11 plus river in Chile—but that is it.

What are your hobbies, passions, dreams? Of course I love the rivers and have been learning how to kayak and long to do more of it, but I grew up on horses. Roping and riding. If some how I can combine the two for the perfect schedule…what a dream!

Married, family, pets? Not married, I have two brothers Brye 20 and Chad 19; one sister Naomi 14 and two step sisters Mackenzie 15 and Shaley 13. And my parents thought I was trouble! Brye, Chad and Naomi have all been down with me and I am working on Mackenzie and Shaley. I also have three horses; Misty, Nasha, and Senorita Azul. Last one pending.

School/area of study/degrees? I attended college at Southern Utah University and received a bachelors degree in Criminal Justice. That's right. I know…hard to believe.

What made you start guiding? I graduated college and it just seem like the next move. Of course I love the canyon and growing up so close to such a phenomena, I thought it was a perfect occupation for me.

Who have been your mentors and/or role modes? I have been influenced by many of different people from many of different walks of life, but those who helped me in my career as a river guide are Cleve Anderson, Fred and Art Thevenin, O.C. Dale, Brad Dimock, RJ Johnson, and Dave Spillman.

What do you do in the winter? Well this winter I was breaking horses, but I have swung a hammer, catered, and traveled in past winters.

Is this your primary way of earning a living or do you combine it with something else? Yes this is my primary income.

What's the most memorable moment in your guiding career? Running my first boat.

What's the craziest question you've ever been asked about the canyon/river? Not the craziest but the most annoying, "How deep is the water".

What do you think your future holds? Hard tellin' not knowin'!!

What keeps you here? The freedom you have in guiding, being able to alter the day's plan because of an unusual opportunity and the certainty of the unexpected events that can happen and having to just deal with it. Breaking the routine of our clients lives and opening their eyes to a whole new world and seeing things again, for the first time, through their eyes.

GTS Success!

Just talk to any of your river buddies who attended this year's gts. They'll tell you it was one of the most *outstanding* gts events—*ever*! Hatch River Expeditions warehouse was bulging at the seams with over 300 people who laughed, learned, and shared stories over the March 29th weekend in Marble Canyon, az. Record numbers, outstanding content, great food, lots of dancing, decent weather—what more could you ask for!

Charly Heavenrich (a guide for Canyon Explorations and Expeditions since 1978), told us:

> The film with Don Briggs, Martha Clark, and Dave Edwards was rolling-on-the-beach hell-arious. Only river guides could really appreciate what they must have gone through with the group and that ego-maniacal leader. 97,000 cfs, and he thought they needed an "energy monitor" on each raft to make sure the energy was going in the right direction. Huh???? My only regret from the best gts ever was we didn't take the entire weekend for '83 stories. We should include more stories next year as well, since '84 and '85 were also high water years. Here's to eddy fences, whirlpools, and boils, and "The Hole" at Crystal…

From our celebration of the 25th anniversary of the 1983 high water event in Grand Canyon, to the groundbreaking panel discussion of tribal concerns and values, to our ropes clinic, Saturday's agenda spanned jaw dropping stories, cultural history, and practical hands-on knowledge. Sunday's schedule covered such diverse topics as dragonflies, flood flows, and overflights. We also managed to inform the guide community about river patrol issues, health topics such as mrsa and tolio, crmp implementation, archaeological projects, dam operations and much more. Not to mention that many guides took advantage of the fantastic services offered by the Whale Foundation Health Fair.

So much good stuff simply defies description, and a dry recap gives you no flavor of how truly outstanding the weekend was (superlative, amazing, an absolute blast…) so we'll let the pictures tell the story…

Thanks to everyone for working to make this event such an enormous success: Hatch River Expeditions, the Grand Canyon Conservation Fund, the Grand Canyon Association, Joelle Clark and the Native Voices on the Colorado River Program, the outstanding gts speakers, Grand Canyon commercial river outfitters, Grand Canyon National Park Superintendent—Steve Martin, gcrg president and emcee—Sam Jansen, Fred Thevenin and the azra crew (for the ropes clinic), Simone and Tim Stephenson and all the outstanding cooking crew, Mogollon Brewery, Cork 'n Bottle, Toucanet Coffee Company, Arizona Music Pro, Gravy (the band), Lew Steiger (video), Richard Quartaroli (tech work), gts vendors, all raffle contributors, and our super- helpful gts volunteers. From funders, to partners, speakers, supporters, and attendees, the event came together seamlessly.
We appreciate it!

Lynn Hamilton

GTS Land photos: Pamela Matheus


AIRA


"Like all good adventures, running the Grand at 93,000 cfs sounded like a good idea in a Flagstaff pub..."

Every Picture Tells a Story—
GTS River Trip 2008

Again, pictures say it better than we ever could. Take guides from eleven different companies, a motor-rig, four oar boats, a kayak, a duckie, great speakers, fun hikes, camelthorn pulling projects—shake and stir, and you've got the gts river trip!

Our everlasting thanks to Okie Jones and Breck Poulson from Wilderness River Adventures (wra) for their invaluable logistical help in putting this trip together, Nate Jordan (Outstanding Trip Leader and poster-boy for wearing safety glasses at all times), Alan and Ariel Neill (the rest of the bomber wra crew), all gts participants, the Grand Canyon Conservation Fund, Grand Canyon river outfitters, Ceiba, gts shuttle and gear truck drivers, and last but not least our gts river trip speakers: Greg Woodall, Matt Walburger, Geoff Carpenter, Kirstin Heins, Peter Huntoon, and William Talashoma.

GTS River Trip photos: Greg Woodall


WRA

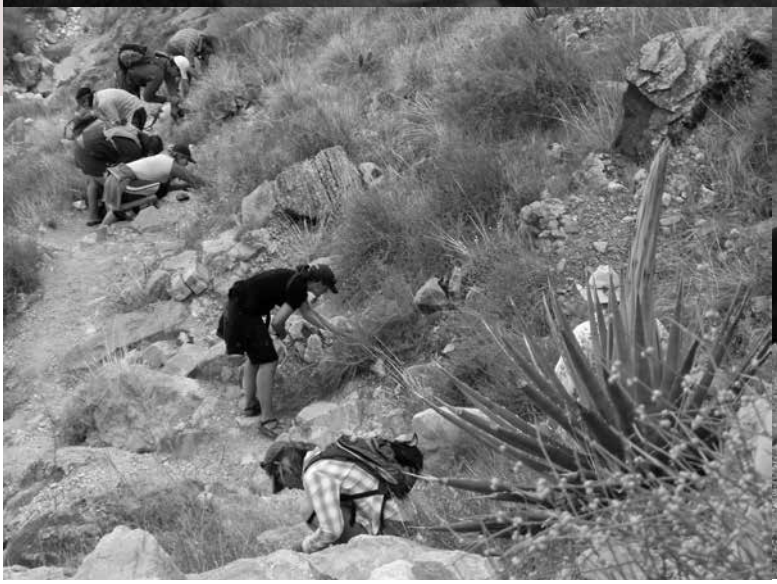


Photo captions — top to bottom, left to right:

Page 13 :
- New sand at the USGS Inscription stop
- Carbon Creek hike when it not HOT and DRY
- Carp catching a Pink!
- Anoter great hike

Page 14 :
- Matt Kaplinski talks the science of sediment and beaches (GTS 08 photoed a bunch of Adopta-Beaches and set new photo points as needed)
- Killer Jay with a bag o' weeds (Sahara Mustards at North Canyon and elsewhere, Camelthorn clipping at Unkar and Crystal, GTS '08 pulled over 10,000 non-natives!!)
- Ariel Neill (WRA) talks history at the Ross Wheeler on lovely Spring day
- GTS '08
- "Team Tolio" We showed Matt Walburger, the Public Health Service Officer, what Tolio (and river runner life) is all about, then we jump-started the "Flagstaff Area Response to Tolio" at the doctor's office between gear clean-ups (Thanks to Craig for shuttling the infected to Wyatt Woodard!)
- Peter Huntoon does a "laying on of hands" for Grand Canyon geology

Page 15 :
- Playing with Fire
- Matkat mouthfull
- Weeding the Saddle Canyon Trail— "Hey, we've got BOTH kinds of nasty mustards here!"
- Something funny going on at the Redwall edge

MRSA Information

Have you been diagnosed with a Staphylococcus aureus or mrsa infection? Below are answers to some common questions…

What is Staphylococcus aureus or Staph?

Staph is a type of bacteria. It may cause skin infections that look like pimples or boils. Skin infections caused by Staph may be red, swollen, painful or have pus or other drainage. Some Staph (known as Methicillin-Resistant *Staphylococcus aureus* or mrsa) are resistant to certain antibiotics, making it harder to treat. The information on this page applies to both Staph and mrsa.

Who gets Staph infections?

Anyone can get a Staph infection. People are more likely to get a Staph infection if they have:

- Skin-to-skin contact with someone who has a Staph infection
- Contact with items and surfaces that have Staph on them
- Openings in their skin such as cuts or scrapes
- Crowded living conditions
- Poor hygiene

How serious are Staph infections?

Most Staph skin infections are minor and may be easily treated. Staph also may cause more serious infections, such as infections of the bloodstream, surgical sites, or pneumonia. Sometimes a Staph infection that starts as a skin infection may worsen. It is important to contact your doctor if your infection does not get better.

How are Staph infections treated?

Treatment for a Staph skin infection may include taking an antibiotic or having a doctor drain the infection. If you are given an antibiotic, be sure to take all of the doses, even if the infection is getting better, unless your doctor tells you to stop taking it. Do not share antibiotics with other people or save them to use later.

How do I keep Staph infections from spreading?

- Wash your hands often or use an alcohol-based hand sanitizer
- Keep your cuts and scrapes clean and cover them with bandages
- Do not touch other people's cuts or bandages
- Do not share personal items like towels or razors

If you have any questions about your condition, please ask your doctor. For more information, please visit: http://www.cdc.gov/ncidod/dhqp/ar_mrsa/html

Information presented by the Center for Disease Control and Prevention (cdc).

1958 High Water!

What, high water in 1958? Did I get the year wrong? Many river runners have heard that 1957 was the last high water through the Grand Canyon prior to the influence of Glen Canyon Dam on the Colorado River. The classic Duane Norton photo, shown here of P.T. Reilly rowing, Joe Szep and Susie Reilly riding past Boulder Narrows on June 11, 1957, shows the Colorado River at 122,000 cubic feet per second (cfs) flowing considerably over the top of the boulder.[1] According to the usgs, the maximum discharge recorded at Lees Ferry that year was 126,000 cfs, on June 12, one day after this photo.[2]

So, why am I now discussing 1958? Well, for one thing, this year's gts highlighted the 25th anniversary of the 1983 high water releases of over 90,000 cfs from Glen Canyon Dam. It was a great, fun program, so I'd thought I'd continue the high water theme and go back another 25 years, this time to discuss the 50th anniversary of the 1958 high water. Another reason is that I think the driftwood on top of Boulder Narrows is there from 1958, not 1957 as most believe.

Two years ago, Chris Magirl shared a copy of his dissertation with me.[3] You might recognize his name as co-author, with Bob Webb and Diane Boyer, of several bqr articles on "*The Changing Rapids*" of the Colorado River and the Grand Canyon. It included a photo match of the afore-mentioned Norton photo and one in 2005, with the caption "The driftwood left stranded on top of the mid-channel boulder was left by the high water of the 1957 flood, the last large flood in Grand Canyon before closure of Glen Canyon Dam." This got me to

pondering—given that the 1983 high flow pushed the driftwood downstream and further up the rock slope of the boulder, could a high flow between those of 1957 and 1983, particularly 1958, have been responsible?

As I started looking for confirmation on post-1957 and pre-dam high flows, pictorial/ anecdotal or otherwise, I contacted some mid-1950s boaters. Gaylord Staveley reminded me that, "1957 had a double peak, the high one in June and another, lower, one in July. We left Lees on July 1 on 99,000 cfs, the lower of the two peaks, and when we went by Boulder Narrows the river was still covering the boulder, making a h-u-g-e hole behind it."[4] This immediately confirms that the driftwood on the Boulder is not from the receding edge of the June high of 126,000 cfs, but possibly a more-likely lower flow of around 100,000 cfs.[5]

However, the 1958 high flow was greater than that second one in 1957. USGS records indicate a peak on June 1st and 2nd of 104,000 cfs.[6] Because of what Gaylord reported above, this flow also had to have overtopped Boulder Narrows, thus washing away any driftwood from the second peak of 1957, and depositing new driftwood on the receding edge. Bob Rigg may have some film footage, which would help to confirm. I am hoping Bob finds the film, but I am also hoping that someone, such as Dick McCallum, might have some photos of Boulder Narrows between July 4, 1957 and May 26, 1958.[7] If "large flood" can be defined as over 100,000 cfs, then 1958 was the last big flow prior to Glen Canyon Dam.[8] Happy 50th!

*C.V. Argonautus (*a.k.a. *Richard Quartaroli)*

References:

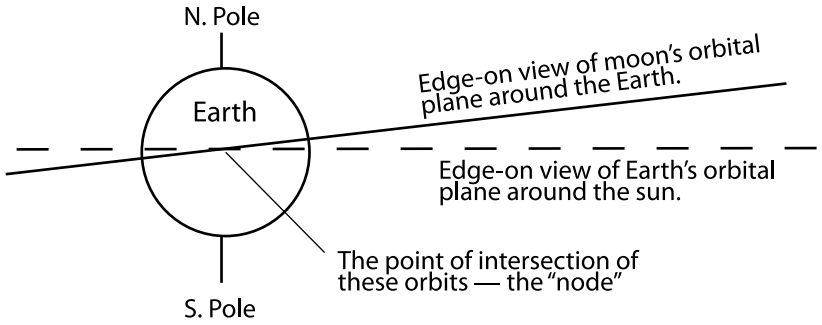
1. P.T. Reilly Collection, Northern Arizona University Cline Library NAU.PH.97.46.115.63.
2. USGS Water Supply Paper 1513, *Surface Water Supply of the United States 1957 Part 9. Colorado River Basin*, p. 349.
3. Christopher Sean Magirl, *Bedrock-Controlled Fluvial Geomorphology and the Hydraulics of Rapids on the Colorado River*, 2006, University of Arizona.
4. Gaylord Staveley, 18 April 2008 email.
5. USGP WSP 1513 indicates a discharge of 99,800 cfs on June 2 and 3, 1957.
6. USGS Water Supply Paper 1563, *Surface Water Supply of the United States 1958 Part 9. Colorado River Basin*, p. 327. Problems with the records for the various Lee's Ferry gages and recalculation of high flows can be found in David J. Topping, John C. Schmidt, and L.E. Vierra, Jr., *Computation and Analysis of the Instantaneous-Discharge Record for the Colorado River at Lees Ferry, Arizona—May 8, 1921, through September 30, 2000.* Topping is at the USGS/ GCMRC; I understand that he and Glenn Eldo Bennett have a model in which you can input a discharge and get the stage relationship, something I plan to do soon.
7. If you have such photos, please contact C.V. Argonautus, c/o richard.quartaroli@nau.edu, 928-523-6501.
8. The previous Magirl citation contains a figure of the Annual Peak Flood Series at Lees Ferry, p. 42. It is also contained in Christopher S. Magirl, Robert H. Webb, and Peter G. Griffiths, "Changes in the Water Surface Profile of the Colorado River in Grand Canyon, Arizona, between 1923 and 2000," *Water Resources Research*, Vol. 41, W05021, doi: 10.1029/2003WR002519, 2005, p. 2.

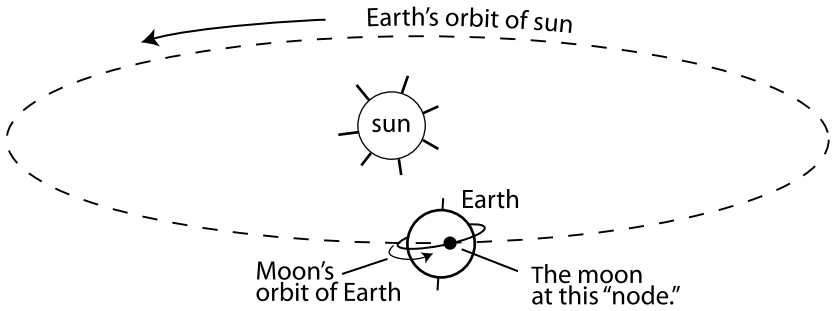
Your Celestial Friends

Of all the features offered us by the night sky, perhaps none has held its millennia of viewers under a greater spell than the Moon. The Romans named it *Luna*, and the Greeks *Selene*, but modern English has given no distinctive moniker to our sole Earthly satellite: it is just "the Moon." But its impression upon us is no less grand for this. On a dry, clear night a full moon can give enough light to read by, while a new moon allows for truly magnificent stargazing. Familiarizing ourselves with why and when the Moon changes phases, its role in eclipses, and its many surface features, can further connect us to an ancient science and mysticism, as well as to our friends around the world, with whom we share its nightly presentations.

The Moon makes a complete revolution of the Earth in 29.5 days, a period of time roughly equivalent to our calendar's month; fittingly, both "moon" and "month" are derivatives of the same word: moneth. It is easier to understand the Moon's monthly phases if we first understand that the direction in which the Moon orbits the Earth is the same direction that the Earth revolves on its own axis: counter-clockwise as seen from "above." The Moon therefore rises in the east and sets in the west, as do the Sun and the stars. But the Moon loses ground as it chases the Earth around in its orbit, falling behind by 50 minutes in a 24-hour period. This daily "retardation" gives it the apparent effect of moving thirteen degrees eastward along the backdrop of the stars from one night to the next. This accounts for the changing phases of the Moon, and accordingly, the rising and setting times of such, a relationship we can better understand by briefly following the Moon through a complete cycle.

We know that the Moon is illuminated by reflected sunlight. When it lies directly between the Sun and Earth the Moon is said to be "new," and we do not see any of its reflective surface area. A day later it has moved thirteen degrees eastward in our sky, and it closely follows the Sun across the sky throughout the day, though generally too close to notice it until the Sun has set. Because it has moved slightly out of its direct alignment with the Sun and Earth, we are now able to see a small crescent of its illuminated surface, for fifty minutes, until it also sets in the west, behind the Sun. Each day, as the Moon moves further out of alignment with the Sun and Earth, we see its illuminated surface gradually increase. It continues to chase the Sun at a greater distance each day, so that one week into its cycle it rises at mid-day as a half moon, and remains visible for the first half of the night.





The upper diagram illustrates the difference in the inclinations of the Earth's orbit of the sun, and the moon's orbit of the Earth, and the resulting node point in view.

The lower diagram shows the moon when it is full, on the opposite side of the earth from the sun. In this example, it is in this phase while intersecting the node of its orbit and Earth's orbit. A lunar eclipse would result.

Its nighttime representation then begins to exceed that of the daytime, and in another week it has moved opposite the Earth from the Sun and is fully illuminated, rising at sunset and setting at sunrise. From here on it decreases in size, and in another week we again see a half moon, though this time the other half, rising at midnight and setting at mid-day. Its cycle is complete when, one week later, it has caught up with the Sun and is again a new moon.

By sheer luck the Moon and Sun appear to be the same size in our sky, .5 degree. This is relevant in understanding the phenomenon of an eclipse, as also relevant is an understanding of the relationship between the Moon's orbital plane around the Earth, and the Earth's orbital plane around the Sun. The Earth's orbital plane, as discussed in previous articles, is called the "ecliptic," and is the path across, or ring around our sky along which the Sun and planets appear to travel. The Moon's orbit also traces a path across, or ring around our sky, but it is offset of the ecliptic by five degrees, as shown in the upper diagram. By visualizing these orbits as two rings, one can imagine that there are two points at which these rings intersect. These are called the "nodes."

Because the Earth moves around the Sun throughout the year, these nodes do not hold fixed positions on the Earth's orbital ring; rather they move around it, and therefore come into Sun-Earth alignment during any and all of the Moon's phases. When a new moon, on its orbital path, crosses this node with Earth's orbit, it is then not only approximately between the Sun and Earth, but exactly between the Sun and Earth. Because both the Moon and Sun cover .5 degree of the sky, the Moon for this time perfectly blocks, or "eclipses," the Sun. The exception to this is that the Moon, in its elliptical orbit of the Earth, is sometimes further away from us and consequently appears slightly smaller. An eclipse during this "apogee" of the Moon is called "annular," and it leaves a ring of sunlight revealed around the Moon. But with any solar eclipse the alignment is so precise that the latitudinal "path of totality" from which it can be viewed is never more than 160 miles wide, though the longitudinal path of observation will be thousands of miles long, as for a few hours the Sun and Moon remain in alignment while moving across the sky.

As can then be reasoned, a lunar eclipse occurs when a node is crossed during a full moon; in this alignment the Earth is exactly between the Sun and Moon. Earth's shadow is then falling on the Moon, but because this shadow diminishes the further away from the Sun that it is, it is a very narrow field the Moon must enter to fall under it, which makes lunar eclipses even less frequent than solar. But because, when aligned, this shadow does completely cover the entire visible surface of the Moon, the eclipse can be observed not just in a narrow band, but by half of the world: everywhere it is nighttime. The specific color of an eclipsed moon is determined by the chance atmospheric conditions of that particular night.

Observing the Moon's many surface features can best be done during its "gibbous" phase, a few days before or after it is full, when sunlight is cast upon it at an angle. This produces longer shadows and better relief of its features, the most striking of which is perhaps the Sea of Tranquility, an ancient lava field visible to us as a dark spot in the middle of a first quarter moon. Because Earth's gravity holds the Moon in a fixed position, we are acquainted with only one of its sides, though all its parts receive equal distribution of sunlight throughout its cycle. We sometimes see the Moon tracing a path quite low along the horizon, and sometimes quite high, and this is accounted for by its variation of five degrees above or below the ecliptic. With an understanding of this relationship to the ecliptic, it can be easily reasoned that throughout the world our Moon is seen not only in the same phase, but also within the same backdrop of the sky.

How lucky we are to be preceded by centuries of brilliant astronomers and mathematicians, whose calculations have helped make sense of the cosmos. Having covered, in the past four articles in previous bqrs, the celestial mechanics of the Sun, the stars, the planets, galaxies, meteors and comets, and finally the Moon, all of which dutifully guide us into peaceful dreams night after night, I will conclude in verse:

> "Though my soul may set in darkness I will rise
> in perfect light. I have loved the stars too fondly
> to be fearful of the night."
>
> —An old astronomer to his pupil, Galileo (Staal, intro.)

Teddy Anderson

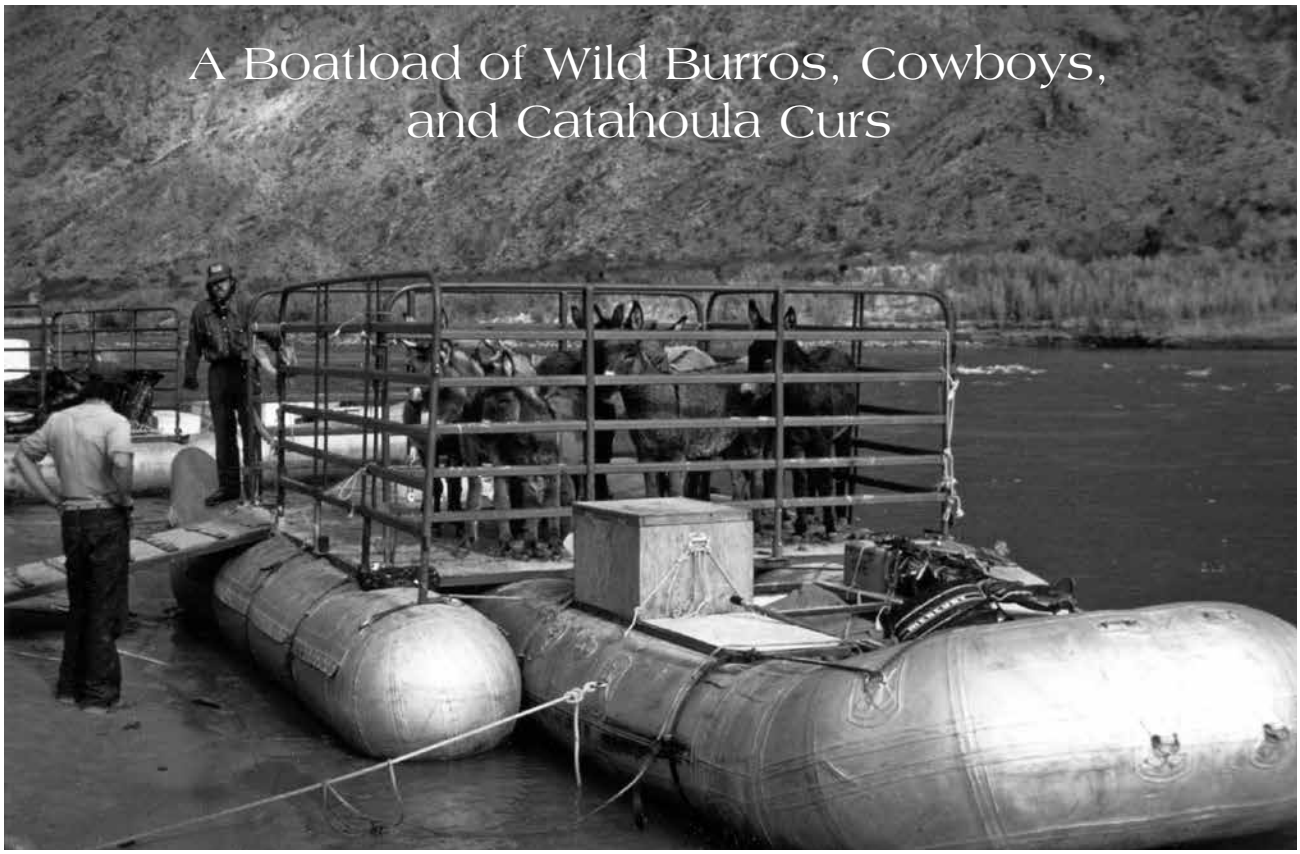
References:

Staal, Julius D. W. *The New Patterns in the Sky*, Published by McDonald and Woodward, 1988.

The National Audubon Society Field Guide to the Night Sky, Published by Alfred A. Knopf, Inc., 1997.

Rey, H. A. *The Stars*, Published by Houghton Mifflin Co., 1997.

A Boatload of Wild Burros, Cowboys, and Catahoula Curs



The roundup had already begun by the time the river crew got involved. Head wrangler Dave Ericsson, a champion roper, had gathered a team to catch burros running wild in Grand Canyon National Park. He called them "the greatest bunch of rough country cowboys ever put together." At the height of the roundup, the cowboys, their dogs, and the wild burros found themselves on a floating corral, running the rapids of the Colorado River.

Between 1924 and 1969, the National Park Service routinely culled the feral herds, shooting 2,860 burros. Introduced by prospectors in the late 1800s, they were considered an exotic species. But a generation raised on Marguerite Henry's *Brighty of the Grand Canyon* protested the action. As public sentiment swung in favor of wildlife protection, the park service stopped the hunts. By the mid-1970s, the burro population boomed and began overgrazing sections of the park, especially visible along stretches of the Colorado. The rangers, supported by research documenting the harmful impact of burros, decided to completely eliminate them from the national park.

As the controversy heated up, the media jumped in. The story made the front pages of newspapers around the country, and animal rights groups mobilized. Angered by what they saw as a policy of "burro-cide," protesters carried signs reading, "Save Our Asses." But major environmental groups, including the Sierra Club and Audubon Society, backed the park service decision.

Through his Fund for Animals, writer and activist Cleveland Amory, began running ads showing a cute burro with the warning, "If you turn the page, this burro will be killed." The donations rolled in, and he soon had raised $500,000 for the rescue effort. The park service agreed to give him a chance to capture as many as possible and put them up for adoption. The roundup began in earnest during the fall of 1980, and the idea of floating burros down the river soon followed.

A few friends who ran rivers heard about the operation. "We had a horse at the time," said Roabie Johnson, "and wanted to add a burro to the collection." Russell Sullivan suggested they get a river permit and haul it out by boat. "Then we thought, if we're going to put a corral on a boat, we could get a whole herd. Maybe they'd pay us to haul them out."

At the time, boatmen Jerry Johnson and Russell Sullivan were operating bulldozers near the South Rim. One day they broke for lunch and saw the burros being airlifted by helicopter out of the canyon. "We were sitting there eating our lunch," said Jerry, "watching these burros fly over."

They introduced themselves to Ericsson and proposed floating the burros out by boat. Since helicopter time was so expensive, the river made sense in the remote lower canyon—if they could pull it off. They sealed the deal with a handshake and began reconfig-

uring two pontoon boats, 33-feet long. Russell decked each with a wooden platform, enclosed it with corral fencing, and rigged a fold-down ramp. The river crew also included Mark Applequist, Dave Moultan, Bill Threvicic, and Hugh Turner. They shoved off from Lees Ferry in early January, 1981.

"We were supposed to meet the cowboys at Parashant Wash at high noon," Jerry recalled. Instead, the roundup crew had trailed a remuda of horses down the Whitmore Wash trail and made camp ten miles away. "We were sitting there drinking Piña Coladas, and they didn't show up, they didn't show up. Finally we heard they were lost." To retrieve their passengers, they had to fly the boats back upriver.

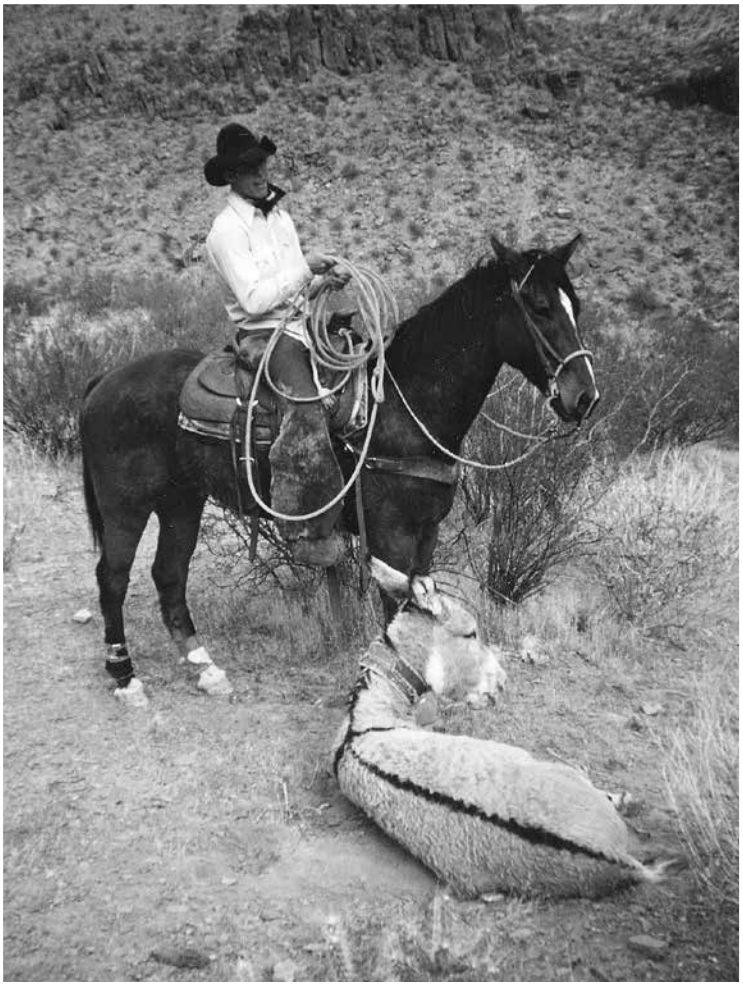
"They were cowboys off cattle ranches," Russell said. "They were used to living out in the middle of nowhere in line shacks and sleeping on the ground." The boatmen were invited to eat with them the first evening. "Cowboy Jimmy fried some steaks in deep grease on a big campfire, and we had deep-fried steak for dinner. The comment from the cook was, 'Well, 'tweren't good, but it hit the dent.'"

In addition to their horses, the cowboys brought with them a few Catahoula Curs to help with the roundup. Ericsson claimed they were a special breed of hound designed to chase burros in canyons without injuring them. At least that's how he sold the idea to The Fund. Unfortunately the dogs soon disappeared. The cowboys thought mountain lions had killed them, but the boatmen figured they ran off and got lost. "We joked," Jerry said, "about having to start a removal program to get rid of the dogs."

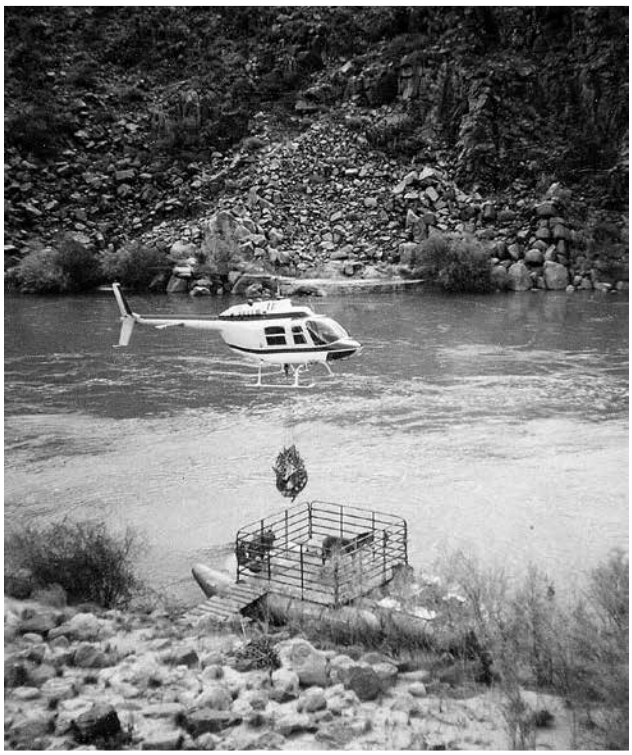
From Whitmore, the combined crews headed down-river. "It was thrilling for the cowboys," said Roabie, who hired on as cook. "I don't think any of them knew how to swim."

Two helicopters were used to scout the side canyons branching away from the river. Pilots Dan O'Connell and Randy Stewart would haze the burros down canyon to the waiting cowboys. Or they'd have the dogs jump out of the chopper from a hover and work the burros to where the horsemen could chase them rodeo-style. Lariats spinning overhead, dust flying. "They'd rope them," Russell said, "and bring them down to the river. The burros were really docile once you had a rope on them."

The cowboys also caught the burros directly from the helicopter. A lariat was rigged to the end of a long metal rod, and a cowboy dropped it over the burro's neck and then tossed out a hook made from rebar. After it snagged on a rock or bush, he jumped out and tied the animal. If the river was too far away, the chopper would sling load the burro right onto the floating corral. No tranquilizers were used.



When near the river, they only had to shove the animal up the ramp, using its long ears to steer it. "We'd



At Diamond the river crew off-loaded the animals and placed them in a holding pen. "Once," Roabie said, "they lowered a jenny into the pen that was in heat, and the jacks all went crazy. They started fighting and mating. The cowboys lined up lawn chairs, watching." A cowhand learns to take his entertainment where he can find it.

After unloading the burros, the crew derigged the boat and flew it back upstream in five loads. They made about twenty trips during the roundup. "We rigged and derigged a tremendous number of times," Russell said, "moving that boat upstream and getting a new load of burros."

To Cleveland Amory the burros being held at Diamond Creek looked hungry. So he made daily runs down the rough, 24-mile dirt road in a rented Cadillac with a bale of hay in the trunk. Amory spent his nights in a Seligman hotel and often flew down to the river to check on the operation. While sincere in his love of animals, he was out of his element. He tried to fit in and dress the part, but his spotless black Stetson and custom-tailored western outfit gave him away.

just push the burros on by hand," Russell explained. "We'd get two guys and lock hands together behind the burro's rump, and then steer it with a free hand, so he couldn't turn around and bite you."

Once they had gathered a boat-load of about a dozen burros, the crew headed downriver to Diamond Creek. The animals never panicked and appeared to handle it better than some human passengers. To run a rapid, Russell faced the boat upstream and motored against the current. "We only had two rapids of any merit to go through," he said, "205 and 217. I would run the boat backward through those and go very slowly and gently. Occasionally a burro would fall down, but he'd just get back up. We ran the burros through, and there was never a problem."

When practical, they also transported the horses by boat. "We did not run them through the big rapids," Russell added. "We walked them around because they were very valuable cutting horses." During one run, they spooked and ran to the side, shifting enough weight to submerge a pontoon. High-siding by the crew had no effect, and the boat soon settled down.

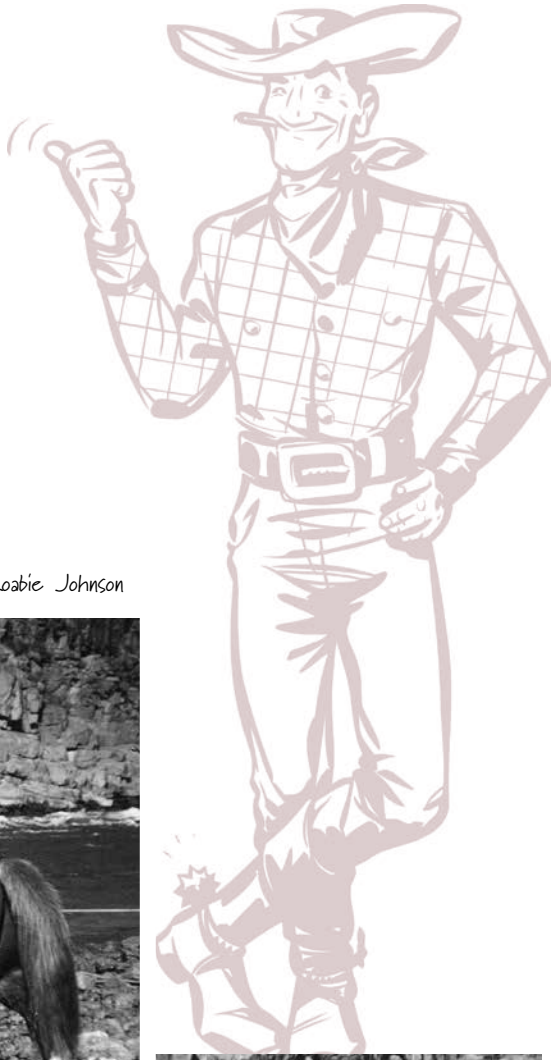
"He wouldn't swat gnats," Roabie said, "because he didn't want to hurt animals. Then his eyes swelled shut. He was also a vegetarian—but ate bacon if it was well cooked." She found the cowboys weren't as particular about their food. The previous cook, who quit after marrying one of the wranglers, was a Mormon and had refused to make coffee. "So long as I made coffee for them," Roabie said, "they didn't care a whole lot what I fed them."

At the end of the roundup, Jerry asked one of the cowboys what he thought of the Grand Canyon. "I'm so glad to get out of there," he told the boatman. "It's such a damn rough place to work."

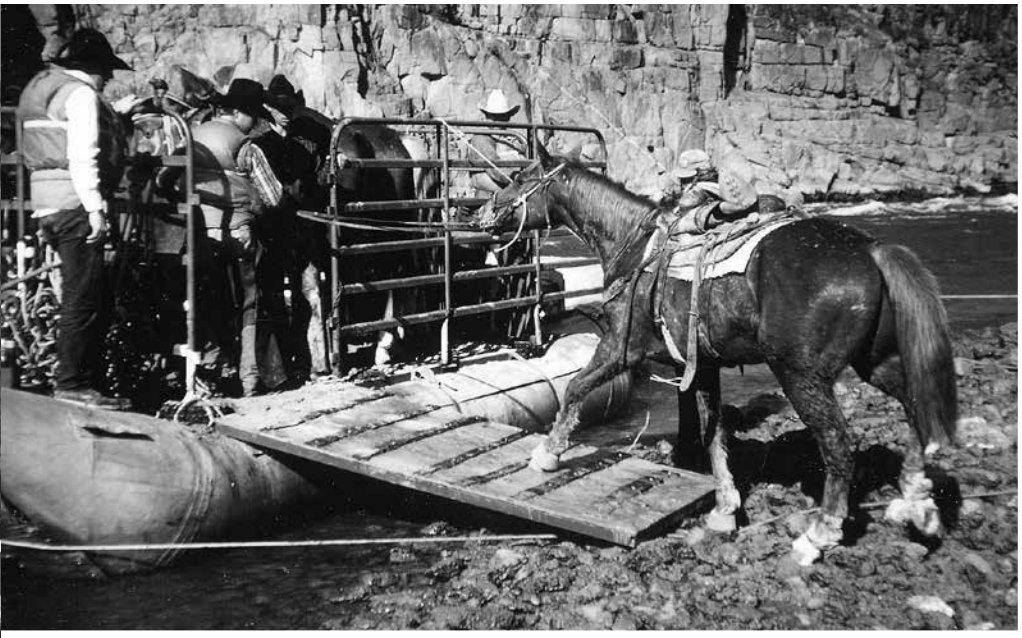
The scorecard:

- Burros removed during the eight-month roundup: 583.
- Burros transported by boat in one month: 100.
- Cost per animal rescued: more than $1,000 a head.
- Burros lost: ten during the airlift, one by falling off a cliff, zero by river.
- Missing in action: three Catahoula Curs.

Scott Thybony



photos: Roabie Johnson



High Flow Experiment of March, 2008

Whew…we finally did it! What a relief to know that, in spite of procedural delays, the Adaptive Management Work Group (amwg) convinced Interior Secretary Dirk Kempthorne to go for it…to run another artificial flood release from the dam through Grand Canyon in early March this year. We hope that it created a positive effect on the Colorado River ecosystem. Scientific monitoring and research will tell the tale in the coming months.

Sediment-triggered "flood"

The agreed upon sediment "trigger" was far exceeded during the big region-wide storms in October 2006; then again with monsoon season runoff into Grand Canyon August 2007. The idea is that when we get sufficient tributary sand poured into the canyon below the dam, we then run a big release from the dam to churn it up and deposit it in the eddies along the river bank to rebuild sandbars. This is a Beach Habitat Building Flow (bhbf).

During a bhbf much of the sand is lost to Lake Mead. But, the hope is that sand bar ecosystem habitat is sufficiently renewed for native endangered fish, archaeological sites, and camping beaches. Although some of the new sediment inputs were transported out to Lake Mead before the flood, enough sand remained in the channel this spring to still warrant a bhbf in March.

Why do a Beach Habitat Building Flow (bhbf)?

Most of the fine sediment (90 percent to 95 percent) that would have normally come through Grand Canyon each year collects in Lake Powell behind Glen Canyon Dam. Between five percent and ten percent still enters Grand Canyon from the Paria and Little Colorado Rivers and local tributaries. So, in the post dam era, there is very little sand to work with if we are to sustain sand bars in Grand Canyon.

The clear water releases from the dam are "hungry" to erode and transport sand from Grand Canyon. The only feasible way to sustain this important habitat and landscape feature is to run periodic bhbfs. A single bhbf will not permanently restore the sandbars, erosion will eventually take them away. So, bhbf's must be released whenever the sediment trigger is exceeded in order to retain as much sand as possible in this post-dam era.

Can flows be regulated to not erode sand bars?

We aren't sure yet. The scientific community states it this way: "Is there a flow-only (non sediment augmentation) operation that will restore and maintain sandbar habitats over decadal time scales?"

We do know that:

1) Sand erosion increases exponentially with discharge.

Interior Secretary Dirk Kempthorne opens the jet tubes.

Detail of jet tubes.

2) Fluctuating flows erode and transport more sand than steady flows.
3) A monthly volume of 610,000 acre-feet will retain sand in the system but a monthly volume of 850,000 acre-feet will remove sand from the system. We do not know yet know what monthly volume is the "break-even" point where there is no net gain or loss of sand over time.

Secretary with AMWG members (left to right): Dave Garrett, Science Advisors; Mark Steffen, Federation of Fly Fishers; Andre Potochnik, Grand Canyon River Guides; Dirk Kempthorne, Secretary of the Interior; Brad Warren and Clayton Palmer, Western Area Power Administration.

Can we "break even" with sand bar sustainability?

The "break-even" point would be a useful thing to know. This can be accomplished by asking the scientists to select a monthly volume between the 610,000 and 850,000 acre-feet range that would be run consistently over the next ten months. This would allow a more knowledge-based determination on how monthly flows volumes affect sand bar sustainability.

What is the optimal bhbf release and sediment trigger?

We will learn enormously from this recent bhbf as data is analyzed and written-up over the next few months. Emerging knowledge will help guide us to determine the optimal timing, hydrograph, and trigger conditions for future bhbfs. Maybe March is not the best time for a bhbf; Maybe a bhbf should be shorter in duration; Maybe the sediment trigger should not rely only on Paria River inputs but on other tributaries as well.

Adaptive management is the continual search for the best possible solution to a complex set of problems. It is "learning by doing". It requires us to be patient for scientifically based information, rather than jumping to our already formed conclusions.

Where is the Long Term Experimental Plan eis these days?

Presently, the fate of the Long Term Experimental Plan (ltep) that we've been anticipating for the past few years is in doubt. The quickly formed new plan to replace it is a five-year proposal that doesn't allow bhbfs and restricts steady flows to the months of September and October. We do not agree that there is scientific support for this five-year proposal. We prefer a return to the ltep process.

All said and done, the Secretary of the Interior, Bureau of Reclamation and the other federal agencies deserve to be commended for conducting the recent bhbf. We now have an "off the shelf" bhbf Science Plan for future use. We also extend our appreciation for active support from the Hopi Tribe, Grand Canyon Trust, and Grand Canyon Wildlands Council in the effort to make the bhbf happen.

We hope that the newly formed beaches in Grand Canyon improve conditions for river runners, endangered fish, and arch sites. And, we hope the beaches last for a while. Please stay in touch and let us know your thoughts and experiences with the bhbf of March 2008.

Andre Potochnik (AMWG Representative)
&
John O'Brien (TWG Representative)

The 2008 Flood

It's already the most massive boat I've ever driven and they keep bringing stuff on board. Here comes a laser geodometer, in a custom case the size of an oil drum. "Keep it out of the crunch zone," the says the bearer, "it cost sixty grand." We've taken the spare motor out of its box and filled the space with a laser sediment particle meter, an acoustic Doppler current profiler, a couple of generators. The P-61 sampler is a fish shaped solid-brass instrument that takes two people to lift off the beach. I've got all three spare outboard engines and the whole fleet's gas; the kitchen and all the food, a veneer of personal duffel in carnival colors, lashed over everything like a hairnet. I like to keep a neat boat and this one looked like a 37-foot chili dog smothered in onions. The cargo platform is six inches under water, "Don't think you're special, Cooper," my boss, Brian Dierker, growls as he hands me a huge aluminum box full of, apparently, bricks, "this isn't even close to the worst I've seen."

We've come to study the effects of an artificial "flood" on the beaches of Grand Canyon. They've been slowly disappearing since the dam went in, which shouldn't have surprised anyone, but the ruinous effect the dam would have on the riparian environment was the last thing on anyone's mind in 1963.

The Colorado River drains an area larger than Spain and it falls two and a half vertical miles to the sea, slicing through the geography like a buzz saw. Before the dams went in, the river was the world champion earth mover in its class, transporting a half million tons of sediment through the Grand Canyon every day. Not anymore. Its waters rarely reach the sea at all.

In a river system that supplies drinking and irrigation water for millions of thirsty westerners, the sediment in this river is a particular nuisance. It clogs canals and intake structures and abrades pipes, pumps and generating turbines. The usgs estimates that within eighty years, sediment will cover the intakes for the river outlet works at Glen Canyon Dam, one of who's principal justifications was to keep the country's largest reservoir, Lake Mead, from filling with silt faster than anyone had ever thought possible. The mud that used to flow as part of a river "too thick to drink, too thin to plow" is now settled out in Lake Powell. What water exits the hydroelectric generators at Glen Canyon Dam, the water that is floating our boats, is cold and clear, the opposite condition of what had been shaping the river corridor for millennia, and the perfect tool for scouring the beaches and sand bars of Grand Canyon to bare rock.

In the interest of preserving what was left of the riverside environment within the National Park, the various federal agencies involved had decided to let enough water out of the dam to "mimic" a natural flood. They had haggled about it for months. The hope was that tributaries to the Colorado below the dam had contributed enough sand and silt in recent flash floods to give the main river material to rework into new beaches. Our mission was to measure how well that tactic had worked

Maybe I'm a little rusty at piloting a boat this size but I feel like I'm in the back seat making suggestions. The little four-stroke Honda 30-horse outboard is legendary for its quiet reliability until it coughs and dies; then won't start. The other boatmen know what the problem is and shout their advice. Too much choke, not enough choke, too much or too little throttle, frududenator on backwards, sprazzeled plugs etc. I pull the starter cord till I'm gasping and spent. Brian comes over. "You gotta put it in gear and give it full throttle five times," he says adjusting this and that. It starts on the second pull.

It froze hard at the put-in the night before we left and everyone's got on rubber boots and tattered ski wear, like homeless Nordic irrigators. We travel downriver less than a mile before reaching the first survey point. The Grand Canyon Research and Monitoring Center, under the umbrella of the us Geological Survey, has been keeping track of the size and shape of the sediment deposits along the river for more than a decade. There are permanent reference points at various places along the river, small scribed "x's" that are hard to find if you don't now exactly where to look. By placing a surveying instrument called a "total station" directly over these points, laser pulses can be sent out to a hand held reflector along the shoreline that measure the position of that point relative to the station within five centimeters. String together enough points and you have a contour map of the beach you can compare with the previous one. Sound easy?

It's not. The glitch is in getting that reflector to the various points, a job that falls primarily to Emily Thompson, research tech and human fireball. Hundreds of readings have to be taken, so you have to hurry. The map needs to extend into the river to where the boat-mounted sonar mapping instrument can begin to "see," sometimes way out in the 48-degree water. The shoreline can be anything from slime covered rocks to bottomless ooze. The bars are often cloaked by what I would have previously described as "impenetrable" thickets of tamarisk. Clad in chest-high waders and dragging the pole-mounted reflector, Emily would slosh, thrash or slither through it all.

We only make six miles the first day, surveying along the way. The next day we make fourteen and the canyon is already 2000 feet deep. We camp on a dune and the wind blows a silica hurricane all night. Maybe I've gotten too close to the research subject already. "Fine" sand particles are up to 250 microns in diameter and great

candidates for aeolean (wind) transport. There's a kilo of it in my scalp.

The rapids are close together for the next few miles and the engine keeps cutting out. We sputter through them without incident to our next survey site at South Canyon. The wind is howling among the cliffs and gyres of mist from the rapid below are whipped to the top of the Redwall. Gusts of stinging spray rake the boat from cresting waves a quarter mile away. When at last we proceed, the engine is reluctant and the other boats are around the corner before we gain the current. Then it dies with a certain resignation. I pull on it for a while then look around. We're in the middle of the river and creeping downstream against the wind. Nearing the entrance to the next rapid, we're going to start picking up speed shortly but we're not going into the rapid. We're blowing into the rocks. Where we will spend the next few days.

I begin to pull frantically on the starter cord, smacking my hand repeatedly against the motor box, flaying off nickel-size chunks of flesh. I don't even notice. Panic seems a legitimate response. I pull and pull, trying every possible setting of choke and throttle.

The motor has flatlined will soon begin to turn blue and stiffen up. I change gas tanks, squeeze the gas pressure bulb near bursting then mash it under my heel, pull some more. It will not fire. We are utterly helpless.

Salvation comes in the form of another research boat from a trip that is overtaking us. They seem odd angels but they drag us to safety. It takes twenty minutes to put on the spare engine but it won't run either. I've drained the water separator a dozen times but someone recommends I pull the filter cartridge. It is full of water, right up to the top. "Oh, no wonder," I remark to myself. Later I will drain nearly three gallons of water out of that tank, pumping it into a sediment-sampling jar a cup at a time, using the bulb taken off a fuel line and salvaging the spoonful of gas that floats on top. It will take all afternoon. For now, I bypass the filter with another hose and drain a pint of pure water out of the carburetor bowls. The engine starts right up, but I take a minute to wash off the blood, which is all over. It looks kind of unprofessional. How the water got in the tank will remain a mystery.

We make another 15 miles without incident and pull into camp a couple eddies below President Harding Rapid. Officially called Eminence camp, it has much to recommend. There is a route out to the rim. There are a couple of terrific eddies accessible. Some of the first research on sedimentation in Grand Canyon was conducted here. Records and photos go way back. A guy named Jack Schmidt actually came up with the terminology for the various parts of the beach building process here.

There is the "separation bar," where the main current "separates" from the bank at the top of the eddy. There is the "reattachment bar" where the main current "reattaches" to the bank at the lower end of the eddy. There is the "return channel," where along-shore currents retain enough power to transport sediment even though they are traveling upstream.

It sounds simple, but I am reminded of a quote I think I remember from Richard Feynman, the "smartest man in the world," after Einstein died: "I would have two questions for God, " he said, "'what is the meaning of life?' and 'please explain turbulence.'" It is the last unsolved problem of classical physics. You can model it on your computer to heart's content but you will be deceived. Its complexity is beyond our understanding, and its effects are best observed and not predicted. That's why all the stuff on my boat. We just don't know what's going to happen. In spite of our number crunching prowess, there is no substitute for reality.

We will measure the current velocity and sediment content through the water column at half meter intervals. The size and concentration of particles will be determined. "Sand" becomes "silt" below 62.5 microns and turns to "clay" at 3.9 microns. Larger particles are bounced and dragged along the bottom as "traction load." The researchers are serious about their work, rise early and doggedly pursue good data until the light fails.

For the next nine days the camp scene will be mine. I'll be up before it's light and conk out long after dark wearing all of my smoky, grease splattered clothes. One day I hike to the rim and take in a therapeutic dose of broad emptiness. A thousand feet of the great east wall of the Kaibab Plateau lies to the north and west and is covered with snow. The San Francisco Peaks shimmer on the western horizon like a distant sail.

The flood comes, along with a glut of visitors. There is a guide training trip, a twelve boat private trip that fails to take Harding Rapid seriously at 42,000 cubic feet per second. Two of their boats are upside down. There's a trip of distilled officialdom; honchos from bureaus across the spectrum of government agencies with reporters, department heads and chiefs. The last time I saw Steve Martin, Superintendent of Grand Canyon National Park, he was a junior ranger setting on the prosecutor's side of the aisle while I was convicted of kayaking the Little Colorado River into the park without a permit. It was a pretty big deal from my perspective, but he didn't remember me. Lots of water under the bridge and he was busy being a stern advocate for Grand Canyon.

I got to watch an exchange between him and an official from the Bureau of Reclamation that did a lot to illuminate the conflicts between the different agencies that are often charged with opposing responsibilities. The BuRec guy wanted to know if we could determine the minimum amount of water it would take to accomplish whatever beach building would be done. The dams his agency built were supposed to pay off a host of other

Reclamation projects with hydropower revenues. That was half their rationale. If you let water go without generating power you're losing money, maybe three million dollars by their reckoning, for the 41.500 cfs flow for 60 hours. Only two thirds of that will fit through the turbines. The rest comes out of the jet tubes and is "wasted."

There used to be an average seasonal high of 86,000 cfs in Grand Canyon. A flood in 1957 (?) rose to 152,000 cfs and there is evidence of 300,000 cfs flow not long before the gauges went in. The flood of 2008 is barely high water, but it's something. There's all that buzz about the Seventh Wonder of the World and the World Heritage Site but that's hard to put a number on. What if you if you were try to figure the value of the sea life the river used to nourish or the riot of birds in its former delta? The accountants would croak. Lake Mead is 46 percent full and Powell is 44 and the conquest of the Colorado is a "mission accomplished." There doesn't seem to be enough water to go around but they're building new aqueducts and selling more homes and it can never stop or even slow down. It's all right there in the presumptions. So what if there's not a beach in Grand Canyon, the native fish are gone and ancient ruins washed away? People in Phoenix will literally perish without air conditioning. Is that what you want? The reservoirs are filling with mud, the generator intakes are close to sucking air, the plan seems to be unraveling at the most basic level, but the dams are still working for now and the populace cries out for cheap electricity. What's more important? You can see the problem.

It takes hours for the muddy water of the high flow to completely displace the clearer water of the low. Driftwood the size of telephone poles clutter the eddys. The sonar mapping boats are running continuously and you don't have to do much analysis to tell that the beaches are building like gangbusters. The newest boat is equipped with a multi-beam sonar scanner that maps the river bottom with a 120 degree wide swath of sound. It sends out 240 separate beams 40 times a second, through a transducer that is mounted on what appears to be a great aluminum cannon. A laser reflector is fixed to the boat, and the big ol' geodometer lets the data recorder know exactly where it is. Software will adjust for the motion of the boat. Multiple passes are necessary to map the river from side to side. I am rather in awe of level of sophistication.

Chief researcher Matt Kaplinski helped to design the boat and is running the telemetry now. Flat panel displays are mounted to the lid of the big aluminum cross box in front of him and a table for his keyboard will fold down in the rapids. Matt is absolutely gleeful about how well the rig is working and it puts a jolly man in a jolly mood. Stocky and solid, like an elf that may go 215, he might suddenly break into song or decide to dance along with the generator. He's an avid hockey player and moves well. It's his 18th year studying sediment transport in the canyon, and he knows as much about it as anyone. "Were getting great data," he smiles.

Over 15 hours the flood subsides and the river drops to a quarter of its high volume.

There are big new sand bars and backwaters where shoals can warm up enough for young native fish to grow. They are particular about the temperature at which they grow up, nothing below 61F, please, and there are few opportunities in the dam-chilled river. The voracious non-natives aren't helping either.

We shoot the shoreline one more time, Emily on the rod, Nate running the total station. Except for rigging the boat, I'm eager to move on. I feel like I've been at 45-Mile all my life. Toward late afternoon we finally take off. There are new sand bars all along the way and the consensus is it looks like better beach building than the two times they've tried this before. We camp with another research trip just above the mouth of the Little Colorado. They are taking "drift" samples to determine what creatures and foodstuffs are available to the fish in the water and how that changes with the high flow. We don't have to set up our kitchen and I'm much relieved.

In the morning I try to rig the boat a little tighter for the big rapids to come. The Little Colorado River has an enormous drainage and has brought in enough sand to rebuild the beaches for miles downstream. It looks encouraging. We're running on about 8,000 cfs, I recon and the rapids are tight and full of rocks. We regroup above the first major one, Unkar Rapid and run within sight of one another. Walls of creamy Shinumo Quartzite rise steeply out of the water and I know the crux is coming.

Hance Rapid is at the mouth of Red Canyon and it's long and broad and steep and rocky. Instead of narrowing down at the top, the river widens and boulders the size of my bedroom stretch in a line from bank to bank. In the dories we used to always start on the extreme left and row to the right like crazy. I counted up once and every boat on the warehouse floor had a repair in the right front footwell, where one particular rock in Hance had blown a hole in the side. Big boats start on the extreme right, in the only chute that's big enough to fit through and strive to get left. It's the tightest move in Grand Canyon and the most critical. Boatmen have given names to various features to simplify the description of what happened to them. Misjudge your momentum on the entry and you may end up on "Whale Rock," sometimes overnight. If you don't get enough of your left tube in the "Duck Pond" eddy to turn you, then you're down the right, through the "Land of the Giants." Sideways. I'm always a little gripped. You have to float in with little throttle and no momentum but pointed the right way and waiting. Waiting, waiting, waiting, while 49 percent

of the fibers of your being are screaming, "Do something, for God's sake!" and the roar is overwhelming and a perfect indecipherable hell of white water gradually reveals itself. We're not going to scout it. Wouldn't change anything.

I'm thinking we look pretty good going in. I've got a visual on the parking rock and as it slides by I crank the throttle wide open and swing the tiller hard to starboard. For an instant, I think I've got it. Then everything slows down and I can see events unfold as if the river of time were flowing like honey. It's not coming around. We're not making the cut. That's puzzling. I think to look down at the engine after an age and see the jagged edges of the casting where the tiller handle has broken off. I haven't been turning the engine, I've been bending the little rod that controls the throttle. "That's not fair," I think. The motor is pointed straight ahead, jammed wide open and we're all going to hell. Us and the geodometer and the laser sampler and the rest. I look at the red button which will kill the engine, the lanyard on it called the deadman switch. In the old days I would have pulled the engine-raising "jackass" mechanism but there isn't one. I gaze around at where we are. Going into some rocks, looks like. Pity. The engine is winding and at least we're still pointed left. That's gotta help. I can't pull the engine when it's under power and if I turn it off we'll be where we'll be. Don't care for that idea. We're gonna smack a rock with the lower unit any second now and then it won't matter. No sooner has that thought bubbled up than we hit hard and the motor dies. I pull the engine and notice that all three blades of the prop are flattened against the hub. No sense starting it up again, I reflect, and reach to lock it in the tilt position. Something is busted and it won't stay up. We go through a sharp hole, I lose my grip and it falls back in. I pull it out again and look downstream. A lot of the boat is actually having a pretty good run but the stern, my part, is ten feet upstream of the biggest nastiest hole in Hance Rapid, sideways. I mentally apologize to the Honda, let go of it and hold on for dear life. There is a whack so solid I expect to see nothing but guts from the power head trailing in the water where the lower unit used to be. We're still moving left and actually careen into the shore and lodge there in the rocks before we are out of the rapid. Well, nice to have that over with I'm thinking.

I'll do better after that. Incredibly, the engine is largely intact.

We rendezvous with another trip at Bright Angel and there is suddenly more camp help than is needed. The next day we make as many miles as we would in a week on Martin Litton's 18-day schedule. We aren't sightseeing. At Bedrock Rapid we pass a private trip that the Park Service has just unwrapped from the rock. They have been shorn even of straps to hold the frame on and their gear will decorate the banks for several miles. Another 50 miles the next day and we camp on a huge new bar below Spring Canyon.

It's the size of football field, but the sand at the rivers edge is steep and calving off. I ask Matt how long he thinks this marvelous new camp might last. "At least until they start the higher flows. June, anyway," he says looking around pensively. "We'll just have to see."

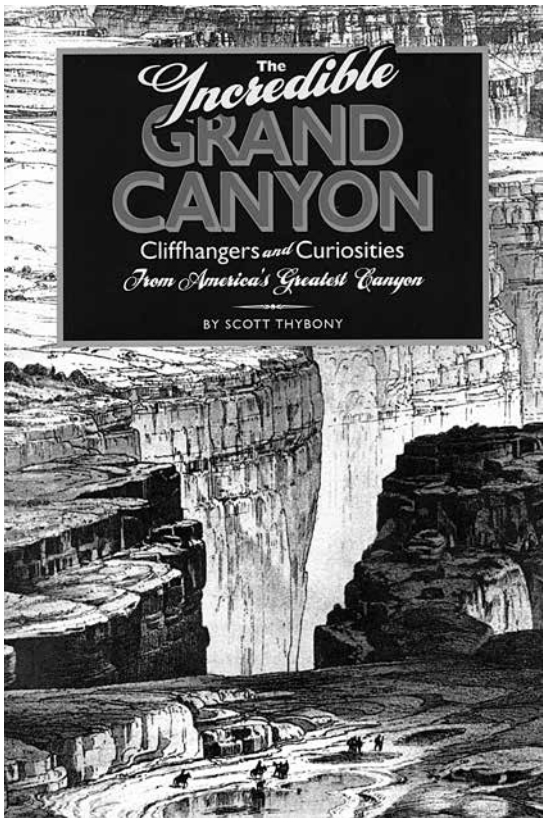
Tim Cooper

Books

The Incredible Grand Canyon: Cliffhangers and Curiosities From America's Greatest Canyon by Scott Thybony, published by Grand Canyon Association

You'll have fun with this book, and it should definitely become a permanent part of your ammo can library.

In recent years there have appeared several books that delve into one particular subject, person or event relating to our office out there in Grand Canyon. These books are often thick, pithy tomes that help us come to understand the depth of a subject or a person's life. They are fascinating reading and will require many nights on the boat with a flashlight to carve through. Not so with this book, and that is precisely why it is a wonderful addition to the pantheon of Grand Canyon lore. *Incredible Grand Canyon* is a treasure of well known as well as arcane and bizarre facts, figures, snippets and morsels about our Canyon and the River. Some of these little tidbits you already know (Bill Beer and John Dagget's 1955 swim), others you may not have heard of (did you know that the El Tovar Hotel was purposefully designed so that the rooms had no views of the canyon, in order to encourage people to get outside and actually see the place? I didn't).



The book is arranged in twelve chapters that focus on particular aspects of the canyon and the river: firsts, curiosities, cliffhangers, critters, crazy schemes, etc. Each short and sweet paragraph within a chapter is illustrated with great graphics and written in Scott Thybony's immensely enjoyable, humorous and humble style. They're fun to read, and you can bite off a few, savor the details, laugh at the oddities, and then find a way to translate them into your spiel for the folks. Instant gratification at its finest.

The final chapter will please those of you who love numbers and absolutes, and the gps-carrying folks on your trip will no doubt wander through this chapter first. "Grand Canyon by the Numbers" gives measurements both common and not about the canyon. Yes, we all know that the canyon is 277 miles long by river. But did you know that if you walked all the ins and outs of the South Rim you'd walk 1,373 miles? The North is only slightly longer, at 1,384 miles. Or that the prize for the most miles ridden on a mule goes to Ross Knox—40,000 miles!

Thybony has been running around this place as a guide, wanderer, explorer and writer, and for decades he's been collecting facts and figures, stories and details. There is no better voice to bring these kinds of strange details about the canyon to life. It's clear he loves the place and all of the people—past and present—who have wandered, schemed and dreamed in its depths.

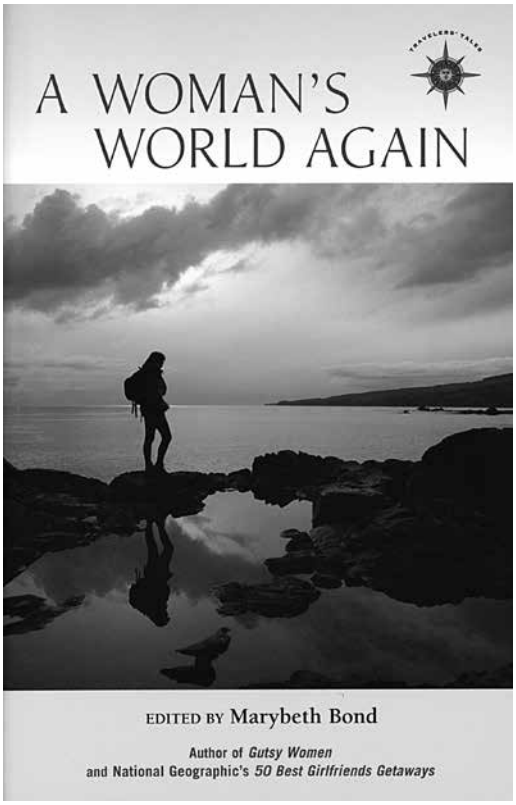
All these little paragraphs about the curiosities of our canyon add up to a surprisingly rich tapestry. This is not a disjointed collection of strange facts and figures, but a portrait of a landscape and the people who have spent time here. And it is a great reminder for us river guides about the rest of the Canyon, something we might forget from our somewhat myopic perspective down below.

Grab a copy or three of this little book. You'll love it, your folks will love it, and you'll have fun reminding yourself about all the wonderful details that make up our corner of the world, and learning the true stories about some of those things you've only heard fifth hand. The book costs $14.95. It's offered through Grand Canyon Association and available where all good Grand Canyon books can be found.

Christa Sadler

A Woman's World Again, edited by Marybeth Bond, published by Travelers Tales.

A kick-ass story! That's how Lew Steiger described "Joy on Kilimanjaro", by Rona Levein, who climbed Mt. Kilimanjaro in 1996 in honor of Joy Ungricht Carber, legendary guide in Grand Canyon and on rivers world-wide. If you knew Joy, you probably loved her. If you didn't know her, after you read this story you'll wish you did. "Joy on Kilimanjaro" is one of 33 true stories by women writers in *A Woman's World Again"*, isbn 1-932361-52-9 published by Travelers Tales (www.travelerstales.com).



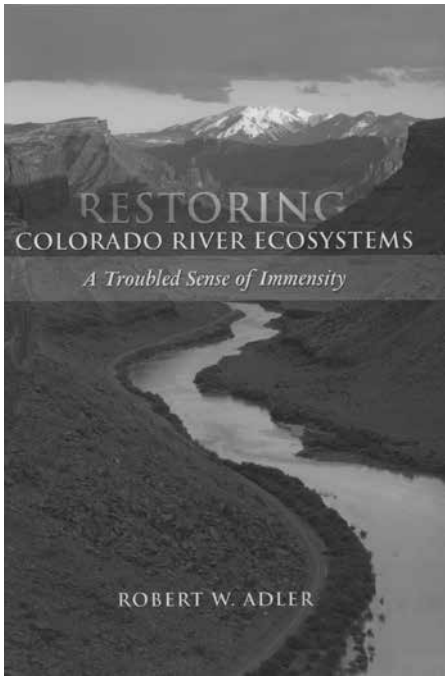
A number of gcrg boatmen are included in an earlier Travelers Tales book, *Grand Canyon"*, isbn 1-93261-23-5: Scott Thybony, Michael Ghiglieri, Louise Teal, Tom (TJ) Janecek, and Christa Sadler. As well as many other writers familiar to gcrg members: Peter Aleshire, John Annerino, Edward Abbey, Terry Tempest Williams. Heck, you know all of them. A great book to remind you who you are, who you were, who you still are, who you can be.

Rona Levein

Restoring Colorado River Ecosystems: A Troubled Sense of Immensity by Robert W. Adler, published by Island Press

Over the past century, humans have molded the Colorado River to serve their own needs, resulting in significant impacts to the river and its ecosystems. *Restoring Colorado River Ecosystems* explores the many questions and challenges surrounding the issue of large-scale restoration of the Colorado River basin, and of large-scale restoration in general. Author Robert W. Adler examines and critiques the oftenchallenging interactions among law, science, economics, and politics within which restoration efforts must operate.

Robert W. Adler is associate dean for academic affairs



and the James I. Farr Chair and Professor of Law at the S.J. Quinney College of Law, Paper: $35.00 / isbn: 978-1-59726-057-2 Cloth: $70.00 / isbn: 978-1-59726-056-5

Professor Joseph L. Sax, University of California, Berkeley, and author of *Mountains Without Handrails* remarks, "What a terrific book! Like a skilled surgeon, Adler opens up the Colorado River to show what we have done to make it bleed, and what it will take to restore it to some measure of ecological health. Without bluster or sentimentality, he explains just how challenging and difficult the job is, and he pulls no punches in explaining the technical, political, economic, and legal obstacles that lie in the way."

Jack Currey

Well, I was born in Kansas, but raised in Los Angeles, California, and graduated from school there. Probably the first real job I had working in Los Angeles was selling wholesale meat and driving a meat truck right out of high school. I went with Pillsbury Mills, was one of their salespeople. I had the Watts territory, and San Pedro, where they started me out there—rough neighborhood…that was the early fifties, driving, yeah.

It wasn't too bad. I mean, I never had any problems, but that's kind of where they start you out, in the rough neighborhoods, and if you could make your rounds there successfully, they advance you on through the company. I got to be successful enough in my sales that they transferred me to Salt Lake City. That's how I ended up in Utah. They made me the key account manager for this area. In the process, I got introduced to rivers out here.

The first trip I ever did was on the San Juan River, just a little one-day trip from Bluff to Mexican Hat. We had some balsa wood rafts that we bought surplus, sawed 'em in half lengthwise and put a plywood flooring on the bottom of 'em and then sealed 'em. But the sides of it were only like maybe six or eight inches high. [Steiger: Balsa wood?!] Yeah. Well, I didn't know anything about river running, but we decided we wanted to do that one little trip, and that was the only thing we could find at the local surplus store…It's the kind that had the netting in the bottom of 'em, so we just cut the netting out and put the plywood in. And then we took some paddles with us and put a life jacket on, and took off. We drove all the way from Los Angeles. We were gonna do a much longer trip, but it didn't work out that we had the time to do what we wanted to do. The length of the San Juan, at that time, when it was going into the Colorado River, which we know was undammed then…Well, it was just myself and three other guys that were in the area where I lived there in Los Angeles, just kind of an all-guys excursion. That was my first experience on the water, but we had a problem with the raft right off the bat, because—there wasn't anything but little sand waves in the San Juan, so we didn't have any rock problems or any big rapids; but we really didn't know what we were doing, either. We were just kind of paddling around in circles in this boat out there, going down the river. But the balsa wood was soaking up water as we were going. By the time we ended the trip, the balsa wood rafts were sitting about three or four inches underwater. We were still sitting in 'em but the rafts were totally submerged. But we paddled them enough, we got to shore. That was probably— five or ten years ago I drove by that same spot where we took the boats out. We could not get 'em out of the water. So heavy. I guess the river's changed a little bit right there where we took out, but there's a tree growin' up right through one of 'em right now that's still there.

Steiger: Through one of the…?

Currey: Through one of those balsa wood rafts.

Steiger: You mean, they're still there at the takeout?!

Currey: Well, they were about ten years ago. I don't know whether they're still there now, they were disintegrating pretty bad. We *couldn't* get 'em out, couldn't carry 'em. But we had a great time anyway. We were floating out of the boats toward the end—you know, we couldn't stay in them. Well, we didn't have any stuff, it was just a one-day trip, so we just had a little lunch with us, and that was all we had. We all had lifejackets on, but they were these great big Navy-type, military—those old gray ones, if you remember what they looked like…Big collar, huge, really uncomfortable. But we were glad we had 'em, because we were actually floating in 'em when we ended.

Steiger: How did you get the idea to run the San Juan?

Currey: I just saw some articles printed in a National Geographic. I just saw some other people rafting somewhere. Can't think, it was probably in Dinosaur National Monument. I thought, "You know, we ought to go out and just try that." We'd been hiking all over, looking for places to go, and we'd hiked down into the Supai-Hualapai Indian Reservation there, and through the Falls area a couple of times. And in the Sierras. "There might be an easier way. We ought to do something where we don't have to carry all the stuff on our back all the time." So that's where we got started, anyway. So when I got to Utah…I did that trip just the year before I was transferred with Pillsbury over here. So then I had just that little experience. Then I started looking around for other things to do, vacation time here.

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A couple of historic movies have been making the rounds lately of Jack Currey and several other early pioneers

who were hooked up with the company Jack started—Western River Expeditions—engaged in a first descent of Mexico's Rio Grijalva through El Sumidero Canyon in about 1963. These movies portray river running at its finest—i.e. the river itself is absolutely insane, and so are the boats! Jack Currey, in both movies, is an iron-jawed character right out of the comic book pages of yesteryear…lean, handsome, big, strong, confident, charismatic—flat-top haircut and all: this is exactly the guy who'd pull you out of a burning building, or get you safely down any terrible river, or past any other obstacle that got in his way.

He still seemed that way in 1998, when this interview was conducted in Provo, Utah. Today, from afar, one could make a strong case for the notion that practically everybody running Grand Canyon from the Utah side now (not named Hatch) was helped or influenced, directly or otherwise, by Mr. Currey. Watching him in action back in the day, it's easy to see why.

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The next spot we went was all around the Yampa River in Dinosaur. But we had decided we weren't gonna do those balsa wood boats anymore. We went around the surplus stores looking for some kind of a rubber raft. We found a store here in Utah that had some old ten-man military rafts still in the crates. They were brand new, never used. We bought two of 'em for fifty dollars apiece. Yeah. So that's how… and then we built frames for 'em, went over there and tried it with oars instead of paddles. We still had our problems controlling the boat, 'til we got used to it. Yeah, we actually used oars, and we put a steel pin in the wood blocks… just wrapped a tire around to hold 'em on. But we had a great time on that trip. So then we really got hooked. We did another trip over there, and then we went up on the Salmon River in Idaho—tried the Main Salmon. We got through that without any real problems, it wasn't too difficult. We got to Carey Falls and we weren't quite sure what side of the falls to run on that one. Luckily, we chose the right side. In those days it was a pretty good drop on the far left side, so you had to be on the right…

So I gathered guys around locally here in Utah that liked to do that sort of thing. We started doing lots of things then. We went up and did the Middle Fork, and then we did the Selway and Cataract Canyon, and finally we went and the Grand Canyon was about the last thing in the area of any size at all we did.

First trip I did on that little balsa wood, was about 1958 or 1959, I think. So we were in the early sixties here—1960, I think, or 1961 we did the Dinosaur trip.

STEIGER: Were you aware of all the dam stuff, the controversy there?

CURREY: Yeah.

STEIGER: I guess there wasn't much controversy at that time.

CURREY: No, they just had 'em on the plans they were gonna do 'em. And of course the one in Glen Canyon was underway. But a lot of things took—you know, over the years, running, we ran Dinosaur National Monument and Canyonlands, and the three Idaho trips, and the Grand Canyon; which included Westwater and Desolation Canyons out of Dinosaur. All those trips pretty much ran simultaneously in the summertime. So we had a warehouse in each of those locations.

STEIGER: Well, how did it occur to you that this could be a business?

CURREY: I got tired of sales with Pillsbury. It was a real shot in the dark. I went down to the little printer—we had an office in downtown Salt Lake City, it was on the top floor, there was a second floor, and then another one underneath us. I can remember going down the stairs and around the corner, and there was a little print shop underneath all of this. He printed me a little sheet, three by four inches, and I listed the Idaho trips, Canyonlands, and Dinosaur National Monument on there, and anywhere from one to five days. All of it just in black. And then approximate dates they could be run, and then the pricing. I just started handing 'em out. That was my first experience in the commercial field.

STEIGER: You hadn't exactly quit workin' for Pillsbury?

CURREY: I hadn't. I ran one more trip while I was still working for them, and then I left them. It really wasn't enough, but they demanded so much of my time, that I got a job with abc-tv, Channel Four, for sales there. I could do that more on my time, and then not be concerned about using some time during the week for promoting trips and getting equipment ready.

STEIGER: Sales? You mean you would sell advertising?

CURREY: Yeah, advertising slots. I had a football game, so I would call the El Paso Gas in Texas, and ask 'em, 'cause their team was gonna be playing that week, and we were gonna cover it on abc, so do they want to put an ad in? That sort of thing.

STEIGER: Did you ever think the river business was gonna get as big as it did?

CURREY: I really wasn't looking that far ahead at the time. All I know is, all the acquaintances I had around heard what I was doing, and I had more and more people wanting to go with me. Pretty soon there were more people wanting to go on those trips than I had time to do. So I had to quit my job to do it, but I had to feel like I was gonna get income out of it, because of course when you're running just for your friends, everybody just chips in and you go… But I had seven

children at the time.

STEIGER: Yeah, that would keep you focused.

CURREY: It wasn't easy to get started. Before we made anything out of it that could be considered a decent living… I was ten years in the business before we finally got it goin' good.

STEIGER: The only impression that I have of that time is from talking to Paul Thevenin. A little bit from Dave Mackay and Jake Luck, too.

CURREY: Yeah. Well, I met Paul and Dave at the Deseret Gym, where I used to play a lot of handball. Paul gave massages over there at the Deseret Gym at the time. I thought they both had the personality, and they were both single and free, so they would be the two guys maybe to start out with. So I asked them both if they wanted to do that. And at that time, it would be just in the summertime. David said at first he didn't think he could do it, and then he came back later and said, "I want to do it." So I took him out and showed him what little I knew, which wasn't a lot. We all kind of learned together out there, what to do and not to do with a boat—how to cook outside and the whole thing. Then Amil Quayle was another early guy. Both David and Amil went into business for themselves later—Paul never really did. Then I had a guy named Art Fenstermaker who came on board a little bit later, who came and asked me for a job. These guys all kinda knew each other, and were telling what a great time they had, you know. If you have to go to work, that's a good way to do it. But the problem with the rafting business has always been, it's pretty seasonal. So most of your guys, really, that you hire, and we hired later on, were people who were in school and wanted summer work. We finally ended up—at the peak of the business, we had 85 people working during the summer. That included our full-time staff. We had a little over twenty people that were full-time, year-round.

STEIGER: Boy. So the twenty people would have been warehouse managers?

CURREY: And office staff, yeah.

STEIGER: They were doing the bookings, and the other sixty were boatmen?

CURREY: And we had an island in Micronesia that we leased from the king over there, and took people over there. That was a year-round operation, so we had a year-round crew over there.

STEIGER: That's pretty good, your own island.

CURREY: Well, you lease it. You know, you can't own anything over there. But it was our own, and we could do what we wanted with it. I think I had it for seven or eight years is all. It was too expensive. You know, you never made any money at it—it was just a plaything for everybody that wanted to go over there. The rest of the business had to subsidize it.

STEIGER: I was talking to Mike Denoyer last week about going down to an island in Belize with Henry Falany, who he said had got the idea from you.

CURREY: Oh, Henry went down there with me. Henry, of course, worked for us, too.

STEIGER: Yeah, Dave Mackay showed me a picture of Paul and Henry and Ron Smith sittin' on an upside down—looked like a 33-foot boat? Looked like they were patchin' the floor, up on some river in Idaho—I'm not sure where it was. They all looked a lot younger than they are now.

CURREY: Yeah. Well, it was in Idaho. In those days, actually, I think we probably ran the first self-bailing boat ever put on the water. We had so many of these floors going out, we'd rip 'em out—especially on the Middle Fork. Then we got the idea of strengthening the bottom of 'em by just putting straps across the center of the tubes, and then dropping a wood floor in there, but the water would all leak out, of course, around the floors… and boy, that worked so well for us, that we just cut the floors out of everything we had and put in these wood floors, because we didn't have to bail anymore. And the floors were getting torn anyway. They do give you a little more buoyancy with a rubber floor in 'em, but you just go to bigger tubes to make up for the buoyancy and then you're fine.

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I bought a whole trainload of surplus rubber out of Memphis, Tennessee, from the government on a bid. There were a lot of old "33s" in that pile of rubber that we bought. We just cut 'em down because they were too big for one man to row, although we used some with *two* guys rowing 'em, but they were still really awkward. So we cut 'em down, then sewed 'em up and made 22-footers out of 'em, instead of 33-footers. And that's what we ran for years, before anybody started manufacturing anything out of these new synthetics.

STEIGER: So you'd just cut like two sections out of 'em?

CURREY: Yeah, two sections.

STEIGER: Just cut right across?

CURREY: Yeah, and then sew 'em together and glue 'em.

STEIGER: And tried to make it hold air where you joined 'em?

CURREY: Well, no, they didn't have to hold air, because we cut each one at the diaphragm, and we put the two diaphragms together. There's a flex point, and a little awkward to row 'em, 'cause it's kinda bulky at that spot, but you never had to worry whether you're gonna seal any air or not. But I don't think they leaked anyway.

STEIGER: Now, the "J" rig, how did that come to be?

CURREY: Running Grand Canyon, we were running those 22-footers down there rowing 'em through the Canyon, but it was pretty sticky in a few places with

those big ol' heavy 22s, you know. They weighed a lot anyway. They weigh about 500–600 pounds, just the rubber on 'em.

STEIGER: Bedrock, eh?

CURREY: Yeah. Well, and trying to… I had decided that I was going to put something on the water where, even if a guy made an error in the Grand Canyon, the boat would be good enough to compensate for it in most instances. We were running Lava once, and I was sitting there trying to watch, and one guy was running one of the boats with a little motor on it, to help him get across, but most of us were just rowing it. We ran down the right-hand side, and then tried to make the shot across the slick part there, just at the bottom of the falls, before you got to the big rock at the bottom, so you can get around it. And he didn't quite make it. (chuckles) He got dumped there, and I said, "Nothing bothers me more than to have a boat upside down, especially having people in the boat." Fortunately, he was just crew, on that flip. So I came back and looked at all the surplus I had, and I had a lot of these 23-foot pontoon bridge support type tubes. Single tubes. They were 36-inch diameter. These other boats were like thirty-inch. And I started trying to figure out how I could make those singles… They had a much better nose on 'em for climbing the waves. They didn't have enough width on those 22's, and I had to get 'em wider, so we experimented with a three-wide rig.

STEIGER: Baby "J?"

CURREY: Yeah, like a baby "J" rig. But that was still pretty tipsy, it still wasn't good enough. So I went five tubes wide on the next one, and we started sewing 'em together, and just cutting off the backs. There were grommets on the sides that you can lace 'em together with, which is what we do now. We had to cut the grommets off the bottom, because that's just too much drag in the water—especially for a motorized rig. But we tried a forty-foot, and they worked, but they were just kind of wobbly. A little bit too much of this, up and down. We ended up with a 34-foot size as being just about right. Now, I know the ones that Western is using now they're having made totally from top to bottom, so they don't have to sew anything together and make 'em out of surplus.

STEIGER: A lot of work to sew it on there.

CURREY: Well, if I were to build a "J" rig myself—and I just built one here last year—it's about nine months to a year, working five days a week, five or six hours a day. Putting it together.

STEIGER: You built another one that way, sewin' the tubes up?

CURREY: Yeah. I had all the surplus tubes. It's in the garage out there now.

STEIGER: Are you gonna just play around with that?

CURREY: Well, I'm not gonna go down the Grand with it, but it would do just fine. We ran boats just like that in Grand Canyon for years before some manufacturer would build 'em. We finally had Firestone build 'em for us, the last few years I was in that business. Then they said they weren't going to do it anymore, it wasn't worth their while.

STEIGER: Now, Paul Thevenin said that you had accidentally bought this railroad carload, of just side tubes…

CURREY: No, I didn't accidentally buy it. The problem is—I got the bid in Memphis, and it was three carloads. I knew what it was, 'cause I went over there and loaded all the cars in Memphis.

STEIGER: So you knew what you were gettin'?

CURREY: But I didn't see it until after I got the bid… but it was the forklift dumping it in all these railroad cars for us. You know, they were like the coal bin type cars. They weren't on a flatbed. They were just right over the sides with these things. We had a heck of a time gettin' that stuff out.

STEIGER: You mean it was an open car on top that didn't have…

CURREY: Well, you've seen 'em like they run with the coal. They just run 'em underneath conveyors and then they fill 'em, and then they go on and get the next one. Well, these guys dumped 'em in it with big forklifts for us, but we had to get 'em out of those cars when we got 'em here in Salt Lake.

STEIGER: It would have about took a forklift to get 'em out.

CURREY: Yeah. But the problem was, they had listed it as scrap rubber…

STEIGER: So you're buyin' it by the pound or something?

CURREY: Yeah. So we bought it really cheap, but we figured there's gotta be some good stuff in there somewhere. So I made a deal with the railroad to bring 'em here as scrap rubber. And it was gonna cost about $2,000 is all, for scrap rubber. But the railroad turned around and said, "Oh no, that isn't scrap rubber," 'cause almost everything in there was a full boat of some kind. And so they charged me $10,000 instead. And *that's* what I got surprised with. They would not let us have 'em until we paid 'em the $10,000. In those days, that was a lot of money for those things. But anyway, it was still a good buy for us all-in-all. We pulled out of that pile of so-called scrap rubber, all of these military-type crafts. There were a few ten-mans in there, there were 33-footers, there were 28-footers, and a *lot* of the pontoon bridge supports.

STEIGER: That *does* seem like a lot of money for just three little ol' railroad cars! (laughs)

CURREY: Well, I guess it probably was a fair price in *their* minds, because they were boats and not scrap. But it doesn't matter what the weight was, they weren't concerned with the weight, they were concerned with what it was, and that's how they earned their money. So

A sampling of Jack Currey trips...

Left to right: Western River Expedions brochures—1970, 1973, 1971, 1975, Jack Currey Company brochures.

I bought several other surplus things over the years, but I didn't run 'em on the railroad anymore—I trucked 'em all.

STEIGER: I've never gotten to run one of those boats, but I always wanted to. They look like they would take big waves really well.

CURREY: Yeah, they do… Well, I think you can turn over almost anything, but this was probably the most stable. I tried even three boats together, like Georgie ran for a while. I tried running just side pontoons onto 33-footers, which is what you call an "S" rig.

STEIGER: You tried three *big* boats together, like Georgie had?

CURREY: Yeah. We did that up on the Columbia River just for one trip in Idaho, but it was really jerky and rough riding, because one just pulls… Hard to handle. It's hard to turn 'em over, I'll say that. (chuckles) On the Columbia, they had a big ice jam at the top up there that year. They went up and dynamited the ice jam, and all that water came down and we were sitting on 160,000 cubic feet of water. We didn't even *know*. We just knew it was high, but we didn't know it was that high. And there was only one rapid on the Columbia that amounts to anything, called Death Rapid. (laughter)

STEIGER: Oh, great!

CURREY: We had run it once before, the year before that, we'd run it. But it was just a nice leisurely, really great fishing type trip up there. But we got surprised at Death Rapid this time. What was about five- or six-foot-high waves the year before was well over forty feet high there on the first big wave. (Steiger whistles) Everybody thinks you're exaggerating when you say that, but we have a 34-foot boat, and you still have ten feet to go, and you've already cleared the trough at the bottom, you know it's over forty feet high.

STEIGER: Whoa. Were you runnin' this boat?

CURREY: Yeah. My boy Steve was with me.

STEIGER: Did you have any other boats, or your whole trip was… ?

CURREY: Everything was on that one. They had a lot of people. In fact, we had the one guy and his ballerina of the San Francisco Ballet on there. He lost his camera. He got his arm down between the boats when they separated and went over that wave, and he pulled his hand back up, with the camera on it, but all he had was the grip.

STEIGER: Just the camera strap, boy!

CURREY: Yeah. We lost coolers and a lot of other stuff off the boat… but nobody went overboard. But we hit the top of that wave, and it had a backcurl on it, so the boat wouldn't climb it. So we were just going along the side like this, towards the wall. And then this one finally fell over, and then the next one, and then the third one went over. When we came down the other side, we hit so hard, there was equipment flyin' everywhere… Just that one wave. There were a couple other little ones right in behind it, but it was the wave coming off the wall—it was gigantic, biggest thing I've ever been through on a river.

STEIGER: Did you guys have a chance to even scout this thing?

CURREY: Well, we didn't. We just were expecting what was last year, but we could see that it was much bigger from where we were. The water was so big and so fast there was no way we were gonna make the shore. At that point, it was more than a mile wide in there anyway, so it was a long way to get to shore. So we just … "run it."

STEIGER: "Here we go!"… yeah. I always thought that Georgie's boat just… I mean, we used to laugh at it. I didn't start until the early seventies, and never saw any high water at all until 1983. And then 1983, kinda the light clicked on. I mean, after runnin' then and realizin', "Okay, well, Georgie designed this boat back there in the late fifties when it was really big, too." That sort of made a little more sense.

CURREY: Well, we finally got settled on the "J" rig for Grand Canyon, 'cause it did all the things I wanted it to do… Still gave a very stable, but a good, fun ride for people. But your boatmen, they could make some errors here and there or fall in a hole or something, or go over a rock, and the boat would just almost always take it very well—end up with a damaged prop, maybe, but better than people in the water. Yeah. But that's why the "J" rig came into existence, *was* for Grand Canyon. It was designed totally for that.

STEIGER: By the time you got to Grand Canyon, you'd run everything around here, and Cataract too?

CURREY: Uh-huh.

STEIGER: So you were pretty well ready, weren't you? Cataract, did you have a lot of wild experiences there?

CURREY: Well, we never had a problem in Cataract… Well, I've been on at 120,000.

STEIGER: Does it just keep gettin' bigger and bigger?

CURREY: Only in the places that you don't want it to… The Big Drops is the worst spot. The rest of it isn't too bad, it's just hard to get to shore. But we stopped and looked at the Big Drops, and we were rowing 28-foot boats for that trip, which is a lot for one guy to row anyway. We had about five or six people to a boat. We had three boats. I could see the big drop, 'cause we could stand there on the left side and see it. The earlier part of it with all the big waves wasn't anything. But getting over there to stop was important, so we got in. And I could see way down there the water was really jumpin' on that bottom end down there where the big hole usually…

STEIGER: Little Niagara.

CURREY: Yeah. I said, "Well, let's try one boat and see what it's like down there." We didn't have any problem with the top half, we just got between the

boulders up there. And that first boat went, and it just dropped out of sight, 'cause the waves were so big down in there. But then they came back up again. So then we ran the other two boats, and we got all three of 'em through. I decided, "I'm not running any more high water in here with anybody else, and we're gonna run totally 'J' rigs down here from now on, unless it's in August when the water's pretty low." But all the years I had it, we never lost anyone. We had some close calls a couple of times. Richard Jones had to revive one of our people. Richard used to work for me, too. I don't know if you knew that.

STEIGER: No.

CURREY: He was running one of our Middle Fork trips.

STEIGER: And somebody took a swim?

CURREY: They got dumped. He used artificial respiration on 'em, and he came around. So that was the closest call. (Steiger whistles) But that was pretty good, considering all the years. When we were running at our peak, the most people, we were running a little over 13,000 people a year.

STEIGER: That's a pretty good year.

CURREY: That's a lot of people—in all areas combined, you know.

STEIGER: So as a strategy—once you decided, okay, you were gonna run rivers, it seems like your strategy was to establish, to get dug-in in as many rivers around here as you could?

CURREY: As long as they offered…They had to have something to really offer, a wilderness-type of experience, and a good experience. Yeah, we always, of course, test run 'em with a crew first.

STEIGER: I remember, what was it? I guess the Grijalva, in Mexico, was really wild?

CURREY: Well, that's really unrun-able. (laughter) We did that in 1963, I think. Actually, I ran that before I ever ran a Grand Canyon trip.

STEIGER: Really?!

CURREY: Yeah, I'd run all this other stuff, but I hadn't run a Grand Canyon trip yet.

STEIGER: And you just did it that once? That was the one where Paul [Thevenin] went over the waterfall? "Paul's Falls?" [for more on this, see Paul Thevenin's BQR piece.]

CURREY: Yeah, over the waterfall. I made it to shore. That was a lot of publicity on that trip. We spent more time carrying boats than we did riding in them.

STEIGER: When you finally got to the Grand Canyon, what was *that* first trip like?

CURREY: I was expecting something really wild, 'cause we'd just got off the Grijalva. That was 65-foot drops and all kinds of stuff down in there. I got over there and ran it, and I thought, "This is really a piece of cake compared…" (laughter) It's all relative.

STEIGER: So that was like 1964, or still 1963?

CURREY: No, that was 1965, probably, right in there. But I thought, "Well, Grand Canyon has a lot to offer. We ought to run trips down here too." So we started rowing, like I mentioned earlier. But we went to a motorized later on, just because I wanted the size of boat that I didn't want people dumped in the water.

STEIGER: I'm just curious, just for the historical sense, a little more specifics about that very first trip. What boats did you use?

CURREY: On the Grand?

STEIGER: Yeah.

CURREY: Those 22-foot boats that we made out of 33s.

STEIGER: And you guys had a motor on your first trip?

CURREY: One boat had a little motor on the back of it, but they still rowed most of it. But actually, it was really an all-rowing trip. I think that motor wasn't turned on more than once or twice.

STEIGER: So you thought, "This is a nice trip. And this is easy enough that we can do this. No big deal?"

CURREY: No, I was concerned about people getting dumped in the water—especially with guys rowing the boats. We ran a trip over the Easter holidays when students were out of school, traditionally every year. One of those was down the Grand Canyon, but it was just from Lees Ferry to Phantom Ranch. And so we put all these rowing boats on there. It was about five different organizations, and we just launched 'em about three or four hours or half a day apart. So we had—I can't remember the number now—but we had over thirty boats on the water during that one week, going just that short distance to Phantom Ranch. And in those days, we didn't have any problem getting helicopters in there, so we helicoptered all those boats out of there, up on top.

STEIGER: Park didn't…?

CURREY: Well, they gave us permission to do it, they didn't care. Halverson Helicopters was doing the big water line in there at the time, running down the Canyon. But then the Park Service decided they weren't ever gonna do *that* again! (laughs) Yeah. We didn't really disrupt too much, but they could imagine all the outfitters helicoptering people in and out of there. So they eliminated all helicopters lifting people out, so that's why everybody who uses 'em, uses 'em on the Indian reservation down below Lava Falls now.

STEIGER: So that was just right after that?

CURREY: Well, it was two or three years before they said much about it. I can remember taking helicopters down in through there. We made a big map. Have you ever seen that map? It's a geological-type map. It's on waterproof plastic paper, and it's about (indicates size with hands). So I took a geologist and myself and we flew all over that canyon and landed anywhere we wanted, to get the pictures we wanted. And then he'd

overlay the pictures with the geology that we took in there. So the helicopters were still allowed in there at that time.

Steiger: Yeah. Nowadays it's "no way, José."

Currey: Well, there's no way they could have that kind of air traffic in there anymore. And I did it in off season. It was like wintertime.

Steiger: Okay, so I'm just trying to grasp it all. So you went down there in 1965, rowin' boats, decided, "All right, we're gonna start runnin' down there?"

Currey: We rowed for a couple three years before we finally started with the motors.

Steiger: What was the business like? Did it grow really rapidly? Or was it just a couple of trips a year?

Currey: Yeah, it was few trips here and a few there. We had all these other areas we were tryin' to run at the same time, so it's whatever sold is where we went.

Steiger: You talked about having this little mimeographed sheet, or this little black and white, one-sheet brochure. I guess pretty soon that changed?

Currey: Well, the next year I put a little colored sheet about the same size for each area with one little black and white picture on it. And people could run in those days…you know, they could go do a four-day trip for like thirty or forty dollars.

Steiger: You could do that and make money?

Currey: Well, kind of make money. I had no idea what makin' money was. It wasn't makin' a living for me, but it was getting me started.

Steiger: So you were still having to sell advertising at abc?

Currey: That, and I sold some real estate, too, for a real estate company. So I spent a couple of years doing other things, other than that full-time, until I had so many people asking me to go. I thought, "Well, maybe I can make it." But it was hard.

Steiger: Yeah, I think everybody…

Currey: They all go through that.

Steiger: Yeah, where it didn't look too good. Everybody nowadays looks at the Grand Canyon and it's like, "Oh, well, it's just…"

Currey: Well, you know what turned the tide for us more than anything else was running the El Sumidero Canyon, and we've had a lot of international and national publicity out of that…Uh-huh, the Sumidero Canyon, Grijalva River. I mean, there was a tv cameraman from one of the big adventure shows with us on that, so he shot a 16 mm movie, just for that show, of that trip, and they played that six, eight, or ten times anyway, on that show.

Steiger: And that's when you had three networks, and that was it, and everybody was watching tv?

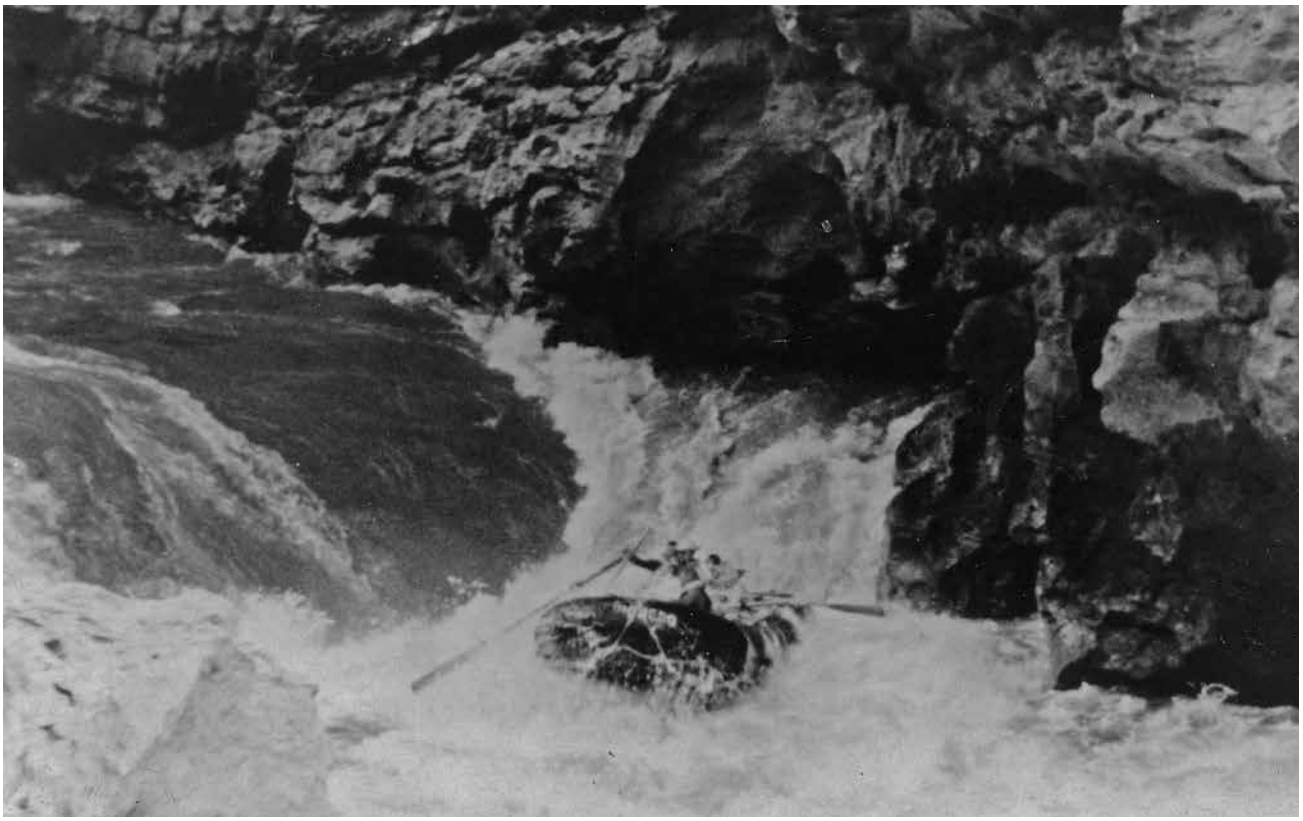
Currey: Yeah. We had another guy shooting 16 mm film for *me* on there, and I shot a little bit of it, and he shot some of it, so we ended up with some footage of our own, other than what the rights were for the tv guy.

Steiger: Well, that river was so horrendous. It's funny that that would be so great for business.

Currey: The show was called "Jack Douglas' 'I Search for Adventure' Program." Nobody hardly even remembers who that was now, but he was *the* big adventure show in those days. Then I started shooting 16 mm films of all the other trips that we did…And then the guy that—his name was Bob Moran, was the photographer who went for Jack Douglas on our Sumidero trip. So besides all that publicity, he was a professional lecturer, and he had an agent in New York that booked him all over the country. So I gathered all the 16 mm footage that I had and put it together into an hour and forty-minute show, took it back and showed it to his agent, and he really liked it. So I went out with that…I was booked for six-and-a-half years with him on the biggest film lecturing circuit of the time. I mean, we did Carnegie Hall, we did Brooklyn Academy, we did the Flint Auditorium for gmc. That was the largest audience we ever had. We had 2,500 people in *that* audience. But I was entertaining them with the footage of river running, and river running wasn't well-known in those days. Everybody thought it was crazy and was very dangerous. So I got all the advertising out of that for six-and-a-half years, plus all the TV shows. He got me on every major TV show in the country. I even did David Frost when he was big-time in New York. But that's what changed—that's why we became as big as we did…

It took me seven-and-a-half years to put all that footage together. I did the editing. I bought all the editing equipment, the tables and everything for it. The whole thing. I had a guy show me how to do it here in Salt Lake at a big laboratory. And then I had all the prints made. I took one of 'em over with five or six of these trips all together on one reel, to the agent in New York, and then he liked the show. So he didn't trust it, he wanted to be sure the audience would like it, so one of the audiences that I did for years was the American Museum of Natural History in New York City. He took me over there just for the person who ran the film lecturing, and I auditioned in front of *her* alone, and she says, "Okay, we'll take it." And then he started bookin' me everywhere.

I ended up with four films. I had the Sumidero, and I had the Usumacinta was another one, which is called *Maya Discovery* as we describe it, a lot of new sites down there that they didn't know they had, on that trip. I did that one right after the Sumidero the next year, 1964, I think…So we filmed all of this, and I had the archaeologist from byu who was with me, you know, supervising all this, and they had the authority to do it, from the government. So that was a discovery film on archaeology, with all the life on the Usumacinta. So I have all the lecture films in addition to *Run the Wild River*, which is a mix of all the others together. But that



Rio Grijalva * Canyon del Sumidero

DIARIO VESPERTINO
El Noticiero
EL COMENTARIO Y LA NOTICIA AL DIA
REGISTRO EN TRAMITE

AÑO I ★★ DIRECTOR: EFREN VARGAS G. ★★ Tuxtla Gutiérrez, Chis., Miércoles 19 de diciembre de 1962. ★★ GERENTE: NABOR VAREZ ★★ Núm. 305

La Expedición de la Western River Logró su Objetivo: Cruzó el Cañón del Sumidero

EL REPORTAJE OPORTUNO

MEMORIAS DE LA CONQUISTA DEL SUMIDERO

POR CONSIDERARLO OPORTUNO Y DE INTERES PERIODISTICO VIGENTE, EN ESTOS MOMENTOS EN QUE UNA EXPEDICION NORTEAMERICANA ACABA DE REALIZAR LA PROEZA DE ATRAVESAR EL CAÑON DEL SUMIDERO, REPRODUCIMOS EL ARTICULO TITULADO "MEMORIAS DE LA CONQUISTA DEL SUMIDERO", PUBLICADO POR LA REVISTA CHIAPANECA "FOTO-PRENSA".

I

Hace dos años —del 31 de marzo al 8 de abril— el temerario Grupo de Exploradores chiapanecos del "Pañuelo Rojo", realizó la hazaña deportiva más sensacional de los últimos tiempos: cruzar lo que antes de ellos se había considerado inviolable: el imponente Cañón del Sumidero.

Muchos lo habían intentado. Unos regresaron convencidos de la imposibilidad. Otros murieron en la audaz empresa. Desde el año de 1909 en que tres marinos franco-canadienses —Pedro Gastinel, Adrián y Esteban Foublón— se aventuraron en una balsa, muriendo destrozados en los rápidos de increíble furia, hasta llegar al 17 de marzo de 1958 en el que el grupo expedicionario del H. Colegio Militar, compuesto por avanzados alpinistas, quedó atrapado frente al mirador de La Coyota, teniendo que aceptar, con coraje y pundonor, su fracaso ante el coloso inexpugnable; desde ese primer intento hasta fecha ilimitada que declaramos muchos otros habían fracaso también.

No por fortuna, sino como consecuencia de la preparación cuidadosa, el esfuerzo denodado y el valor acrisolado del Club Pañuelo Rojo, tocóle a Chiapas el honor de llevar a cabo esta prueba deportiva de grandes alcances. Este triunfo legítimo

EN LA PRESENTE Gráfica podemos apreciar, en la parte superior, los preparativos de los expedicionarios al emprender la marcha para conquistar por segunda vez, después de la hazaña de los chiapanecos del Pañuelo Rojo, el Cañón del Sumidero; en el círculo, los pontones ya en marcha y en la parte inferior la salida del último pontón llamado "El tiritilero"

EL GOBERNADOR DEL ESTADO LOS RECIBIO EN CHICOASEN, FELICITANDOLOS POR SU EXITO.

Por Rubén V. GONZALEZ

POR SEGUNDA vez el hombre vuelve a vencer al imponente Cañón del Sumidero que hasta antes de 1960 había sido un "tabú" para el género humano.

EL COLOSAL acantilado y las furiosas aguas del río Grijalva, que como serpientes se arrastran por el fondo del cañón y van a estrellarse estrepitosamente en las enormes rocas que tratan de detener su paso impetuoso, originando que se formen fuertes raudales, fueron causa durante muchos años de que todo intento de cruzar esa maravilla de la naturaleza fracasara.

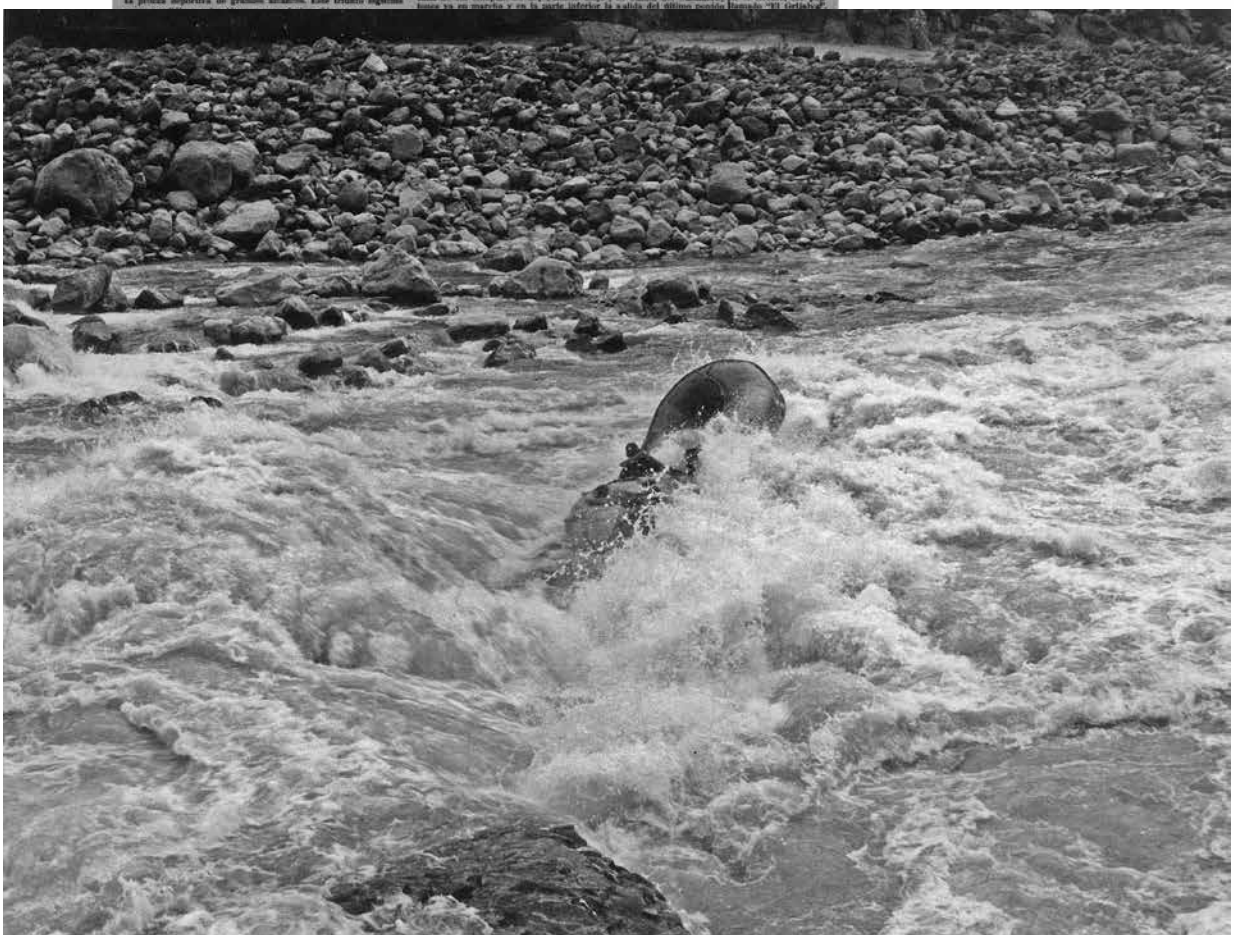
EN ABRIL de 1960 un grupo de valientes jóvenes chiapanecos logra por primera vez atravesar el cañón iniciándose así el rompimiento de los misterios que por mucho tiempo guardara celosamente el Sumidero.

EL DIA de ayer, 14, intrépidos norteamericanos, en una expedición diferente a la anterior, después de 11 días de librar intensa lucha con las torrenciales aguas del Grijalva, de vencer todos los obstáculos que el celoso cañón interpuso para no ser profanado, volvió a dobegar al imponente cañón; una verdadera proeza del grupo expedicionario de la Western River Expeditios Inc. que comanda el experto Jack L. Currey.

EN CHICOASEN AL TERMINO DE LA EXPEDICION

DESPUES de 11 días de batallar constantemente para atravesar el cañón, el grupo expedicionario terminó felizmente su aventura y ayer a las 6 de la tarde arribaron a la playa de Chicoasén, doce de pasaron la noche. El saldo negativo de la expedición arroja dos embarcaciones perdidas, dos integrantes del grupo tuvieron que ser rescatados espectacularmente por el helicóptero "El Chiapaneco" tripulado con gran pericia por el Cap. Jorge Masos, y que fue proporcionado gentilmente por el Gobernador del Estado Dr. Samuel León Brindis para auxiliar a los expedicionarios, y la pérdida de parte del equipo. El saldo positivo de la aventura se sintetiza en el éxito y la nueva experiencia que obtuvieron los 16 norteamericanos.

(pasa a la página 4)



was really the turning point, and we just really shot up on reservations for trips.

STEIGER: So timeframe there again is late sixties?

CURREY: Uh-huh. (phone rings, tape paused)

STEIGER: This was a call from Jack's son, Steve, and Jack was saying the Curreys aren't involved with Western River Expeditions now, but Steve's runnin' rivers all over the globe, and we were talkin' about the Bio Bio in Chile—which is particularly wild. I don't know, does Steve run other rivers that are on that scale?

CURREY: Yeah, he's actually doing 'em quite a bit bigger than the Bio Bio. He's got one in China coming up here in April that's never been done before. They're probably gonna carry around several of 'em, they just can't be run. But anyway, he's still doin' it.

STEIGER: Well, back to Grand Canyon…It sounds like you got so busy you couldn't…In the early days you were a boatman on almost all your trips?

CURREY: I did all the trips in the early days. And then we started running simultaneously in one area and another. Then I had to have some of the top guys, like Dave Mackay could go up and run that trip, I didn't have to be there.

STEIGER: So it sounds like you were kept pretty busy just holding it all together and doing the lectures?

CURREY: Well, the last ten years I was in that business, I just did one trip a year in each area. That was all I could do…We had five warehouses in the respective areas, and some of those warehouses did as many as three trips at a time out of 'em. So I'd just make the rounds. I had a manager for each area.

STEIGER: So you had Vernal, you had Idaho, you had Moab…?

CURREY: …And Grand Canyon, and then Micronesia.

STEIGER: And then just for fun you'd run around and do things like the Usumacinta and the Grijalva?

CURREY: Yeah, we'd do that in the wintertime when everything was slow around here.

STEIGER: Columbia.

CURREY: Yeah.

STEIGER: That's a lot of river runnin'.

CURREY: Yeah.

STEIGER: Now let's see, when was it that you guys sold? When did you get out of the business?

CURREY: In 1977.

STEIGER: I didn't realize that it'd been that long ago.

CURREY: Yeah, it's been a long time. I've done some things since then, but it's always just for myself. Yeah, on water. I lived in Colorado for a while, so I ran all the rivers in Colorado and the Dolores and the Colorado River over there.

STEIGER: How come you wanted to sell at that time?

CURREY: I didn't like the battling of the political… it was always a battle. It's never really died down, but they've kinda turned…It's kinda…You know, there was the rowers against the motorers for a while. Then they kinda got together. Then it was the environmentalists against *all* the river runners. Then it was *always* the Park Service wanting to cater to either commercial or private, and there was always a battle of one or the other feeling like they were getting the short end of it. They would arbitrarily come in…They were gonna eliminate all the motors. And I always thought there was room to do both. I've done both, and I *did* both. I always had different clientele for each one for the most part. So I formed a group called croa, got all the guys that ran motors down in there, and we ended up hiring an attorney, and we went to Washington, d.c., we went to all our senators and congressmen.

STEIGER: Fred Burke was involved in that, wasn't he?

CURREY: Yeah. And it saved the day. The Park Service turned around and decided that they were gonna have choice in there. But it was only because of all of the political pressure. What they did was, I knew Stewart Udall and his brother Morris pretty well, 'cause I'd taken 'em on quite a few trips down there. I have a story about Stewart Udall and Grand Canyon… But on this thing we went in to see Morris Udall who, of course, was the senator for Arizona, which is where the Grand Canyon is, and told him what was goin' on. He said, "I'll take care of it. I'll do what I can." So he called a Senate hearing, brought the head National Park Service guy into that hearing, and those guys asked him questions he couldn't answer, and as soon as he got out of that hearing, he called the Grand Canyon superintendent and told him to straighten that out, solve that problem, because he was really in hot water over there. He didn't *like* being called in front of that hearing. And that's what saved the day. That's the only reason they still have motors down there right now.

STEIGER: Everybody points the finger at Orrin Hatch. I guess there was the Hatch Amendment, which said that they wouldn't fund 'em if they messed with the motors?

CURREY: Yeah. Well, I think that was the major issue, but I think there was a lot of other pressures from people like Orrin Hatch and Senator Moss at the time, who was here.

So that's part of the reason I got out—I wanted to avoid any more of that kind of stuff. I didn't really like having to spend all my time in courtrooms and in Washington, d.c. We made three or four trips back there in the process. There were other problems later on…

I just got ulcers over all that stuff. I hated that. But all those issues…and then they *still* have environmental issues, they still have private and commercial issues on who gets what. They still have the thing hangin' over 'em that they may or may not keep motors in Grand Canyon.

STEIGER: You said you had a Stewart Udall story…

Currey: Yeah. I took him and a lot of his friends and family down through Canyonlands on Cataract Canyon, 'cause the superintendent over there, who I knew pretty well at the time, asked me if I'd run him through there and take a trip. So I said, "Okay, I will." And so we got to know him and his family pretty well. They had a great time on the trip. That was a combination: Jeeping all through there, and then just a four-day trip through Cataract. He loved the boat part of it, the whitewater, so much. So I was lecturing back in Washington, d.c., on those lecture tours I was doing a year or two after that, and he knew I was coming back there, so he said, "Please come in and see me." So I called up, and it surprised me, I got right through to him on the phone. He says, "Yeah, c'mon over."

Steiger: He's secretary of Interior?

Currey: Yeah, the Department of Interior. So I went over to his office over there in the Department of Interior and he had all these people sitting outside waiting to see him: senators and congressmen; Senator Hatfield, I think, from Oregon.

Steiger: Yeah, I remember him, Mark Hatfield.

Currey: And as soon as he [Stewart Udall] heard I was there, he came out and got me, took me in ahead of all those other guys! (laughter) I sat down and he wanted to talk about trips. I said, "Well, why don't you come and do a Grand Canyon trip with us? There's a lot going on, you know, politically with them, and especially with the two dams they're trying to put in down here right now."

Steiger: So this was right at the height of…

Currey: This was the controversy of dams or no dams, and it had gone through all its phases that it could go through, and it was on Udall's desk, and he had to make the final decision on whether those dams were gonna go or not. I said, "Why don't you come down and run the Grand Canyon and see for yourself? That'll help you make that decision." He said, "I will." So he brought his family and a bunch of other people with him, and we took a trip through there. Yeah, that summer. We got two-thirds through the canyon, we were sitting around on a sandy beach, having lunch, and it was a big overhang, because it was just hotter than…

Steiger: Did you run that trip yourself?

Currey: Oh, yeah, I took him down. Anyway, he said, "You know, this canyon is too narrow to make a lake out of it. It won't lake out, you're not gonna get the shoreline here you would like in a place like Glen Canyon. I'm gonna tell 'em the dams are *out*, we're not gonna do it!" So he gave me the impression that he made *that* decision because of that trip. I think he kinda already had his mind made up before he got there, but if he didn't, that was the final thing. And if you think about it a minute, it doesn't lend itself like Lake Mead or Lake Powell did. You don't get the shoreline, you don't get the amount of water storage you would in those other areas, 'cause it's just too narrow.

Steiger: Also…it's awful pretty.

Currey: Yeah. Well, *beyond* all of the other good reasons why it shouldn't be done. But he was looking at it from a viewpoint that he could justify and justify well.

Steiger: When he talked to these other…? Yeah, if you grew up in Arizona…well, they wanted those dams real bad.

Currey: I think that was the turning point, and that's one of the reasons—and there's a lot of others, too—why he didn't do it. But that was one of the main reasons why he didn't okay those dams.

***

Steiger: Well, lookin' back on it, what was the best part of the whole adventure for you? Could you even say? It sounds like your river runnin' career is by no means over.

Currey: No, I still do trips in Alaska and a few other areas. I don't even go every year now—sometimes I go every other year. We usually do a long trip. I want to do a forty-day trip out on the Mackenzie in the Northwest Territories one of these days…

Oh, I think just being out in a wilderness setting and away from what you do every day is kind of the attraction. And then the more exciting trips with the rapids and stuff kinda grows on you. I always liked the camping part, fixing meals outdoors. But after you run a trip four or five or six times in a given season, it becomes more the people that go with you, than the trip, after awhile. You've probably experienced that with people…Well, you know, part of it, if you take a mix between being out there and enjoying something really special, and then you add the people *to* that, and then there's a third element in there, that you're *sharing* with them that particular trip, which they probably would never ever do if they weren't taking it with somebody that knew how to do it…

Steiger: Of all the rivers that you ran, do you have a favorite? Do you have one that means the most to you?

Currey: Well, you have to preface that by saying—all of 'em that we did—all had something really special to offer, and they were all good trips. Probably Grand Canyon has as much to offer, and more than most, because of the variety of things that you see and do down in through there, and just the awesomeness of the structure itself. But I can take a trip up in Alaska and feel like I'm a lot more in the wilderness, than I do in Grand Canyon now.

Steiger: I guess you got a lot of grandkids by now, if you had seven kids?

Currey: Yeah, 23.

Steiger: So if they were gonna read this thing, or maybe their kids were, or something, down the road,

is there an experience on a trip that you had that was particularly memorable that you'd want them to know about? Or anything that would just kind of epitomize what this whole thing was about for you, or like for you?

CURREY: Well, the most memorable trip will probably always be El Sumidero Canyon, but that's pretty well documented, we have a film of that from beginning to end, that they can see…

If I was going to tell them about the feeling that one gets on a trip, I could come out with a feeling for just about all the things we've done, but one that would be more memorable than others would be probably one of the early trips down the Grand Canyon, and just stopping off and camping where you wanted to, and not seeing other parties on the river, or if you did, it was only one or two. Having plenty of time to run the trip, you're not on any schedule, so if you want to stay two days at one area, you do. Just running at a time of the year, either late in the summer or early in the fall when it's cool in the evenings and not so hot during the day, and you can lay out on top of your sleeping bag for a while, then you have to get in…

We ran several trips there in the early days where we went clear on down to Pearce's Ferry, so we would just pull the motors up after we'd gone through all the rapids and just float through the bottom half all night long, bounce off the cliffs. And the first thing you feel in the morning when you wake up and you're sleeping on the boat, is the birds there in the lake, where the river quits flowing and the lake begins, and you're kind of still in the marshes a little bit there, and there's a little fog over the water. I can remember that so well. That smell right there…That's a great way to wake up in the morning.

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1983 DVDs Available

You too can get a copy of the video of the 1983 high water shown at the gts. New video footage of the dam spillways going, as well as a bit elsewhere (surprise…)

Only $25 for GCRG members. $35 if you're not a member—mailed and all. You can get the show with music, video, etc. (as shown at the gts)…*or*, you can get just the high-quality photos that were in the show (tiff, jpg) without the music, video etc. (Photos are rendered to a much lower quality when made into a dvd.) *Or* you can get both versions together for $40 for members and $60 for non members.

There will be a website sometime next winter with downloadable lower quality shots. Hopefully this will become a repository of '83 stuff, and folks can upload new shots, download what they want, or order videos and/or high-quality footage.

To order, email jeffe0101@gmail.com with your order and address. I'll let ya know where to send the check (we're moving!).

Jeffe Aronson

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*benefactors and patrons get a life membership, a silver split twig figurine pendant, and our undying gratitude.
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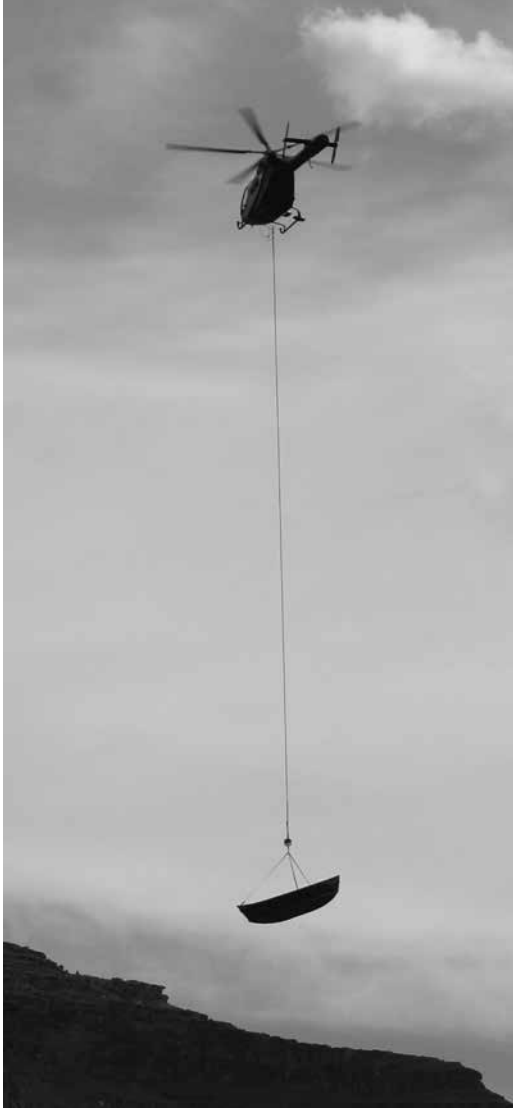

Not Your Usual Take-out

We laid over at Galloway and watched the entire resue of the dory that had been pinned for several days at the top of Deubendorf Rapid. It was exciting to watch Desrosiers and Co. at work. We all got a little emotional seeing this great old boat leave the Canyon on a long line.

Joe Bennion

You can see the complete set of photos and narrative at http://www.horseshoemountainpottery.com/joe/blog/?p=251

Thanks to all you poets, photographers, writers, artists, and to all of you who send us stuff. Don't ever stop.
Special thanks to the Walton Family Foundation, "Circle of Friends" contributors, and innumerable GCRG members for their generous and much appreciated support of this publication.

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