

Boatman's Quarterly Review

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TONY SPARKS

boatman's quarterly review

Published 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, emailed to GCRG. Include postpaid return envelope if you want your submission returned.

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

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Grand Canyon trip July 2022. 13 days of fun, rain almost every day and beautiful clouds. Photo: Orea Roussis.

Prez Blurb

Sacred Spiral—the consciousness of nature starting from the center and expanding outwardly—the way of all things.

Hello to all you fine folks out there! Although you will be reading this around the time the commercial river season in the Grand Canyon is ending, I am about halfway through the days I will work as a river guide this year. Currently I am enjoying a short break at home in Northern California between guiding in Idaho and heading back down to Arizona for the duration of the Grand Canyon season. I have been thinking of spirals lately, the above definition is only one of many. My fingers are crossed for a wet monsoon season that breaks the intense heat of summer and brings in the fall. The end of my term as president of the Grand Canyon River Guides association is fast approaching and WOW(!), it has been an honor.

I have been reflecting on my journey with the GCRG board and I am so proud to have had the opportunity to advocate for our community. The issues that I have been able to weigh in on serve the entire river community, not just the commercial guiding industry. Whether you are a commercial guide, a private boater, or maybe a passenger along for the ride, we have much in common. When you meet a new person who is a river runner chances are you have a mutual friend. You can instantly have a conversation lasting for hours about how cool a certain river is, funny stories about the shenanigans of river trips, or an arduous weather event. We speak the same language and it is a love of rivers and the canyons they have shaped. We love the adrenaline that comes from running a big rapid, the serenity of a peaceful canyon, the singing of canyon wrens, a swim behind the waterfall. Our connections extend beyond the rim

of the Grand Canyon to other rivers and places around the globe.

I think about other organizations that have evolved within river communities. A few on my mind are Grand Canyon Youth, The Whale Foundation, The Redside Foundation in Idaho, Friends of the River, American Rivers...this list could go on and on. They all advocate for the health of rivers and the health of the communities that revere them. Sometimes I dream of one united front and the power it could have to advocate for all rivers and their communities.

In my opinion one of the biggest accomplishments that has happened while I have been on the GCRG board is the creation of the Indigenous Scholarship Program. I hope that this scholarship program will help create an easier path to working in the outdoor industry for Indigenous people around the Southwest. I hope that this program will continue to evolve and shape many lives. The continued Point Positive workshops that teach us how to respectfully communicate with each other and also with diverse populations are such cool educational opportunities. They bring an awareness that change is inevitable and help us with the skills to navigate a wide variety of interactions in this industry. Like a river let us continue to move and change.

It is hard not to be nostalgic for the past in some ways. Reading about Tony Sparks in this issue of the BQR paints a very different picture of the Lees Ferry we know today. Tony had the concession at Lees Ferry, starting in the late '60s when traffic was sparse. He also founded the Fort Lee Company and had the first dam down permit. Since his era in Marble Canyon, this far away outpost has exploded with upstream travel, the dam down floats and has become a destination spot for sightseers. Hardly a put-in goes by a passerby does not ask my trip for information about the activities going on there. I can see the wheels turning in their

heads about how to come back for a better look and longer experience. New development in and around Marble Canyon is certainly on the way.

Interesting times are ahead. Climate change and its effect on the Southwest and the Grand Canyon are evident. Springs like Vaseys Paradise are almost completely dry and fail to replenish in the spring. The riparian zone along the river corridor as a whole is thick with years of unchecked vegetation growth since we don't get large floods down the river anymore. I see the proliferation of newer invasive species like the thorny Russian Olive tree. Take a look at either Lake Mead or Lake Powell and it is shocking to see their bathtub rings, emerging sunken boats, or a side canyon beginning to give away secret grottos once again. The water in the river is warm enough that the Humpback Chub seem to be rebounding, although new fish species are also moving in with untold consequence. Drag bag temperatures are unimpressive.

I encourage anyone with a desire to voice your opinion on issues surrounding proposed developments, the river trip experience, the preservation of the Grand Canyon and its resources to join Grand Canyon River Guides and/or run for the board. In doing so I feel I have paid a small contribution back to this place I love and my fellow humans that also enjoy the Grand Canyon. That you don't live locally is not a good excuse these days with the convenience of Zoom. Let us use our imaginations and dream big together. May the changes we effect be thoughtful, responsible and spiral outwardly.

A huge thank you to the current board, Rachel, Erica, Shonie, Shyanne, Jay, and Jake for all your collaboration efforts and time. You all brought great ideas and concerns to the table. I am humbled. Best to the new board members who have been elected in. Riley and Jay who are moving into president and vice

president roles I wish you all the best and trust your opinions completely. Mary and Kat...thank you so much for your long and dedicated service to the BQR as editors. It is a joy to

tune out and sit down with the most current issue. Lynn, you are the heart and soul of this organization and steer GCRG with a grace and poise I am in awe of.

Thank you all! It really has been such an honor to serve with The Grand Canyon River Guides association.

Billie Prosser

Dear Eddy,

In reference to Martha Clark's Oral History in BQR Volume 35, Number 2, Summer 2022.

DEAR BQR. What a great oral history interview Mary Williams and Sharon Hester did on Martha Clark (BQR, Volume 35 Number 2, Summer 2022). Thank you for not editing out the profanity. It makes it all the more Martha.

And Dear Martha: Thank you for your lovely homage to Wesley Smith, thank you for pioneering the Tabernacle and other classic "out there" hikes, thank you for adding value to the lives of thousands of people, thank you for feeding us

healthy and delicious meals, thank you for embracing and perfecting the paddle raft, thank you for making the kitchen the best place to be in camp, and thank you for sharing your lust for life. Your gifts are too numerous to count.

The vintage poster "You can sleep when you're dead!" is displayed in Downtown Subscription, a coffee house in Santa Fe, New Mexico. I tip my hat to you every time I buy my coffee there.

Rob Elliott



From a dedicated reader.

DEAR MS. SPILLMAN AND WILLIAMS. I recently read Zane Grey's book, the *Rainbow Trail*. Written in 1915, it is set on the Colorado Plateau, specifically in the Kayenta, Arizona Strip, and Glen Canyon. In a "daring escape" from "Mormons," our protagonist and his cohorts raft down the Colorado from Rainbow Bridge to Lees Ferry. Here is what Grey wrote, in the voice of his "hero" after that

day on the river. I thought readers of the BQR might find it amusing. I certainly did!

"But Shefford could not sleep. The river kept him awake. In the distance it rumbled, low, deep, reverberating, and near at hand it was a thing of mutable mood. It moaned, whined, mocked, and laughed. It had the soul of a devil. It was a river that had cut its way to the bowels of the earth, and its nature was destructive. It harbored no life. Fighting its way through those dead walls, cutting and

tearing and wearing, its heavy burden of silt was death, destruction, and decay. A silent river, a murmuring, strange, fierce, terrible, thundering river of the desert! Even in the dark it seemed to wear the hue of blood."

Ha! Assuming this was based on Grey's actual experience on the river, I guess it's safe to say he didn't enjoy his ride! From a dedicated reader of the BQR.

Rebecca Goodling

DEAR EDDY! We just got back from running down on our private permit. I was one of the last "waitlist holdouts" and it's been 25 years since I've been down. It's safe to say that I was going into this a bit rusty. One of the best things was how awesome it was to *feel* the support and camaraderie from the other boaters down there, both private and commercial.

The support started at the Ferry, before our trip even began: I was the only experienced boatman on our trip and we rented an S-rig from Ceiba who were first class all the way! When we were getting ready to move our boats from the ramp down to the private boater parking, my rookie team untied me and pushed us off into the current before I had even started the motor.

There I was, having a little mini-panic, trying to get a motor I'd

never used started and running. Then I looked over and saw that TJ and Bryce from Grand Canyon Whitewater were parked just downstream and that their whole crew was up and standing, ready to come help. It was such a complete relief to feel their presence! Just seeing them let me take a breath, get the motor going and relax into driving that thing.

Turns out TJ and Bryce were there for me through most of our trip. But so were some of my old friends from Western! It was so fun to run into Craig Lutke, Ronnie Haymond and Elise and Chris Jones. These are people who I went down with on their first trips waaay back in the day.

The good news is that these weren't the only people who were helpful and kind: Jim Hall and crew from GCE, Sean (Hatch?) and crew from Hatch, Jim from Outdoors

Unlimited and on and on.

With so many people running through that canyon at any given time, things could be a lot more competitive. It was absolutely refreshing and impressive how well the guides and boatmen from each company and private trip worked together to look out for each other. This was true for helping each other through the low water runs as well as for coordinating who was staying where.

I'd never seen water that low. Somehow, at every turn, another boatman always had my back. What an amazing community! Thanks to everyone for looking out for everyone else down there!

Clay Watson

Back of the Boat— The Whale Foundation News Bulletin

Hi all! I hope you're well and that the shift into fall weather has you looking back at a great river season. Around here, things have been closer to normal (whatever that means) than I've seen for a while. I've had a great time out on the water.

Lots of Whale Foundation news:

- This year, thanks to great community support, we were able to award *seven recipients* a total of \$12,500 through the Kenton Grua Memorial Scholarship program. That's seven guides working hard to make their lives and the world better who know we're all cheering them on. It means a lot!
- Also for 2022, we awarded health insurance stipends totaling more than \$6,000 through the Tim

Whitney Wellness Initiative.

The good folks in charge of that program are taking a hard look at it to see if we can extend the stipend program and find other ways to serve our community better. We'll keep you in the loop!

- You can mark February 18th, 2023, on your calendar for the next Wing Ding. It was great to see everyone who could make it this year, and we're hoping 2023 will be even better!
- Some of the very fine counselors who have worked with the Whale Foundation over the years have retired in 2022. We want to offer them our deepest gratitude for all the assistance and wisdom they've offered over the years. We're also putting

out a call for new counselors who would work well with the river guiding community. If you know of someone who might be a good fit, please let me know: whalefoundation@outlook.com. Thank you!

- Some Whale Foundation board members are reaching the end of their terms soon. If you've got a bit of energy, enthusiasm, and time that you could invest in helping make our community stronger and better, consider joining our team. More info at: <https://www.whalefoundation.org/volunteer>.

Thank you so much for all you do. Have fun out there!

Sam Jansen

F A R E W E L L S

**Allen Gilberg, January 25, 1953–
May 22, 2022**

Allen Gilberg, born January 25, 1953 passed away in his sleep on May 22, 2022 at his home in Kanab, UT. He was taking a mid-afternoon nap and the NPR News quiz show, “Wait-Wait, Don’t Tell Me” was the background chatter from his radio. It somehow seemed an appropriate sound track to launch him “downstream,” for a guy who loved true facts, current events, and trivia along with humor stirred into the mix.

Allen had *endured* a long bout with infections in his knees, following surgery and re-surgeries and ran many “big rapids” dealing with medications prescribed, allergies, and surviving on “permanent” antibiotics for the past several years. He thought this approach the lesser of two evils, keeping his leg(s) or not. He was a tough “Viking” of Norwegian descent and possessed a mighty threshold in name of perseverance.

Born in the Salt Lake City area, Allen attended high school, and later completed studies at the University of Utah, attaining a B.S. in Structural Engineering. He had many outdoor, childhood adventures, from skiing and climbing to hikes and backpacking. He talked of his main induction into outdoor exploring was summer employment at Zion National Park during his high school years. It was almost like a summer camp for him that he got a paycheck for. He learned to cook, tourist relations, and got turned on to slickrock, slot canyons and got into “trouble” with his peers/co-workers on days off with no proper equipment. They tried belaying each other with clotheslines, etc., but lived to tell about it and went home with great stories.

In the early '80s, Allen experienced a life-changing event when he got

“T-Boned” by a senior driver at an intersection one morning in SLC while riding to his engineering job on a Kawasaki 900. The driver had not seen a stop sign (or Allen). He estimated the impact at around sixty mph! After spending a full year in traction and a second year in recovery, contemplating life and such, Allen decided to return to school at Utah State University in Logan, Utah and Completed a Master's in Fine Arts Degree.

He moved to the country (southern Utah), grew out his hair, bought a VW split window bus and started making pottery. He expanded his skills, with ranching and animal care and started a sign painting/design business, realizing that pottery and ceramics weren't on par with an engineer's wage. When hearing about a boatman needing a “swamper” from his wife Jeannie (at the time), who worked in the office (at GCE) in Kanab, he went without hesitation. Like a lot of us, he got hooked on Grand Canyon and trained to drive S-Rigs for that company.

Allen worked mainly as a “support boatman” for GCE dories, starting in 1992, but also did several of their eight-day trips, rowed many dory trips as well as cultural and private trips. His last one was June, 2016. The knee issue became too much for guiding at the pro-level of performing. He continued with his design work until his last days.

One of his most notable trips in Grand Canyon was running support for a GCE sponsored, Martin Litton/ National Audubon Society filming trip, featuring James Taylor, in the spring of 1994. Allen, along with Art Thevenin, worked their tails off, not only rigging/packing/unpacking, etc., for guests, but also for a film crew and equipment for eighteen days, not



Photo: CC Lockwood

to mention cooking every meal. He told me it was the hardest trip he'd ever done and the absolute coolest.

Allen was a wizard at problem solving and enjoyed the challenge of helping people fix things. At home, in those ranching/sign painting years, he had the luxury of the early internet (pre-Google) for fact finding and it was as if the internet was invented for him. He was a PC guy. Macs were too simple for his taste. He also worked part time for a tooling company that made parts for the Space Shuttle, etc. Rocket science, right? When a passenger or guide would ask him a question about technical aspects of just about anything, his typical reply would be: “Do you want the thirty second answer or the thirty minute one?” Allen (on and off the river) always had a fine-tipped pen tucked in his shirt for quick calculations, note taking and sketching ideas or concepts. It could've been on a paper towel

or the palm of his hand, but he demonstrated his point.

He had a kind of cynical approach to all in life but remained ultimately optimistic in what needed to be done to fix things, from mechanical to politics to fine arts. He was that way with his taste to music, too. John Prine, Frank Zappa, David Lindley or any other, non-mainstream tune written with intellect and creativity to stir the imagination were on the top of his tastes in that realm. A nice balance to engineering and art, one might say. He also learned photography and took thousands of amazing pictures on his many Grand Canyon trips. The photos say a lot about him, and keeping humor in the mix is always good medicine!

One of my favorite Allen stories is the "Teva Sandals Trip." It would've been in the mid-'90s and one of the way-hot summer dory floats. A couple of families signed up to go, rounding out the roster of sixteen folks and had all bought the most expensive sandals available for their "Bucket List Grand Canyon trip". I believe it was the post period of Teva going corporate and selling-out to a mass-marketing/production firm.

By trip's end, Allen had sewn-up at least eight pairs of delaminating, \$110.00 (all Teva) sandals with his sewing awl. After the trip, Allen decided he'd call up the company and perhaps offer some critique on this particular product in their line of shoes.

Receptionist: "Hello this is Teva, how may I direct your call?"

Allen: "Hi this is Allen Gilberg. I'm a river guide in Grand Canyon and I'd like to speak with someone about the construction of your Tevas?"

Receptionist: "Well, first of all its pronounced Teh-vah (soft-e) which is a Hebrew word for "nature."

Allen: "No, it's pronounced TEE-Vah which is a Grand Canyon Boatman word for "piece of shit sandal!"

Receptionist: (Pause). "OH-Okay, Sir well, let me put you on hold and I'll see if I can find a technician."

Ultimately, Allen got his engineering question answered which boiled down to a bad glue issue with their product's line for that year, or something.

Allen is remembered for being the "Artist/Engineer" in my book. He was a fine cook, built and remodeled houses, boat trailers, photographer,

designer, teacher, and a perfectionist. Everything needed to be done in an eloquent way. His approach to running rivers was the same. Susan, his soulmate and partner, also describes him being a patient father when helping with teenagers, even though they weren't his own. It came naturally for him to help solve problems and fix things. Same goes for passengers, clients, friends, and co-workers. He held the ability to remain calm in "combat" situations and it spilled over.

Allen's "Big Norwegian Heart" ultimately gave its all. Broken from battling ailments, meds, etc.? Perhaps though, it was mostly missing the river. He reminded me of that, every time we spoke in later years. I was lucky enough to be there with him for many trips. That's a gem to keep!

I asked Allen to leave a thirty-pack stash for me once (for a private trip we were doing). He didn't leave a thirty. He left three-thirtys! The note on the cartons read: "Good Runs, Señor!" I still have that on my shop wall and will always carry it in my heart.

Andy Hutchinson

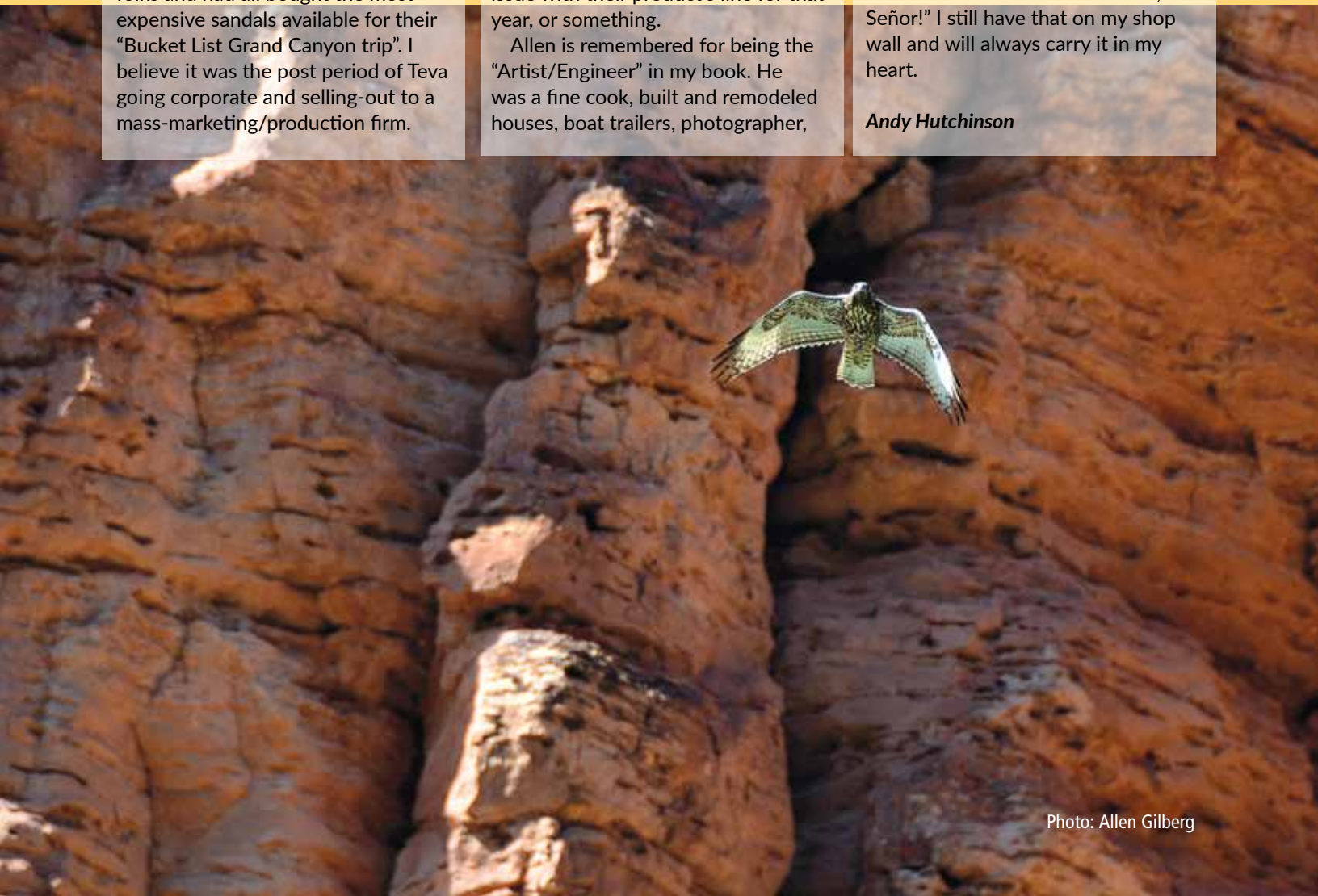


Photo: Allen Gilberg

**Ida Patricia "Pat" Diamond,
November 12, 1934–January 22,
2022**

Ida Patricia "Pat" Diamond (Nee, Christman) was born in Clawson, Utah on November 12, 1934 to parents Laura Lucille Blackburn and Joseph Franz Christman of Castle Dale, UT. She passed away peacefully at her home in Page, Arizona on January 22, 2022.

She married her high school sweetheart, William "Bill" August Diamond on December 1, 1950 and began their family in Utah before moving to Page, Arizona in December 1958.

While raising her five children, she worked at a variety of jobs in the early years. She managed the counter service desk at the first Post Office, ran the switchboard at the first hospital and assisted with bookkeeping at the Green Thumb Nursery.

During those early years in Page, Bill and Pat became close friends with June and Jerry Sanderson. Bill and Jerry worked together on the first police force in Page and that led to partnerships in many joint ventures over the years including the Glen Canyon Steak House, The Cove Lounge, the Page Lumber Yard and Sanderson River Expeditions where Pat was the office manager.

When the company split occurred, Pat and Bill purchased Harris Boat Trips, formed Diamond River Adventures and Pat reprised her role in the new company. For the next thirty years she was owner, office manager and Mom to scores of river guides. In the later years she transferred responsibilities to her daughters allowing her to spend more time with her grandchildren and great-grandchildren. She was never happier than when surrounded by family.

Few people were aware of Pat's many artistic talents; the love of flowers and flower arrangements for bouquets at the nursery and weddings (including a knack for tying ribbons into bows so fast and making it look easy but no one could replicate), watercolor landscape paintings, creative quilts, crocheted blankets and decorative doilies. She claimed she never liked to cook but she instilled a love of cooking to her children and grandchildren. Also the many handmade Christmas decorations, that will be treasured by family for many years to come.

Pat was preceded in death by her parents and five brothers, her husband Bill, and her children; Donald Ray, Derryl W., and Laurie Ruth Diamond, and by her grandson Rhys Matthew Barnett. Surviving family members include her

daughters, Helen Kay Diamond Hibbert and Leslie June Diamond, grandchildren Trenton Diamond, Denton Siebrecht and Danielle Mae Siebrecht and great-grandchildren William John Barnett and Evalyn Ida Barnett.

Pat Diamond was the essence of what a matriarch for both a family and company should be—loving, kind and yet firm in her beliefs. She is and will be sorely missed by the entire, and extended Diamond family.

Helen Hibbert



Confluence. Photo: Allen Gilberg

NEW WARMWATER FISH INVASIONS THREATEN THE VIABILITY OF GRAND CANYON'S NATIVE FISHES

The last time average daily water temperatures in the Colorado River downstream of the Glen Canyon Dam at Lees Ferry were higher than those observed during the summer of 2022 was October 1968—approximately four years after the closure of the Dam. Warmer lake surface waters are being drawn through the Glen Canyon Dam turbines as Lake Powell levels decline, creating suitable

spawning habitat for warmwater fishes in the Colorado River. These improving conditions, combined with conservation actions for native fishes, have led to a native-dominated fish community in the Grand Canyon and the down-listing of humpback chub from endangered to a “threatened” species under the Endangered Species Act. Regardless, profound change may be on the horizon as new threats emerge with

continued declines in Colorado River water and climate change. Predatory invasive warmwater fishes appear to be passing through Glen Canyon Dam in greater numbers and may establish new populations downstream. The question remains whether positive changes in the native fish community are short-lived.

As reservoir water storage in the Colorado River basin has

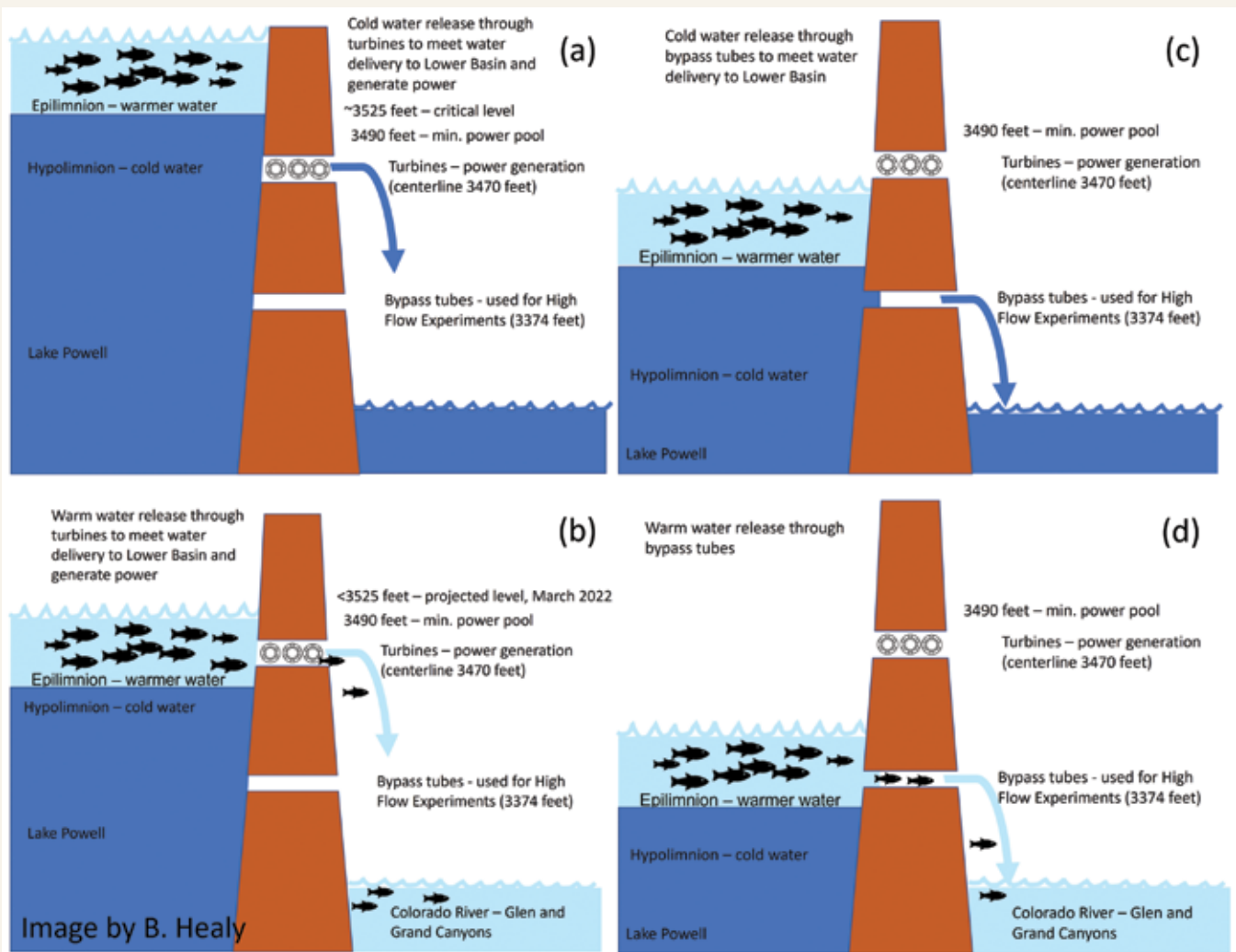


Figure 1. Implications of declining reservoir levels to warmwater invasive fish passage risk and temperature of water discharge passing through Glen Canyon Dam at different lake levels (a-d). A thermally-stratified Lake Powell is depicted on the left side of each diagram, with Glen Canyon Dam infrastructure in the center, and the Colorado River in Grand Canyon downstream (right). Thermal stratification occurs during warmer months, with warmer, well-oxygenated levels toward the surface (epilimnion—light blue), and colder, less-oxygenated water deeper in the lake (hypolimnion layer—dark blue). Warmwater invasive predatory fishes inhabit the epilimnion layer of Lake Powell during summer.

declined, due to a complex set of circumstances related to water overallocation and climate change, warmer waters from the epilimnion layer (the layer of water on a lake that is closer to the surface during warm months) of Lake Powell are being discharged through Glen Canyon Dam during summer months (Figure 1b). When Lake Powell was near its water storage capacity, colder hypolimnetic water (water deeper within the lake under the epilimnion layer) with lower dissolved oxygen content that is less suitable for warmwater fish was discharged through the Dam (Figure 1a). These colder conditions had been the norm after Lake Powell reached capacity in the 1980s, continuing until the mid-2000s. Warmwater native fishes had declined in the Colorado River when the reservoir was near

capacity, introduced trout thrived in the cold clear waters, and most warmwater invasive predatory fishes were kept at bay. Since March 2022, Lake Powell had reached a critically low level not seen since 1968—an elevation where the turbine intakes are more in line with the epilimnion where the highest number of invasive warmwater fishes are found in Lake Powell during summer (Figure 1b). Predictive modeling conducted by researchers at Utah State University suggest continued future declines in Colorado River reservoir levels with human water use in the Upper Basin and shrinking snowmelt runoff from Rocky Mountains. Depending on the future level of Lake Powell, Glen Canyon Dam discharge may become cold, and then warm again (see Figure 1c, 1d).

The most dramatic change to

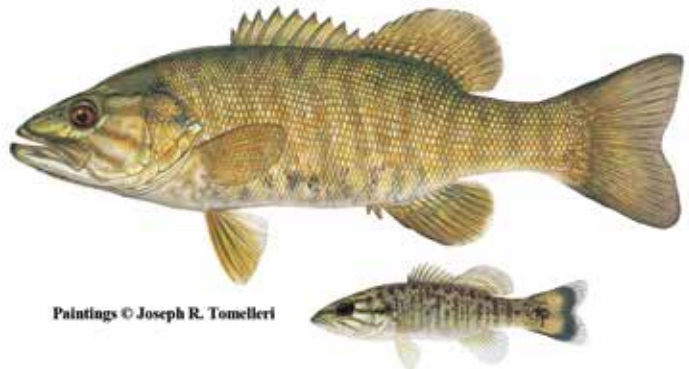
the Grand Canyon's native fish community in decades could occur if new invasive warmwater predators become established. Continued declines in reservoir levels in the immediate future increase the likelihood of invasive warmwater predators passing through the Dam. Warmwater predatory sportfish like smallmouth bass (see flyer), walleye, and green sunfish that are common in Lake Powell have been relatively rare in the Grand Canyon in the post-dam period. Smallmouth bass, native to the Great Lakes, Red River, and Mississippi River basins, are considered among the highest risk invasive species threatening Colorado River native fishes. For example, in the Upper Colorado River Basin's Yampa River, a combination of drought and low river flows facilitated high escapement

Help us detect invasive Smallmouth Bass

Smallmouth bass are a dire threat to the Lees Ferry rainbow trout fishery and Grand Canyon's native fishes, including humpback chub



Male smallmouth bass guarding a nest



Paintings © Joseph R. Tomelleri

As Lake Powell levels lower, river water temperatures are rising, providing ideal conditions for smallmouth bass. Temperatures of 61° F (16° C) and above are ideal for spawning of these nonnative predators. They guard nests in calm habitats like backwaters or tributary pools

Watch for smallmouth bass in eddies, backwaters, and tributary mouths. Help us detect and remove these predators before it's too late. Harvest bass—do not release them alive. If you see or catch bass, please email an NPS fish biologist below with location and date. Photos greatly appreciated!

Jeff Arnold, Glen Canyon National Recreation Area

jeff_arnold@nps.gov

Brian Healy, Grand Canyon National Park

brian_healy@nps.gov



from headwater reservoirs and proliferation of smallmouth bass that led to the extirpation of humpback chub. Approximately \$2 million per year (approximately \$30 million total) is spent suppressing populations of smallmouth bass and other predators to protect endangered fishes in the Upper Colorado River Basin. Since the end of June, six recently hatched or juvenile smallmouth bass have been captured in a slow-velocity backwater habitat downstream from Glen Canyon Dam, suggesting spawning is already occurring below the Dam for the first time. Efforts to contain those newly hatched fish in the backwater have included the installation of barrier nets. We expect that if smallmouth bass and other predators expand and become established throughout the Colorado River in Grand Canyon where suitable spawning habitat exists, it could be a point of no return for humpback chub and other native fishes.

Fisheries biologists are discussing management responses to these new warmwater fish invasions. Some management options are available that may help to slow the establishment or spread of invasive predatory fishes, but none are inexpensive, easy to implement, or without controversy. The first priority is to prevent an invasion in the first place, but many prevention options may involve maintaining higher reservoir levels or alterations of dam discharge—options that may be difficult or impossible to implement due to water availability and delivery requirements. In the Upper Basin, researchers from Colorado State University have developed a study plan for using dam operations to inhibit smallmouth bass reproduction in the Green River using a summer “spike flow” of cold water. Initial results of an experiment conducted by the Upper Colorado River Endangered Fish Recovery Program appear promising, and predictive modeling suggests reductions in reproduction may more successfully suppress the population

than mechanical removal of older individuals. A similar cold spike flow out of Glen Canyon Dam could be possible with the current lake levels and use of discharge through the bypass tubes (before conditions decline to those depicted in Figure 1b). Some management options that may not require changes to Dam operations are included in the NPS Comprehensive Fisheries Management Plan. For example, Grand Canyon National Park’s Native Fish Ecology and Conservation Program has successfully used mechanical removal techniques (e.g., electrofishing) in tributaries to suppress invasive brown trout and rainbow trout that threaten native fishes. Mechanical removal of smallmouth bass would be much more difficult and labor intensive on the mainstem Colorado River but could be applied to localized areas as a rapid response if spawning is detected. However, many Traditionally Associated Tribes hold all aquatic life sacred, regardless of its native or introduced status, and it is hoped that no large-scale invasive fish removal is necessary for smallmouth bass. An additional option for native fish conservation could be to continue to attempt to establish and maintain refuge populations of humpback chub and other native species in tributary habitats upstream of barriers preventing invasion by predators from the Colorado River (e.g., Havasu and Shinumo creeks).

Fisheries biologists and managers can use the help of river runners and guides. Early detection of new invasive species is a critical part of a rapid response plan. If smallmouth bass or other warmwater invasive fishes are captured, please report them to the National Park Service (see flyer). To read more about the issues summarized in this article, as well as published and ongoing research, please refer to the following links:

- Native Fish Ecology and Conservation Program, Grand

Canyon National Park website: <https://www.nps.gov/grca/learn/nature/fish.htm>.

- For information related to the rediscovery of razorback sucker in the Grand Canyon in 2014: <https://www.doi.gov/news/pressreleases/once-thought-locally-extinct-endangered-razorback-suckers-discovered-spawning-in-grand-canyon-national-park>.
- Research documenting recovery of native fishes in the Colorado River in the Grand Canyon: <https://bioone.org/journals/western-north-american-naturalist/volume-80/issue-2/064.080.0202/Small-Bodied-Fish-Surveys-Demonstrate-Native-Fish-Dominance-Over-300/10.3398/064.080.0202.full>; and in Bright Angel Creek, with support by the Bureau of Reclamation, Grand Canyon Conservancy, and Arthur L. and Elaine V. Johnson Foundation: <https://cdnsiencepub.com/doi/full/10.1139/cjfas-2020-0028>.
- Center for Colorado River Studies at Utah State University, including several white papers documenting the future of the Colorado River: <https://qcnr.usu.edu/coloradoriver/futures>.
- Bureau of Reclamation website on Lake Powell and Glen Canyon Dam Operations: <https://www.usbr.gov/uc/water/crsp/cs/gcd.html>.
- Research documenting successful establishment of humpback chub through translocations to Havasu Creek, with support by the Bureau of Reclamation, Grand Canyon Conservancy, and Arthur L. and Elaine V. Johnson Foundation: <https://afspubs.onlinelibrary.wiley.com/doi/full/10.1002/nafm.10408>.
- For information related to the Upper Colorado River Endangered Fish Recovery Program: ColoradoRiverRecovery.fws.gov.

Brian D. Healy

Native Fish Ecology and Conservation Program, Grand Canyon National Park

Female Leaders in Botanical Discovery: Past and Present

Women are leaders in scientific study and natural resource preservation at Grand Canyon. This summer, I had the opportunity to complete an internship celebrating women in science at Grand Canyon National Park. The main purpose of this position was to support the Park's herbarium and provide park

interested in plants when she and her husband moved to Gila County, Arizona in 1914. While her husband spent his days working in the Silver Butte Mine, Rose explored the

scientific names of the plants she was gathering. Gradually, she began to contribute to collections all over the world. Collom's plant collecting led to the discovery of several plant



Rose Collom collecting on the North Rim in the early 1940s. Photo courtesy Grand Canyon Museum Collections.



Elzada Clover and Lois Jotter Cutter sit next to each other looking at a book. Photo courtesy The Huntington Library—Otis Marston Colorado River Collection.



Elzada Clover in a boat on the River. Photo courtesy Grand Canyon Museum Collections.

education programs to the public with an interdisciplinary approach. I got to hike around the park collecting plant voucher specimens and then catalogued and preserved these specimens in the Park's herbarium. This internship celebrated the work of botanist Rose Eudora Collom, Grand Canyon's first paid botanist. Collom was born in Georgia on December 20, 1870. She became

foothills of the Mazatzal Mountains where she began collecting seeds, cuttings, and specimens. Self-taught, she ordered botany books to educate herself and began writing to well-known botanists such as Joseph Nelson Rose, Thomas Henry Kearney, and Robert Hibbs Peebles. Through correspondence with these men and studying botanical works, she learned the common and

species new to science, which were named after her. The specimens she discovered and collected include Gila County liveforever (*Dudleya collomiae*), Butter Cress Buttercup (*Ranunculus collomiae*), and Gila Bedstraw or Fossil Hill Creek Bedstraw (*Galium collomiae*).

In June of 1938, at the age of 68, Collom traveled to Grand Canyon National Park. She corresponded



Utah Century Plant (*Agave utahensis*). Photo by Christine Dyer.

botanist, obtained approval to collect plants, accompanied by graduate student, Lois Jotter Cutter, naturalist, on a Nevills Expedition trip on the Colorado River. This was the first ever documented case of women successfully running the Colorado River (Bessie Hyde was the only other woman at this time who had attempted going down the river). The trip took over 43 days as they traveled over 660 miles of challenging waters and treacherous terrain. Jotter wrote of their time in the Canyon, “We collected furiously.” Clover wrote, “It was just a part of the day’s work to make a flying leap for shore, to climb steep cliffs after plants, and to get photographs.” By the end of the trip, Clover and

has 1,021 of her specimens, while 331 more are housed at other repositories. Collom died December 26, 1956, six days after her 86th birthday. After her death in 1956, Collom was inducted into the Arizona Women’s Hall of Fame. Collom explained her attraction to flowers as follows, “When one lives year after year apart from the world, miles from neighbors, towns, and railways, flowers become companions, and one not only enjoys them, but learns much from them. Our Arizona wild flowers are unique, beautiful and hardy, and courageous. They often grow, bloom and bear their fruit under most discouraging conditions. One watches for them and greets them as old and faithful friends, and surely from them one can derive strength and courage and faith.”



Grand Canyon Century Plant (*Agave phillipsiana*). Photos courtesy of Amy Prince and Wendy Hodgson.

with Edwin McKee, cofounder of the Grand Canyon Natural History Association, who offered her a grant to collect specimens in the park. Collom’s contribution to local botanical discovery began in June with collection of her first two specimens at the North Rim on the 23rd: Heart-leaved Buttercup (*Ranunculus cardiophyllus*) and Spreading Phlox (*Phlox diffusa*), with four additional specimens collected from the South Rim on the 24th. 1938 proved to be a seminal year for women in Grand Canyon botany. In May, Dr. Elzada U. Clover, University of Michigan

Jotter had identified five different plant zones and over fifty species, with four previously unidentified species. The primary goal of this trip was botanical discovery, but Clover and Jotter made history by becoming the first females to successfully descend the Colorado River through its major rapids.

Like Dr. Elzada U. Clover and Lois Jotter, Rose Collom continued to forge a path for women in the Grand Canyon throughout her career. Collom was employed as a botanist in Grand Canyon from 1939–1954. The herbarium, located in Grand Canyon National Park’s Museum Collection,

Many plants grow on the precipitous slopes of the Grand Canyon. I will focus on four. The first two are the only species of agave in the Grand Canyon. Utah Century Plant (*Agave utahensis*) grows to be about five meters tall with yellow flowers in panicles. It takes twenty to forty years for this agave to send up its towering stalk. It can be seen flowering from May–July and, after, it dies. The other species, Grand Canyon Century Plant (*Agave phillipsiana*), is only found in a handful of sites within the Grand Canyon and looks distinctly different from the other species in the Grand Canyon.



Sacred Datura (*Datura wrightii*) leaves and flowers. Photo by Christine Dyer.



Sacred Datura (*Datura wrightii*) fruit. Photo by Christine Dyer.

It has grayish-green arching leaves that grow to twice the size of the Utah Century Plant. The Grand Canyon Century Plant produces a flowering stalk with cream-colored blossoms on long, widely spaced lateral branches. This species is believed to be introduced and farmed

by pre-Columbian people through trade with people in Mexico. The Grand Canyon Century Plant can be found on terraces along a few major tributaries to the Colorado River in the Grand Canyon and is associated with archeological sites. Early southwestern inhabitants utilized

these century plants for food, fiber, medicine, and alcoholic and nonalcoholic beverages. Agave roasting begins with the harvest of these plants just before the emergence of the flowering stalk when the plant's core is filled with sugars. The cores are then roasted in a pit layered with coals, rocks, and moist vegetation, and covered with soil. Roasted agave is a sweet treat for prehistoric and modern desert dwellers. All agave species are protected by law and require a permit for collection.

The last plant I will focus on is Datura.

There are two different species of Datura found

in Grand Canyon (*Datura wrightii*) and (*Datura meteloides*). This plant is also known commonly as Sacred Datura, Jimsonweed, Moonflower, and Thornapple. On my first river trip down the Colorado River, I was captivated by the beauty of Sacred Datura and desired to learn more about this beautiful species. Sacred Datura is found throughout the canyon from 365 meters to 1,280 meters of elevation. It has large, lily-like, white flowers that open in the evening, which attract a variety of pollinators. Hawk or sphynx moths (*Sphingidae*) are particularly attracted to the Sacred Datura. Keep an eye out for them flying dizzily around, drunk on Sacred Datura. The funnel-shaped flowers droop in the daytime, but, regardless, it is easily distinguishable by its spiky circular fruits and dark green leaves which contain high concentrations of psychoactive alkaloids that can cause blindness, seizures, kidney failure, and death. Despite its toxic qualities, native peoples throughout the Americas use this plant during ceremonial rites for its psychotropic properties.



The author collecting Sacred Datura (*Datura wrightii*) in fruit at Phantom Ranch. Photo by Christine Dyer.

The Grand Canyon has drawn many scientists to explore its marvels and wonders. Many have made impacts on what we know about this place. Women in science have made history studying and learning amongst the canyon walls. Women such as Rose E. Collom, Dr. Elzada U. Clover, and Lois Jotter Cutter pioneered work as botanists and naturalists. Their work led to the discovery of dozens of plant species within the Grand Canyon and encouraged other women to venture into the Grand Canyon and down the Colorado River. With their tenacity, they blazed a trail for other women to follow in their footsteps. From the rim of the canyon to the Colorado River, these women in science powerfully influenced the future of botany. Beyond her scientific achievements, Rose Collom had quite the way with words. To conclude, I would like to share one of her quotes that inspires one to conserve and protect the precious environment in which we live. "In these troubled times when all the world is so upset, I think it rather steadies one to 'consider the lilies of the field,' to examine closely the exquisite texture and coloring of the petals of many flowers, to look with appreciation upon a magnificent forest and to feel thankful for the beautiful world in which we live."

Special thanks to: Grand Canyon National Park, Northern Arizona University's Public Lands Internship Program (<https://nau.edu/cefns/public-lands-internship-program/>), National Park Foundation Women in Parks grant program (<https://www.nationalparks.org/our-work/campaigns-initiatives/women-parks>), Amy Prince, Lonnie Pilkington, Tarryn Bartkus, Ahsa Hakanson, Sanoma Boynton, Wendy Hodgson, Colleen Hyde, Kim Besom, and Richard Quartaroli.

Christine Dyer

Biological Science Technician Intern for Grand Canyon National Park Vegetation Program

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Deep in the Canyon

The twitch of a willow
In the soft gentle breeze
Allows my mind to rest,
Sets my heart at ease.

The stars shine brightly
In the dark night sky,
Sharing the light of eons
Upon meeting my eye.

The river speaks softly
As it meanders through its bend,
Flowing in currents that know no end.

Deep in the canyon
All else slips away.
If only this moment
Were in every single day.

—Kelly Boner

This poem was written by Kelly Boner in Grand Canyon in April 2022. She guides on rivers in Colorado. It was submitted on her behalf with permission by Mike Bronson, a '70s Grand Canyon river guide.



I'm a River Guide and Water Lawyer. I'm Scared for the Grand Canyon.

This blog appeared on *American Rivers'* website on July 20, 2022 and is reprinted with permission from *American Rivers* and the author.

As a Grand Canyon river guide, I know something about facing sometimes harsh and dangerous conditions and finding beauty and meaning in the world. As a water lawyer, I know how difficult it is to align our legal and social systems with physical reality and human values—and yet that we can choose to do so. Right now, as fires rage and this two-decades-long drought takes its toll on rivers and water supplies across the Colorado River Basin, I'm concerned about the choices we will make for the future of the Colorado River and Grand Canyon.

In May, the Bureau of Reclamation announced emergency “drought response” measures to keep the Colorado River system from collapsing over the next year. For the first time in history, the amount of water to be released from Glen Canyon Dam and Lake Powell, through the Grand Canyon to Lake Mead, was reduced part-way through the water year. Along with other measures announced by Reclamation, this was necessary to keep Lake Powell from further plummeting to

calamitously low levels—to where there is not enough water in storage for the City of Page and Navajo community of Le Chee to access their drinking water supplies; to where Glen Canyon Dam can't produce power; to where water has to be released through emergency outlet tubes never designed for sustained operation.

I am told that these measures were announced immediately to accomplish the needed reduction in dam releases—and hence river flows—without risking a period of actually drying up stretches of the Colorado River.

The reductions come as a disappointment to me and my river guide friends—and our employers, the owners of whitewater rafting concessions that take people on weeks-long, wilderness-style expeditions through Grand Canyon. Already this spring has been windy, and with the boats heavily laden, it can stretch one's physical limits to get downstream, navigating shifting currents and powerful whitewater. The lower and slower the water, the more time we spend pushing from point A to point B instead of exploring and enjoying the Canyon. Shallow, exposed, sharp rocks mean more time we may spend repairing boats rather than rowing them, and

lower water also means less flexibility for campsites after long days on the water. The lower the water the more tired we all are, and our margins for safety and satisfaction narrow.

We river guides are always thinking about flows before a season and before a trip, and there's been a lot of consternation lately about low flows—this year but in years to come as well. How sharp will the rapids and drops be? How will the paddleboat do in Horn Creek or Waltenberg? Do we need more days for trips billed as “Hikers Specials” if this continues, and will people sign up for trips that long? Will motorboats be able to keep running the river without smashing their props? This spring some guides have been choosing not to row wooden dories in the low water, because of the time and hassle that could go into repair if a dory cracks on a shallow rock. Friends recently returned from a trip with brutal wind and low water, where on the first day they barely made it six miles, pulling into camp with bloody hands and exhausted bodies. This was prior to the announced reductions.

But while we fret and grumble, guides also take great pride in being able to “take what we're given,” and make the most of challenging conditions. Our job is to help people

safely experience a challenging but wondrous place—so they can feel the magic, the fun, the laughter, and the awe, with everything that two weeks in the Canyon can bring into a life.

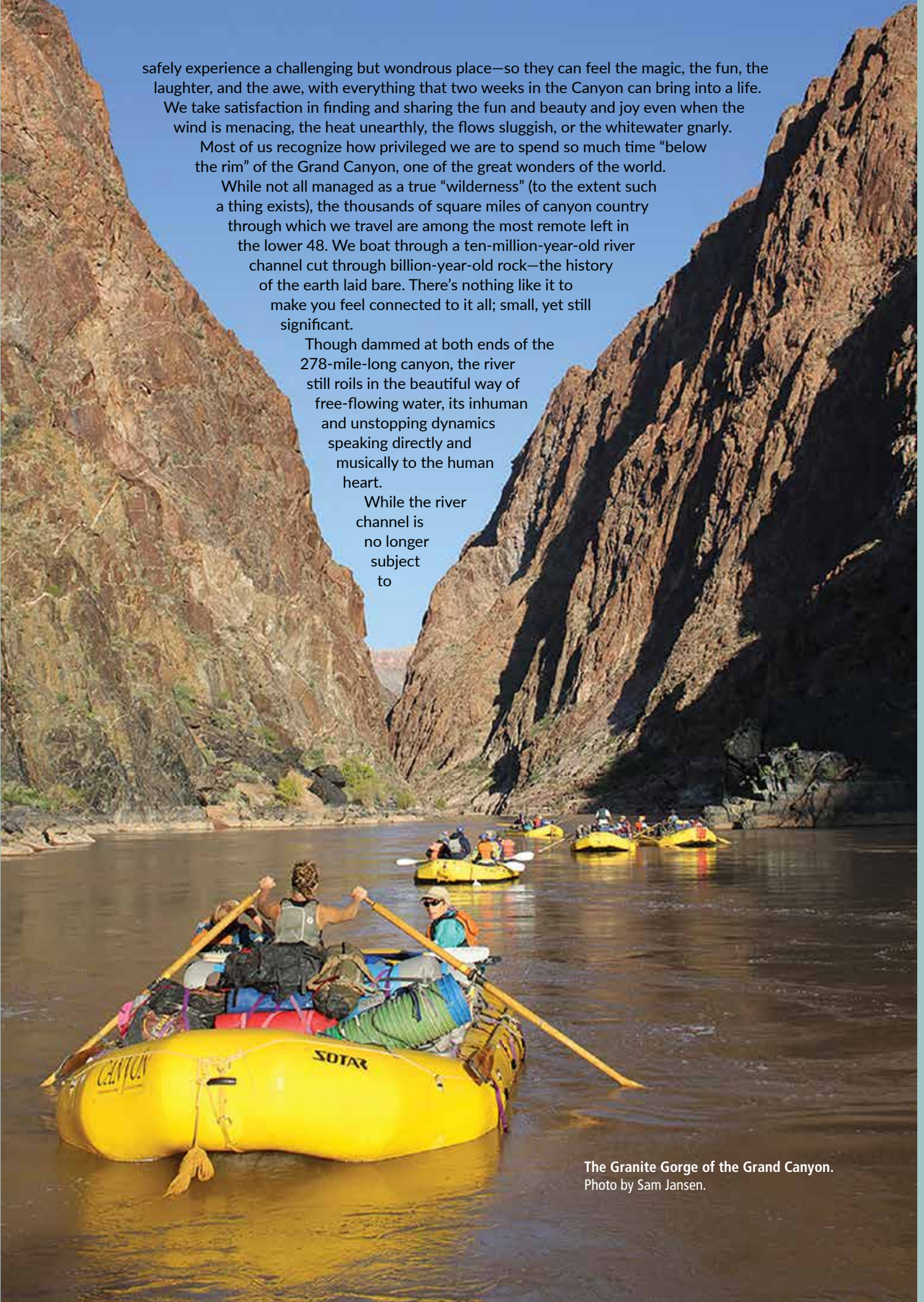
We take satisfaction in finding and sharing the fun and beauty and joy even when the wind is menacing, the heat unearthly, the flows sluggish, or the whitewater gnarly.

Most of us recognize how privileged we are to spend so much time “below the rim” of the Grand Canyon, one of the great wonders of the world.

While not all managed as a true “wilderness” (to the extent such a thing exists), the thousands of square miles of canyon country through which we travel are among the most remote left in the lower 48. We boat through a ten-million-year-old river channel cut through billion-year-old rock—the history of the earth laid bare. There’s nothing like it to make you feel connected to it all; small, yet still significant.

Though dammed at both ends of the 278-mile-long canyon, the river still roils in the beautiful way of free-flowing water, its inhuman and unstoppable dynamics speaking directly and musically to the human heart.

While the river channel is no longer subject to



The Granite Gorge of the Grand Canyon.
Photo by Sam Jansen.



The author and paddle crew. Photo by Sam Jansen

a muddy spring flood, summertime trickles, or the full force of upstream monsoon torrents, the Colorado River still supports a remarkable universe of interconnected life and ecosystems—riparian, aquatic, terrestrial, life forms from three of the continent’s four great deserts... full of intricate stories of ecological niches and interconnections that have evolved over eons.

We are privileged—to an extent unjustly—to spend so much time in a place revered by at least eleven tribes and indigenous nations for whom it has been home for centuries, and from whom European settlers took it by force.

Given that sense of supreme privilege, most of my guide friends have accepted the news of Lake Powell’s plummeting—and consequently uncertain flows in the Canyon—with a good deal of stoicism. The feeling is that we have been lucky—and if there’s no longer enough water for things to continue as they’ve been, we will adapt. With the drinking water of forty million people on the line, who are we to be phased by the loss of river flows or our life-altering expeditions through the heart of the Earth?

I would more easily feel this way too, if the declining flows had been unavoidable—or were just for this year—or were part of a larger plan to make our use and treatment of the Colorado River or the Grand Canyon

more sustainable, caring, or just.

But that is not the case. This year’s reductions from Glen Canyon are in response to an “emergency”—but an emergency that we have seen—or at least could have seen—coming for decades. It didn’t have to be. What’s more, these reductions reflect only a small, temporary stopgap. They don’t fix the massive problem we now face on the Colorado River.

Since 1922, the law governing the Colorado River was set up to apportion and use more water than the river actually provides. The Colorado River Compact allocated at least 15 million acre-feet of water, then a 1944 treaty allotted an additional 1.5 million acre-feet to Mexico. That’s at least 16.5 million acre-feet of water that various states, nations, and water users can legally take out of the river. This doesn’t even include the more than a million acre-feet that evaporate from desert reservoirs and canals or are otherwise lost from the system. To add insult to injury, the Compact doesn’t address the needs of all of the Basin’s tribal nations and flat-out ignores the needs of river ecosystems and wildlife.

Even when the Compact was being ratified there were indications that the river’s flows were less than what was being divided up. In reality, the average flow in recent years has been more like twelve or thirteen million acre-feet. Climate scientists and

hydrologists tell us that soon we may have to live with as few as eleven, or even nine, million acre-feet of water in the system.

In the early years of the big dams, the Upper Basin (Colorado, Utah, Wyoming, and New Mexico) used far less water than allocated and a period of wet years filled up the reservoirs, providing a savings account.

Those days are gone. For about the last twenty years, actual usage throughout the Colorado River Basin has far exceeded the amount of water supplied by the river, and now with the rapid decline of Lakes Powell and Mead, we are seeing the inevitable impacts of this overuse.

What’s more, we have known this is happening, we just didn’t know it would happen so fast. The Basin states and Reclamation have taken steps in recent years to begin to address it, but these steps are proving insufficient, and reservoir levels are plummeting further and faster than imagined. Hence this spring’s emergency measures—measures known to be short-term and inadequate to fix the problem.

Let me be clear, I am very much in support of these measures and recognize their necessity. If flows through the Canyon were not reduced this summer, the situation going forward would be even worse.

But I’m angry that it has come to this, and I’m scared and sad about what may happen next. We are in need of a reckoning: we need to stop using more water than the river provides and blowing through our stored supplies at a terrifying rate. We have needed to do so for years now.

So can our reckoning, when done in a crisis, be done in a way that actually improves the integrity, sustainability, and justice of the system? I am nervous about the potential manifestation of the “Shock Doctrine”—where massive crises are used as an excuse to change systems in ways that otherwise never would have been socially, culturally, or even legally acceptable.

Last fall, an anticipated high-flow through the Canyon was not implemented. These flows are called for as part of the adaptive management practices developed to redistribute diminishing sand and sediment in the post-dam river channel—in turn protecting cultural sites, habitat, and recreational access. The fall flow was decided against, not because there wasn't the water to do it— it wouldn't have changed the total amount of water released over the course of the year—but because of costs and also concern about reservoir levels dropping to lower levels even temporarily. Here already, we allowed a deviation from what would ordinarily have been undertaken to support Canyon resources and values because of the water supply “crisis”—though doing so did not (contrary to what many assume) help address the Basin's overall water supply deficit.

I believe that what's needed to protect our water supplies going forward is fundamentally consistent with what we need to protect the

Canyon and the extraordinary ecosystem the Colorado River creates. We must stop using more water than actually flows down the river.

We must all use less water throughout the Basin. This means massive change—but it's doable, and what's more, we really have no other choice. It's long past time.

This reckoning may also mean more years of low annual flows through the Canyon, as we seek to stabilize the system and stop the plummet. Sadly, we may not be able to solve our problems while continuing to release the same amount of water from the Upper Basin to the Lower, through the Canyon.

But if we want to continue to have water to support the millions who rely on it, if we hope to take care of the Grand Canyon and its river, if we want to even have a choice about what flows look like in the future, we need to stabilize this system. We can't continue to deny the reality of simple numbers, and we can't rely on year after year of hurried emergency

measures to get us by. That's not planning, that's triage.

Crises are opportunities. In the coming months and years, we can fix a mess of our own making and bring increased rationality, stability, perhaps even justice and accountability toward our planet and our people, to our water use in the Southwest.

Let's take this opportunity, and not use our “crisis” as an excuse to ignore what matters or degrade the health of the Grand Canyon—one of the most beautiful, humbling, and awe-inspiring places on our planet—a place that gives us inspiration to be better people, with broader vision and grander dreams.

Jocelyn Gibbon

The Bottom of Crystal Rapid, from the scout.
Photo by Sam Jansen.



Threats to the Little Colorado River

In October 2017 the Navajo Nation Council, the legislative body of the Navajo government, voted against the Escalade Project. Only two delegates supported the project that would take away land from the people of Bodaway. The developers wanted 400 acres of land right above the confluence of the Colorado and Little Colorado Rivers. It would be a tourist attraction where visitors would be taken down to the river level using a gondola. The people of Bodaway formed a coalition in 2009 when this proposal first surfaced.

The developers divided the people. The pro-Escalade and the Save the Confluence (STC) families who once were together took opposite stances. The developers watched as the two groups argued and at times physical altercation played out. Throughout all this STC and supporters stood their ground.

About two years ago, STC heard about another outside developer interested in developing two dams along the Little Colorado River (LCR). A third dam would be built in the Big Canyon, a side canyon. Water would

be pumped from the river or aquifers and stored in dams at the top of the canyon. This created a source of potential energy. Electricity would be generated by running the water back into the canyon using turbines.

The community of Cameron, the Navajo and Hopi governments, and STC objected. STC started networking with organizations and communities connected to LCR with the goal of informed-decision making. The result of this community-based effort forced the developers to surrender two dams on the LCR. The threat to build the



In this aerial view the Little Colorado flows near the area known as Big Canyon, east of the Grand Canyon National Park. Photo courtesy of EcoFlight.

Big Canyon dam is still active. It means that the storage ponds will forever destroy the fragile high country livestock grazing area. Just about every outside developer over the decades, directly or indirectly related to LCR, have negatively impacted the ecosystem. Back in the 1970s a uranium mine storage dam broke located east of Gallup, NM. How far down the LCR was contaminated was never determined. In the Cameron area there are still open uranium mine pits that feed water to the LCR. In the early 2010s then U.S. Senators Jon Kyle and the late John McCain visited Tuba City to negotiate and to settle the Water Rights between Navajo and the U.S. The two senators wanted to pump water from the LCR aquifers and deliver it to Phoenix!!

Why are threats to the LCR a huge concern to STC? Navajo Culture and Traditions are earth-based. We acknowledge the presence of the Holy People who live in the canyons, the mountains, water, Father Sky and Mother Earth. In the morning we pray and offer powdered white corn to the East and yellow corn to the West at dusk. At the sacred sites along the LCR we offer corn pollen as we pray for harmony, good health, and positive outcomes. Thus, this is the spiritual connection between the people and the earth. As children, we have been told by our Grandparents how outsiders were allowed to develop projects that would help the people. In the end, when the developers were done destroying the land, the way of life for the Navajo people would forever change. Cancer and other diseases were never big problems before. It is the disruption of the balance between the Beauty and the Dark ways.

William LongReed

How Can You Help?

Please Sign the Petition Opposing the Big Canyon Dam Project

Join Save the Confluence in saying **NO** to the proposed Big Canyon pumped hydro storage project on a tributary to the Little Colorado River (LCR). Unwanted and inappropriate development would industrialize this culturally significant, remote and pristine area. The proposed location for the dam is near many important cultural sites for the local Indigenous tribes that surround the Grand Canyon including the Diné (Navajo), Hopi, Zuni, Havasupai, and Hualapai. Cultural sites within the lower Little Colorado River gorge include the Confluence of the Colorado River and the Little Colorado River and the Little Colorado River Canyon.

This new hydroelectric project would also drill wells for massive groundwater pumping, depleting source springs for the Little Colorado River, and negatively impacting Native communities. The bottom line is, this Big Canyon project would benefit the developer, Pumped Hydro Storage LLC, and distant cities, not local Native community members.

Please sign and share the Change.org petition here:
<https://www.change.org/stopbigcanyondam>

WANTED: Grand Canyon and Colorado River Historians

In 1973 I took my first river trip through the Grand Canyon as a passenger. Started reading more about Grand Canyon. Got my first boat in 1979. Read even more, using the library, getting very interested in Colorado River history. By 1986 after reading David Lavender's *River Runners of the Grand Canyon*, took my first foray into non-published archival history collections with a day at The Huntington Library (THL) to look at some of Dock Marston's 400-plus boxes of material and binders of photographs. History and library science classes at NAU, a Master of Library and Information Science from The University of Texas at Austin. Continued researching with Dock at THL, and many other archival repositories. The "Three Rs," Reading, Researching, and Writing. I got a late start, 25 in '73, Masters at 45, still doing some as it's hard to stop.

As I slow down on river trips and writing, I'm lamenting the fact that I'm not aware of the up-and-coming boaters and budding historians. I'm not connected to the river companies much, not sure who is interested and/or doing historical research. I've met a few recently, but wondering about others, as I know you're out there. I had planned to give a call at a GTS, but, unfortunately, we haven't had one since 2019. Instead, I am inviting anyone who would like to meet to chat and share a meal or a beverage to contact me. Best way is via email: richard.quartaroli@nau.edu. The river season will be over soon and I look forward to some fun talks. And it's never too late to start. Thanks. Yay, history!

Richard Quartaroli



RIVER RUNNERS OF THE GRAND CANYON: OVER 1,000,000 SERVED

Though Lt. Joseph Christmas Ives could wax eloquently, his oft-quoted 1858 statement about the Grand Canyon and Colorado River failed miserably as a prediction: *"The region last explored is, of course, altogether valueless. It can be approached only from the south, and after entering it there is nothing to do but to leave. Ours has been the first, and will doubtless be the last, party of whites to visit this profitless locality. It seems intended by nature that the Colorado river, along the greater portion of its lonely and majestic way, shall be forever unvisited and undisturbed."*

Here are a few highlights regarding visitation at Grand Canyon National Park (GCNP). 1919, 37,745; 1946, just short of a half million; 1956, over one million; 1969, over two million; 1986, over three million; 1992, over four million; 2015, five-and-a half million; 2017, over six million, for two years, then slightly below six; and 2020 and 2021 lower Covid-effect visitation of 2.8 and 4.5 million, respectively.

A recent query about the number of Grand Canyon river runners led to speculation estimated using about 20,000 per year from the early 1970s. The figure of over one million seemed to suffice, but led to a discussion of what constituted a river runner. The first and most famous accounting was by Otis Reed "Dock" Marston, who himself is a discussion. I won't get into details about him or his tally, as that has been covered in previous *Boatman's Quarterly Review* articles by Tom Myers and C. V. Abacus, and in other publications. In 1953 and 1954, Dock produced two Christmas cards naming the first and second 100 Grand Canyon Colorado River runners, in alphabetical order by year, but not numbered as a list. Dock named only those who traveled the full length of Grand

Canyon proper, from Lees Ferry to the Grand Wash Cliffs, and only their first complete traverse, which could be done continuously or in accumulated sections. There have been several publications of Dock's historical names, starting in 1970 by Barry Goldwater, but probably only one that numbered them (Marston, 2014).

As Dock lamented that he did not get enough cooperation after 1954 to continue accurate compilation, the task later fell to Grand Canyon National Park. They no longer used Dock's criteria, tallying multiple and partial trips, but generally not considering GCNP administrative numbers (patrol, resource, research, educational, commercial crew, etc.). Myers 1997 and 1999 addressed some of those issues, which is beyond the scope of this paper. The following chart employs data from various sources. At the bottom appears a number in red, which some may perceive to be an accurate, useable total. Because of the differing data collection criteria, use this number with extreme caution. It is only a guesstimate, an approximation at best. Apples and oranges and pears, oh, my!

C. V. Abacus

Resources used in chart:

- C/N:** Robert O. Collins and Roderick Nash, *The Big Drops: Ten Legendary Rapids* (San Francisco: Sierra Club Books, 1978), 175.
- N:** Roderick Nash, *The Big Drops: Ten Legendary Rapids of the American West* (Boulder: Johnson Books, 1989), 167.
- TM 1997:** Tom Myers, "River Runners and the Numbers Game," *Boatman's Quarterly Review* 1996-1997 (Winter) (10:1):22-23, <https://www.gcr.org/bqr>.
- TM 1999:** Thomas M. Myers, Christopher C. Becker, and Lawrence Stevens, *Fateful Journey: Injury and Death on Colorado River Trips in Grand Canyon* (Flagstaff, Ariz.: Red Lake Books, 1999), 48.
- SS:** Steve Sullivan, 2021 *Backcountry and River Use Statistics* (Grand Canyon Backcountry Information Center, 2022),

43, 59, 66, 74, https://www.nps.gov/grca/planyourvisit/upload/2021_Backcountry_and_River_Use_Statistics.pdf.

Other resources:

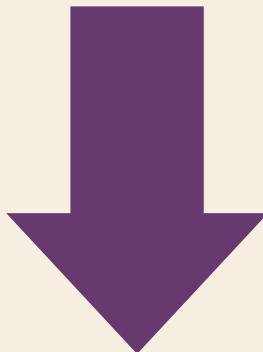
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Note:

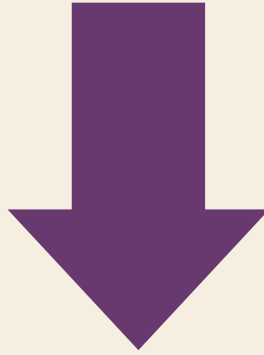
Title is from David Lavender's classic and superb book; subtitle is courtesy Early C. Corax. Comments to C. V. Abacus may be addressed to richard.quartaroli@nau.edu.

Year(s)	© RDQ	#C/N	#C/N cumul.	#TM	#TM cumul.	8/2/22	#ORM	SS Com/Non/DD	SS total	Notes
1864				4	4					
1867		17		17						
1869-1940		73	73							
1869				9 (6)	13 (6)		6 (6)			TM () fr ORM (Marston)
1871				27	40					ORM () cumul total
1872				11	51					
1889				8	59					
1890				13 (7)	72 (13)		7 (13)			
1895				4	76					
1896				2 (2)	78 (15)		2 (15)			
1897				2 (2)	80 (17)		2 (17)			
1903				3 (3)	83 (20)		3 (20)			
1904				3	86					
1908				2 (2)	88 (22)		2 (22)			
1909				4 (4)	92 (26)		3 (25)			
1912				5 (2)	97 (28)		2 (27)			
1914				4	101					
1915				5	106					
1923				13 (9)	119 (37)		8 (35)			ORM: Leigh Lint left off
1927				27 (13)	146 (50)		10 (45)			
1928				8	154					
1931				7	161					
1934				11 (7)	172 (57)		6 (51)			
1935				7	179					
1937				8 (6)	187 (63)		7 (58)			
1938				12 (8)	199 (71)		8 (66)			
1939				6 (3)	205 (74)		3 (69)			
1940				15 (7)	220 (77)		7 (76)			
1941		4	77	13 (4)	233 (81)		4 (80)			
1942		8	85	21 (8)	254 (89)		8 (88)			
1943		0		3	257					
1944		0		6	263					
1945		0		2	265					
1946		0		3	268					
1947		4	89	7 (4)	275 (93)		4 (92)			
1948		6	95	15 (6)	290 (99)		6 (98)			
1949		12	107	45 (12)	335 (111)		12 (110)			
1950		7	114	24 (7)	359 (118)		8 (118)*			ORM: Bud Anspach left off
1951		29	143	44 (29)	403 (147)		29 (147)			
1952		19	162	20 (19)	423 (166)		19 (166)			
1953		31	193	40 (31)	463 (197)		31 (197)			
1954		21	214	27 (21)	490 (218)		[10 (207)]			ORM: Leigh Lint added
1955		70	284	70	560					
1956		55	339	55	615					
1957		135	474	135	750					
1958		80	554	80	830					
1959		120	674	120	950					
1960		205	879	205	1155					
1961		255	1134	255	1410					
1962		372	1506	372	1782	1782				
1963-1964		44	1550							
1963				8	1790					
1964				38	1828					
1965		547	2097	547	2375					

continued...



...burrito



Year(s)	© RDQ	#C/N	#C/Ncumul.	#TM	#TM cumul.	8/2/22	#ORM	SS Com/Non/DD	SS total	Notes
				[Includes partials]						
1966		1067	3164	1067	3442					
1967		2099	5263	2099	5541					
1968		3609	8872	3609	9150					
1969		6019	14891	6019	15169					
1970		9935	24826	9935	25104					
1971		10385	25211	10885	35989					
1972		16432	41643	16432	52421					
1973		15219	56862	15219	67640					
1974		14253	71115	14253	81893					
1975		14305	85420	13640	95533					
1976		13912	99332	13097	108630					
1977		11830	111162	11038	119668					
1978		14356	125518	13325	132993					Nash 1978-1988
1979		14678	140196	13789	146782					
1980		15142	155338	17155	163937					
1981		17038	172376	19599	183536					
1982		16949	189325	19658	203194					
1983		15443	204768	17857	221051					
1984		15952	220720	18532	239583					
1985		18113	238833	21174	260757					
1986		21168	260001	24499	285256					
1987		18008	278009	23960	309916					
1988		22088	300097	25386/25046	334602					Myers 1997 (23)/Myers 1999 (48)
1989				25734/25268	360336					recreational & nonrecreational/
1990				26095/24926	386431					/com pass, com empl, noncom
1991				27606/25820	414037					
1992				27008/25906	441045					
1993				27758	468803					
1994				27182	495985					
1995				27649	523634	521852				
1996									[25041]	
1997									[25041]	
1998									[25041]	
1999									[25041]	
2000									[25041]	
2001									[25041]	
2002									[25041]	
2003									[25041]	
2004									[25041]	
2005									[25041]	
2006						275451			[25041]	[11 yr 275451; ave 25041]
2007								18417/6242	24659	Sullivan (66/43)
2008								18366/6234	24600	com/non-com (no admin)
2009								16446/6059	22505	also Diamond Down
2010								16434/6084	22518	
2011								17192/6014	23206	
2012								17367/5978	23345	
2013								17963/6031	23994	
2014								18507/6180	24687	
2015								18607/6266/1704	26577	Sullivan (66/43/59)
2016								18806/6620/1861	27287	com/non-com/Diamond-down (no admin)
2017								18487/6589/1725	26801	
2018								18400/6850/1964	27214	
2019						325538		18190/6445/1510	26145	13 yr 325518; ave 25041
2020								8627/4050/439	13116	2020 & 2021 Covid effect
2021						41627		20749/6926/836	28511	2 yr 41627; ave 20814

1166249

GUIDE PROFILE

Laura Chamberlin, Age 48

Where were you born & where did you grow up? Tucson, Arizona for both.

Who do you work for currently (and in the past)? Canyon Explorations, GCY, Mountain Travel-Sobek.

How long have you been guiding? Since 2009.

What kind of boat(s) do you run? Oar rig.

What are your hobbies/passions/dreams? I love being outdoors, traveling, and cooking, any opportunity to combine them all is a passion. I'm also passionate about supporting locally grown and sustainable food.

Married/family/pets? Engaged to Mike Sally. We have 2.5 dogs (Porter, Kasi and a part-time/shared dog, Sally); two cats (Petty & Stella); and five chickens.

School/area of study/degrees? Bachelor's degree in Environmental Biology from University of Colorado Boulder, Culinary Arts from Johnson & Wales University.

What made you start guiding? While working as the food manager at CanX I would go on trips as an assistant. One trip the baggage boater got sick just above Hance and the Trip Leader knew I could row (I've been private boating since 2003) and got me behind the oars. After running Hance and the gorge I was completely hooked (up to that point I was comfortable with technical, low water boating so the volume of the Colorado River had been intimidating to me).

What brought you here? Arizona is home. After moving out of state I came back in 2004 and took a job with CanX as their food manager then transitioned to guiding.

Who have been your mentors and/or role models? That is a difficult question to answer as I feel I've learned something from everyone



I've boated with. Thanks to Joel Russel for getting sick and leaving me no option but to row his boat (not happy he got sick of course). To Cam Staveley for the opportunity to get on the schedule and Pat Phillips for seeing my ability. Jimi Mac for my first opportunity to swim (Tiger Wash) while learning about geology. To the ladies of CanX who always offered guidance and support—Jessie "Swiss" Falentine, Kelly Cederberg, Gibby Siemion, Kelly Williams, Susan Hamilton, Kiki Wykstra, Amy Harmon, Mara Drazina, Jayne Lee, Deanna Sanderson, Marieke Taney, Enga Lokey, and to all the other amazing humans I've had the opportunity to work with. I hold a space in my heart for my dear and departed friend/colleague Matt Winfrey.

What do you do in the winter? I operate my own business.

Is this your primary way of earning a living or do you combine it with something else? No longer my primary way of earning a living. I've been building up my culinary business for many years and transitioned to full time around 2016.

Last year Mike and I purchased a commercial property, and I was able to build a commercial kitchen to expand my business even further.

What's the most memorable moment in your guiding career? Two trips stand out; a "disabilities" trip (which should be called the superhuman trip) and sharing the canyon with folks that never complained and allowed for a completely different perspective. I also got to student drive a motorboat—that was exciting! The other, I was a guide on a Rolwing trip and the entire group was

rolfers obtaining their continuing education. The guides was invited to participate in the sessions, hands-on body work at the bottom of Grand Canyon was quite profound.

What's the craziest question you've ever been asked about the canyon/river? Where do I plug in my hair dryer??

What do you think your future holds? Way more private boating and cooking.

What keeps you here? The wonderful community and beautiful Northern Arizona.

AN APTLY NAMED CAMP

The spring of 2022 saw some very strong winds in the Grand Canyon and anyone who was down there was visited by our old friend, "Uncle Gusty." But he showed up in spades for a few long weeks this year. I was on a Colorado River and Trails Expedition (CRATE) two-boat motor trip with Dewey Moffat

morning of May 10. Our first night, we camped on the left at River Mile (RM) 20.0, just above North Canyon. As the steady bug flows were underway, I chose to set up my bed right along the river's edge at a place downstream that was protected from the south by large rocks that blocked the wind. I had a rather comfortable

guests. It worked, but only so far.

The kitchen was set up under the overhanging tamarisk trees near the beach to provide protection from the south (upstream) wind. Or so we thought. Even with this protection, a CRATE cook table made of heavy-gauge diamond plate, measuring four by five feet and weighing nearly 35



Chair blown into cactus patch.

as trip leader that put-in at Lees Ferry on May 7. We left the Ferry about noon at what first seemed like a normal spring day, sunny and breezy. The forecast called for strong winds the next few days, but that wasn't anything out of the ordinary for early May. Little did we know.

The blast started on the afternoon of May 7 and didn't let up until the

night but those who camped up on the high-water sand bank did not. On our second day (May 8) the wind howled through Marble Canyon all day and did not let up from what seemed like hurricane force for 24 hours. We camped our second night at upper Saddle Camp (RM 47.4), hoping that the large grove of mesquite trees would protect the

pounds, was blown completely over into the sand by a gust that seemed north of 55 mph. The grill on the table went flying and the garlic bread was lost.

But even more impressive (if that's possible) is that at three a.m. that same night, a heavy folding chair was picked up into the sky by a gust, flying freely for nearly 45

feet like a parachute into a cactus patch. Anyone trying to sleep on that beach that night knew the wind was excessive, but no one had any idea until someone spotted the chair lying calmly in the cactus. We only found it because someone walked by it going away from the main camp. But all this talk about wind is just a prelude to my main story.

The next day we ran down to the Little Colorado for a swim and again tried to find a camp where we could cower away, somehow, from the incessant blast. Once camp was set up, many in our group decided to bathe in the river to wash the wind-blasted sand out of their scalp. I was milling around near the kitchen around 5:20 p.m., when a phrase that I've never heard before, in all my trips since 1976, was uttered to me. One of my passengers, Joel, was walking toward me with a determined look on his face.

"Wayne, I just got bit by a rattlesnake!" The only thing I could think to say was, "What?" He said it again, "I got bit by a rattlesnake." Confused and stunned, I replied, "Are you sure?" Thinking back now, that was a pretty stupid thing to say; surely, Joel would know whether he was bit by a rattlesnake or not. But I was sleep deprived and had never had a snake bite on a trip happen before. There was no blood curdling scream preceding it. He just walked into the kitchen and relayed what happened. Slowly, his words sank in.

We sat him down in one of the previously flying chairs and sure enough, two small puncture wounds were located above his right ankle. I took a moment to compose my thoughts, then went down to the boats and told Dewey what had happened. He reacted quickly and began to pull out the large First Aid and the satellite phone. We propped Joel's leg up on another chair and observed the bite. There was no bruising, no swelling, and no pain except at the two fang punctures. His

pulse was surprisingly normal. The first fifteen minutes were critical to determine the severity of the bite.

Fortunately, a friend of mine on the trip was an M.D. and his wife an R.N.. Another doctor was also on the trip. Of course, they never had to deal with something like a snake bite before, but their professionalism and sense of protocol was reassuring. The R.N. got busy taking vitals on Joel while Dewey was in communication with the CRATE office and the NPS on the South Rim. His blood pressure



Snake bite.

was normal. As time passed, the crew, the doctors, and I sensed that this behaved and looked like a "dry" bite, one in which there is no injection of venom. About one-third of all reported rattlesnake bites in Arizona are "dry." A discussion began about the advisability of flying an evacuation in such howling wind. Nevertheless, the wheels of an evacuation were already churning outside of the canyon.

The wind continued to scream, now on the third day of our trip. The Park Service nixed flying in the fifty-mph wind that they were recording at the South Rim helipad. They had made no flights in the last few days because of it. They also would not fly in the now approaching darkness.

They mentioned that Arizona DPS was a possibility but were presently in Kingman. My friend the doctor advocated for a "dry" bite and said that calling in the chopper would present too much of a risk for others, given the fading light and the high winds. He strongly advised not to fly. I should mention that none of these discussions happened in the presence of the patient or other passengers. But amongst the crew and the medical people, it was a bit fitful on how to proceed.

At 7:30 p.m., we got word that the DPS chopper was making its way into the canyon. Joel's leg continued to look good and he remained relatively calm. His ankle never got swollen, never bruised, never became painful. Yet the concern was that sometimes there is a delay in reaction to venom. Meanwhile, I and the other boatmen prepared a landing spot using markers and a makeshift windsock.

The DPS chopper landed on the beach around 8:10 p.m. By this time, it was dark. When they shut down the rotor and emerged from the helicopter, we all thought we were going to have nighttime guests due to the wind. They remained on the beach for 45 minutes, using that time to assess the patient. Soon, Joel and his wife, Peggy, were on their way to the Flagstaff Medical Center, never to return to the trip.

I think the lesson to be learned is that even if there is a "dry" rattlesnake bite, it is probably prudent to evacuate. Arizona DPS will do that in just about any conditions. It was a learning experience for sure.

Oh, by the way, the rattlesnake bite happened at a camp at about RM 74.6. At a place we all know as Rattlesnake. An aptly named camp.

Wayne Ranney

Little Bugs, Big Data, and Colorado River Adaptive Management: Preliminary Findings from the Ongoing Bug Flow Experiment at Glen Canyon Dam

Too thick to drink and too thin to plow...

The undammed Colorado River in Grand Canyon was characterized by spring snow-melt floods that sometimes exceeded 100,000 cubic feet per second (cfs). These were followed by occasional flash floods during summer monsoons, then by low flows from fall through early spring (Figure 1; Topping and others, 2003). This seasonally variable flow regime carried huge loads of sediment and

was an important driver of natural processes that sustained the Colorado River ecosystem. For instance, high turbidity associated with this flow regime likely restricted algal growth to the river's edge or shallow cobble habitats, similar to other desert rivers. Aquatic invertebrate assemblages were probably diverse and adapted to these variable conditions (Vinson, 2001; Haden and others, 2003). Native fishes were likely opportunistic feeders, consuming ants, seeds, and other terrestrial resources during

times of flooding and switching to aquatic-derived resources like algae and aquatic invertebrates at other times (Minckley, 1991; Behn and Baxter, 2019; Healy and others, 2022).

Regulation of the Colorado River by Glen Canyon Dam in 1963 eliminated the annual snowmelt floods, sharply increased base flows by more than 50 percent, and dramatically increased within-day fluctuations in discharge for hydropower production (the 'daily tides' of the river, Figure 1 and 2; Topping and others, 2003). Glen Canyon Dam also changed other aspects of the river, particularly temperature, sediment, and nutrient regimes. These changes to the physical template of the river led to fundamental changes in the natural processes that sustain the Colorado River ecosystem. For example, algae are common throughout the river during periods of clear water and represent the foundation of aquatic food webs (Stevens and others, 1997; Cross and others 2013). Many types of aquatic insects have disappeared or become rare in the mainstem, particularly sensitive groups such as mayflies, stoneflies, and caddisflies (Kennedy and others, 2016). Because aquatic insect assemblages in the Colorado River in Grand Canyon are neither diverse nor productive, food webs are simplified and inherently unstable, limiting fish populations that are often hungry (Cross and others 2013; Korman and others 2021).

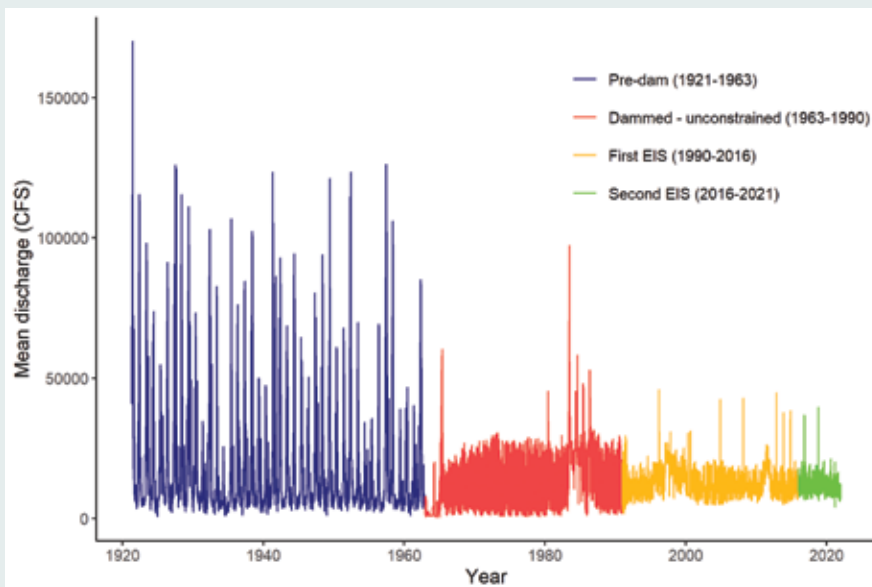


Figure 1. Discharge of the Colorado River at Lees Ferry over the period 1921–2021. Colors are used to illustrate different periods in the discharge record including the pre-dam period (blue), the period of unconstrained dam operations (red), restricted dam operations associated with the first Glen Canyon Dam Environmental Impact Statement (EIS; yellow), and the second Glen Canyon Dam EIS, also known as LTEMP, that includes the Bug Flow experiment (green). To make and view graphs of discharge at Lees Ferry, navigate here (https://www.gcmrc.gov/discharge_qw_sediment/station/GCDAMP/09380000).

The Bug Flows Experiment

The 2016 Long Term Experimental and Management Plan-EIS (LTEMP; Bureau of Reclamation and National Park Service, 2016) describes how flow experiments and other management actions will be implemented using an adaptive management decision making framework to collectively achieve goals for eleven different resources: 1) Archaeological and Cultural Resources, 2) Natural Processes, 3) Humpback Chub, 4) Hydropower and Energy, 5) Other Native Fish, 6) Recreational Experience, 7) Sediment, 8) Tribal Resources, 9) Rainbow Trout Fishery, 10) Nonnative Invasive Species, and 11) Riparian Vegetation.

Bug Flows, as one of the experiments proposed in the LTEMP, was designed to address many of these different resource goals. Research by our group demonstrated that the artificial tides associated with hydropower production were a significant constraint on the health of aquatic insect assemblages. Daily and sudden drops in water levels leave aquatic insect eggs, which are laid along the river's shoreline, high and dry where they desiccate and die (Kennedy and others 2016; Miller and others 2020; Figure 3). To enhance the natural processes that support diverse aquatic insect assemblages, the LTEMP includes an experimental Macroinvertebrate Production Flows to mitigate this problem. The objectives of these "Bug Flows" are to increase food base productivity and aquatic insect diversity by increasing survival of insect eggs laid along river shorelines. If Bug Flows are successful, this would likely benefit numerous LTEMP goals because aquatic insects are key prey items for fish, birds, bats, lizards, spiders, and other wildlife.

Another design consideration for Bug Flows was minimizing impacts to energy production. To minimize impacts to hydropower, Bug Flows were designed to occur only during the months of greatest adult insect egg laying activity (May–August)

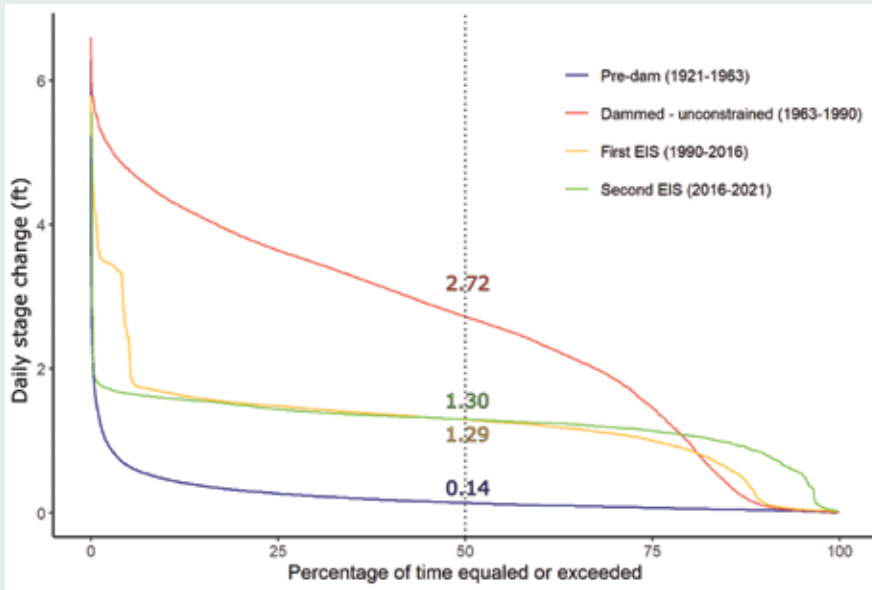


Figure 2. Graph showing the percentage of time (x-axis) that various daily stage change values occurred during different periods of the Lees Ferry discharge record (EIS is Environmental Impact Statement). The dashed vertical line represents the 50th percentile, which is equivalent to the median or middle value, and the corresponding median value for each period is listed.

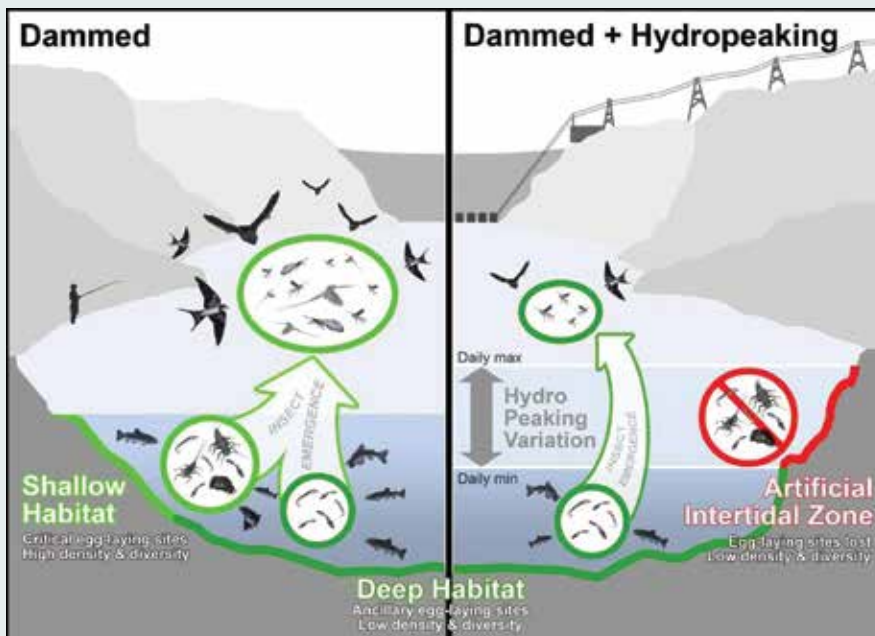


Figure 3. Many aquatic insects cement their eggs to submerged rocks and vegetation along river-edge habitats, making them especially sensitive to hydropower production practices. The Bug Flow experiment seeks to mitigate these negative impacts by stabilizing these river-edge habitats every weekend during times of peak insect egg-laying activity. From Kennedy and others (2016).

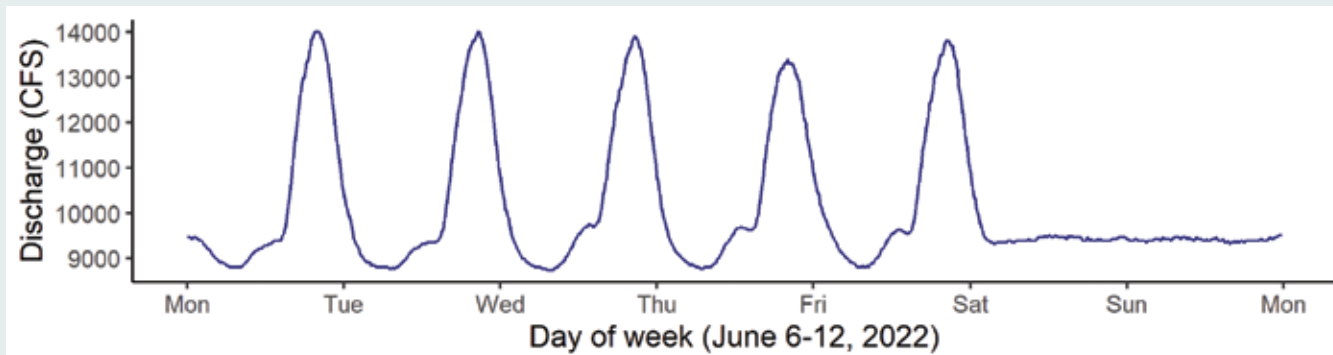


Figure 4. An actual Bug Flows hydrograph at Lees Ferry for a week in June 2022. Discharge is in units of cubic feet per second (cfs). Note the steady, low flows on Saturday and Sunday with regular fluctuating flows during weekdays. Weekend low flows are somewhat higher than weekday lows to account for the changing shape of daily flow peaks and troughs as they travel downstream.

and only during weekends when hydropower demand is relatively low (Figure 4). Experimental Bug Flows were tested during weekends at Glen Canyon Dam from May–August in 2018–2020 (a total of 34–36 steady days per year). The experiment did not occur in 2021 but was resumed in 2022. The purpose of this article is to share some of our preliminary findings.

Follow the sunshine: Monitoring gross primary production in the Colorado River

Algae are the foundation of the river’s food web in post-dam Grand Canyon. Bug Flows were predicted to increase rates of algae production in the Colorado River, which could in turn benefit aquatic insects that feed on algae. To monitor this, we used a network of dissolved oxygen sensors deployed throughout Marble and Grand Canyon to make daily estimates of gross primary production (GPP). GPP is one way of measuring the condition of photosynthetic algae and aquatic plants in a river and is reported as grams of oxygen (O₂) produced per square meter of river bottom per day. During Bug Flows, we compared daily rates of GPP among steady and hydropeaking days during May–June in 2018 and 2019 at eleven different river reaches (Figure 5; Deemer and others 2022).

We found that rates of GPP were 41 percent higher during Bug Flow

weekends relative to fluctuating weekday flows. At eight of the eleven reaches, GPP increased during weekend steady flows. Averaged across all reaches, GPP was 3.1 ± 0.1 g O₂ m⁻² d⁻¹ on weekends versus 2.2 ± 0.1 g O₂ m⁻² d⁻¹ during weekday flows. Why such a big difference? Sunshine. Steady Bug Flow weekends lowered river depth, average discharge, and turbidity, all of which contributed to more sunlight penetrating through the river and reaching the river bottom, which in turn increased rates of GPP.

Many hands make light (traps) work: Aquatic insect response to Bug Flows

Light trapping is our primary method for evaluating aquatic insect response to the Bug Flows experiment. This effort has been ongoing since 2012 and relies on river guides, Grand Canyon Youth, and other community scientists to set out traps nightly throughout Marble and Grand Canyons. Hundreds of people, including many BQR readers, have helped collect these data and we thank you. This collaborative project yields approximately 750 samples of aquatic insects yearly between the months of April–September. Light trap data from the early years of this project in 2012–2014 were critical to identifying that hydropower fluctuations were a constraint on aquatic insect production and diversity (Kennedy et al. 2016).

Aquatic insect responses to Bug Flows were a mixed bag. On the one hand, catch rates of sensitive caddisflies in light traps increased dramatically during the three years of Bug Flows compared to the pre-Bug Flow baseline from 2012–2017 (approximately 20 caddisflies per hour; Figure 6). In the first year of Bug Flows in 2018, catch rates of caddisflies increased by more than 400 percent (to 108 per hour), but this increase was not sustained the following year, and caddisfly catch rates fell to 36 per hour, which is similar to the pre-Bug Flow baseline value. We now understand that the lower caddisfly abundance in 2019 may have been caused by high levels of turbidity in fall of 2018, which triggered a High Flow Experiment (HFE) in November 2018, followed by sustained tributary flooding in spring 2019 immediately prior to caddisfly emergence. High levels of suspended sediment lower GPP and also interferes with insect feeding, which can in turn slow growth and lower the survival of caddisflies. In 2020, following a less dynamic year of inflows, we again saw major increases in caddisflies relative to non-Bug Flow years. This positive trend in caddisflies abundance continued into 2021, when there were no Bug Flows, but these numbers may have been elevated owing to the three preceding years of favorable egg-laying conditions.

Further muddling our expectations

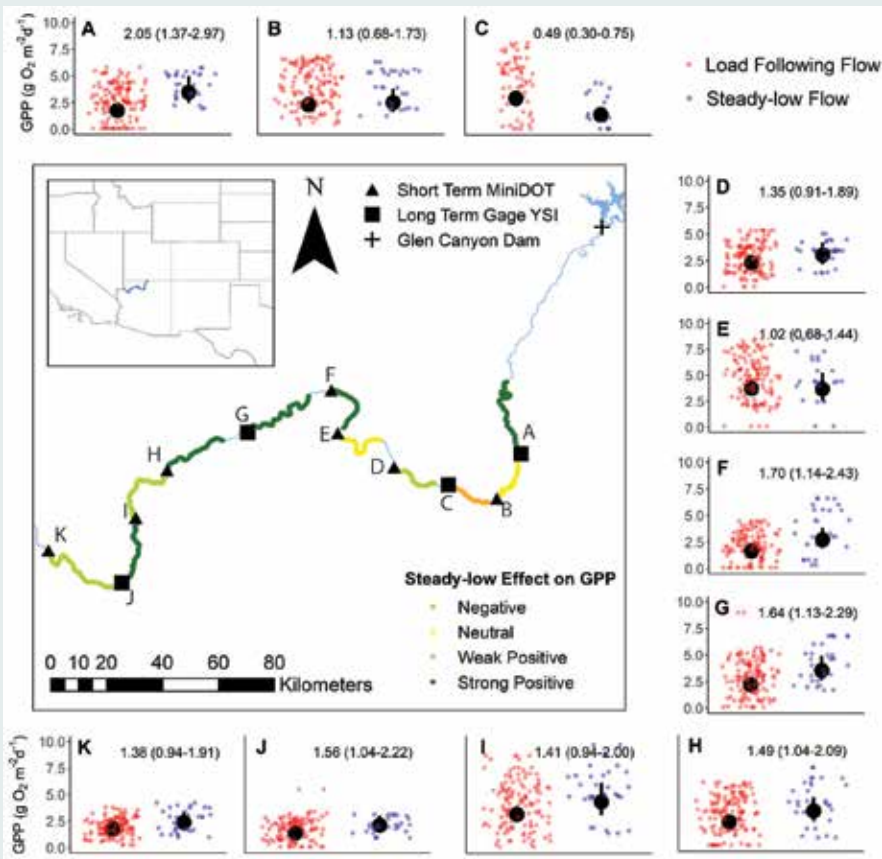


Figure 5. We estimated gross primary production (GPP) for eleven different river reaches during Bug Flows in 2018–2019. GPP is one way of measuring the condition of photosynthetic algae and aquatic plants in a river and is reported here as grams of oxygen produced per square meter of river bottom per day. Eight out of eleven reaches had elevated GPP on the weekend steady-low flow, relative to the weekday hydropeaking flow (green), two reaches had no difference (yellow), and one reach saw a relative decrease in GPP during weekends (orange). Daily GPP estimates and modeled flow effects are plotted in separate panels for reaches A–K clockwise from the upper left to lower left. Red points represent daily GPP estimates on weekdays when flows are fluctuating and blue points are daily GPP estimates during steady bug flow weekends. The black points show estimated median values with 95 percent credible intervals. From Deemer and others (2022).

of increased insect emergence was the unexpectedly flat trend in midges. Midges are the most abundant insect group captured in light traps, and in our modeling efforts prior to the experiment we predicted a long-term increase of 27 percent in midge abundance. Contrary to these predictions, adult midges showed no change in abundance during the three years of the Bug Flows experiment relative to the six years preceding the experiment (Figure 6). However, the abundance of midges declined by 50 percent in 2021 in association with the cessation of

Bug Flows, suggesting Bug Flows may have been supporting midge populations despite the flat trend during the experiment. Despite all of these caveats, the positive relation between caddisfly abundance and Bug Flow experiments suggests these experimental flows are working to improve insect diversity.

Closing thoughts

Glen Canyon Dam’s operations are guided by a process called adaptive ecosystem management, and 25 stakeholders participate in this process including the Grand Canyon

River Guides. Adaptive management is a structured process of decision making that aims to improve resources and reduce uncertainty using science. By emphasizing learning and reducing uncertainty about ecosystem dynamics, adaptive management can lead to better long-run outcomes for resources compared to more traditional management approaches. Learning how the river ecosystem responds to various management practices can occur through passive monitoring of existing management practices, but learning is accelerated through direct experimentation and by testing novel management practices, such as Bug Flows.

The increase in GPP arising from Bug Flows translates into an additional 100 metric tons of high-quality algae-carbon available to sustain river food webs annually (Deemer and others 2022). Although the Colorado River receives large amounts of terrestrial carbon inputs from flooding tributaries in the form of fallen leaves and woody debris, aquatic insects and fish derive most of their energy from algae (Stevens and others 1998; Cross and others, 2013). The increase in GPP during the steady Bug Flow weekends was energetically substantial and likely supported increased insect and fish production given that production at these levels is food limited. For example, the additional GPP during Bug Flows is estimated to increase growth rates of Flannelmouth Sucker by 1.5 mm per month (Hansen 2021).

The primary objective of the Bug Flows experiment was increasing the diversity of aquatic insect assemblages by improving egg laying conditions. Consistent with this objective, we documented a 400 percent increase in the abundance of sensitive caddisflies during two of three years of the experiment. This increase in caddisfly abundance was evident in the first year of the experiment, however, and caddisflies require a year to transition from egg to adult. Thus, improved egg laying

alone cannot explain the caddisfly increase in 2018. By decreasing sediment transport and increasing GPP, Bug Flows may have improved growing, pupation, and emergence conditions for caddisflies in spring 2018, thereby increasing adult activity as measured in light traps in that year.

So, were the Bug Flows successful? Yes, in the context of an adaptive management experiment, Bug Flows was a success because they improved understanding of ecosystem response to steady flows. Importantly, the Bug Flows experiment also appeared to benefit some of the natural processes in the river, which themselves are an important resource goal outlined in the LTEMP. These improvements to the aquatic food base have already been shown to increase growth rates for Flannelmouth Suckers (Hansen 2021), but additional years of experimentation are needed to quantify links to humpback chub and other wildlife populations. Finally, the Bug Flows experiment succeeded in balancing the interests of multiple stakeholders by reducing the cost of an ecological experiment on hydropower resources compared to the steady flow experiments of the past (Bureau of Reclamation and National Park Service, 2016).

In closing, we want to acknowledge and thank all the river guides and other community scientists that are absolutely critical to monitoring ecosystem response to the ongoing Bug Flow experiment. We could not have done it without you all. We also want to acknowledge the Bureau of Reclamation's Glen Canyon Dam Adaptive Management Program for providing funding to support these monitoring efforts. We are also grateful for the feedback we received from an independent science advisor panel that was convened in fall 2021 to review the Bug Flow experiment. Finally, we thank the Planning and Implementation Team, and Bureau of Reclamation and Western Area Power Administration staff in

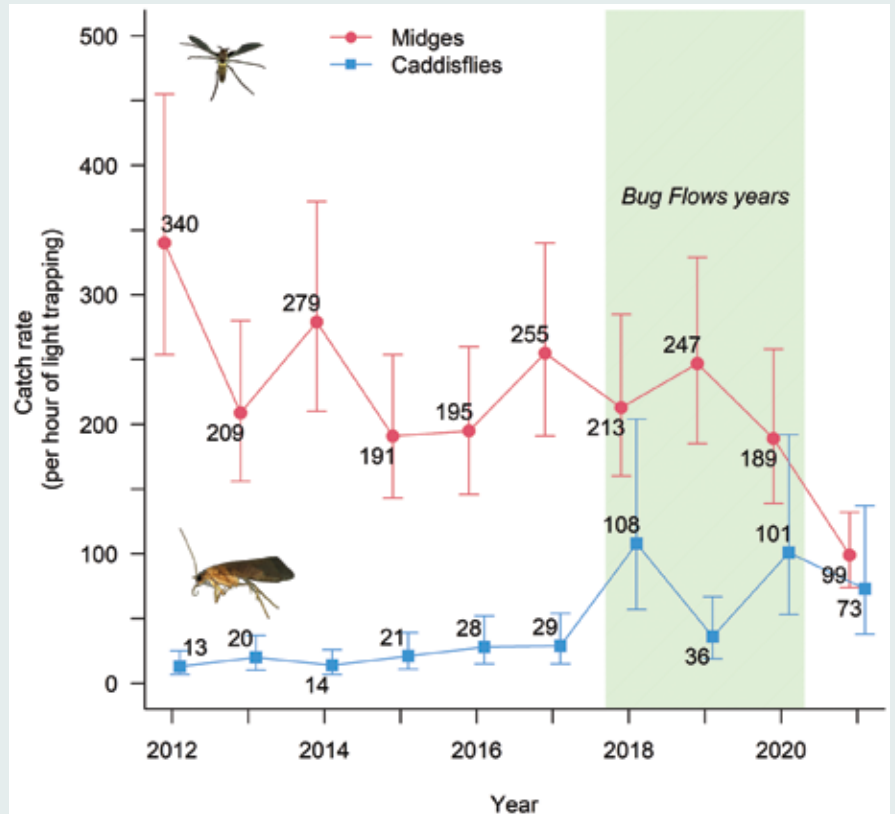


Figure 6. Average caddisfly (blue line) and midge abundance (red line) collected in community science light traps from 2012 through 2021. Annual average values appear above each point and are estimated from a mixed-effects model that accounts for variation in sampling effort across reaches and across years. Error bars represent one standard error. The abundance of caddisflies increased by approximately 400 percent during two of three years of Bug Flows experimentation (2018–2020) compared to the pre-Bug Flow baseline from 2012–2017. The abundance of midges was also predicted to increase with Bug Flows, but no such increase was detected during 2018–2020. In 2021 when Bug Flows were paused, midge abundance declined by 50 percent but caddisfly abundance remained unchanged from the year prior.

particular, for the opportunity to collaboratively design the Bug Flow hydrograph each year.

Interested in joining our monitoring team? We are always recruiting! Contact us at citizenscience@usgs.gov.

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Boat entering Waltenberg. Photo: Allen Gilberg

TONY SPARKS

My mother went back to her niece's wedding and the bride's father, Wade Miles (his dad used to be governor of New Mexico), he came up to my mom and said, "Why don't you and Sparky"—that's what they called my dad—"go over and take the concession at Lees Ferry?" My mom said, "Where's Lees Ferry?" My dad said, "Well, let's go see it. Just for fun, something to do." So they came out there, and the funny thing—my dad had crossed that Navajo Bridge the year after it opened. He and his brother had a brand-new '28 Pontiac, and they were out by themselves, kids out of high school, and crossed the Navajo Bridge [*north to south*]*—it had just opened. They went down, they stayed at Cameron. He said they stole gas everywhere they could, because there's no gas stations out there.*

In 1954 my folks took us out on a trip, and we had Thanksgiving up at Jacobs Lake. I remember we pulled in there—and those were the old days, with the old pickup trucks with fenders. Every one of those trucks was loaded with deer. They had deer up over the fenders, they had deer up on the roof racks, tied on. Those were the years when they were trying to eliminate them out of the North Rim. And they *really* made a mistake and killed too many. I don't know if you ever read *that* story.

Steiger: I've heard a couple of versions of it.

Sparks: They wanted to get rid of the deer, they had too many, but they didn't have any idea they were going to kill *that* many.

But anyway, we came back down to Marble Canyon. We didn't stay there, but we stopped. It was evening, I remember. We stopped and got out. I remember getting the biggest boulder I could carry out to the middle of the bridge, and threw it off in the river! And if somebody had told me I was going to live here at Lees Ferry and had the concession, I'd have said, "You're crazier than a pet coon!" We lived in Long Beach all those years. We owned an auto supply house, called Sparks Brothers Auto Supply. And that's what I grew up in.

Steiger: Your parents were in Long Beach? Why would they want to come out to the middle of nowhere to do that?

Sparks: That's what my mom said! (chuckles) My dad told *me* about it, and then *I* came out and looked at it in 1967. I'd been doing that auto supply house ever since I

was twelve years old. That's all I had ever done. I got out of high school, I was lucky, but I never went to college to get a formal education—I was doing the auto supply house. I *knew* what I was going to do. All my other buddies were going to college—that was during Vietnam—or getting drafted, or most of them joined the National Guard back in those days, so they wouldn't have to go anywhere. But I never got drafted. President Kennedy said, "If you're married, you don't go." I was married. Then he said, "Cancel that. If you have any dependents, you don't go." We had our first boy. And I fell right in, never got drafted, 1-A all the time.

So anyway, we did that, and came out and looked at it. There was nothing going on in Page, naturally. The dam had just been completed, and the town had gone from 6,000–7,000 people, down to 900 living in Page. All the Bureau homes were for sale in Page. You had to get in a lottery to get a Bureau home. My number came up 105. I said, "Oh man, I've got to have a house to live in, if we're going to buy the concession." But I put everybody's name in, that I knew, in the lottery system, and a guy working for me got drawn number 1. (chuckles) So we ended up buying the very first house sold in town, and we ended up buying three more. They sold for \$10,100 to \$12,100. The carports were \$10,100; the \$12,100 were the ones with the garages. Three bedroom, two bath...

Steiger: Ten thousand one hundred dollars?

Sparks: Yep.

Steiger: Twelve thousand one hundred dollars with a garage?

Sparks: My payments on the house were \$68—principal, interest, and taxes—a month.

Steiger: So you got the three houses. Still, why would you want to take that concession on?

Sparks: Well, like I say, I'd been doing that Long Beach auto supply house all my life. I opened that store at eight in the morning—I got there at 7:30—I closed at 6:00. I got done sweeping, counting money, all that, at 6:30, and by the time I get home—I didn't live far from the store in Long Beach there—but it was six days a week. I never had any time. By Sunday I was so tired I didn't want to do anything. You know, we'd go to church maybe on Sunday morning, but then I was tired, I didn't want to do anything. So I saw the opportunity to get away from that six-day-a-week,

and get myself a decent job...that was going to take seven days a week! And maybe *eighteen* hours a day! (laughs) And that's what we did!

Steiger: Maybe a little more entertaining?

Sparks: But it was a different life. It was just a whole different way of living than what I'd been doing. It had been so routine, so routine. I went back and forth every day.

Steiger: Lees Ferry to Page?

Sparks: Every day. I bought a brand-new '68 Ford Falcon Ranchero, and nine months later I had 40,000 miles on it, and I hadn't been anywhere except to work and back!

Steiger: That was back when gas cost about, what, 13¢ a gallon?

Sparks: It was a little more than that. We had a gas station at Lees Ferry. I gassed up there.

Steiger: Oh yeah. You were paying wholesale for your gas.

Sparks: That's the only thing we got when we bought the concession, outside of the liquor license.

Steiger: I remember talking to Georgie White at her birthday party. She said, "Well, when they paved that road to Lees Ferry—right there—I knew that was the beginning of the end! (laughter) She said her brother told her when they built the dam, "Your day is done, Georgie! It's gonna be a different deal now." Was that road paved down there when you guys got there?

Sparks: Yes.

Steiger: That was a big deal right there.

Sparks: They had just paved it, actually. The first time I was there was in '67, and they had had that big flood that washed all the hill and down, wiped out the little trailer that was at Lees Ferry, that was the store. I've got a picture on there of the thing. Yeah. It was a *major* flood that came in and put over a foot to eighteen inches of mud clear across the parking lot at Lees Ferry. After that, Park Service came and built a dam.

Steiger: Up that drainage?

Sparks: The drainage around there, to stop that from happening ever again.

Steiger: Okay. Yeah. I remember growing up in Prescott, 1967 was our biggest winter. But the big flood must have been in the monsoon season, huh?

Sparks: That was the year Flagstaff got seven foot of snow.

Steiger: Yeah. I was impressed when we got *three* foot of snow. I remember they were air dropping hay to the cows on the reservation, because everybody was going to starve up there.

Sparks: A Navajo man came in the store, he was crippled, in a wheelchair. He said, "I need some help with my chains. I couldn't get out of my car to get them off." He had rode on his chains for a long ways and chewed them up. He said, "Is it possible you could help me rebuild them?" I said, "Sure." So we did that, we had cross-links and rebuilt them. I got talking to him and got to know him a little bit. *Nice* guy. I can't remember his name now. I was

thinking about him here a while back. But he was *such* a nice guy. He said, "I've got to get back out to Window Rock. This is going to be the biggest opportunity we've had to get help on the rez. We've got to let people know how bad it is out there. We live through this all the time." (laughs) "But," he said, "this is our opportunity to really make it pay." And he did!

We ended up buying the concession December 31, 1967 is officially when we bought it. We moved out to Page at the beginning of '68.

Steiger: Well there was snow on the ground *then*!

Sparks: Oh, there was. We used to get snow all the time at Page, before the lake was full. Once the lake filled up, it kind of works like a heat sink. You know, the water is only 48 degrees, as cold as it ever gets. So the lake fills up and gives you this big 48-degree area that makes all the storms go around Page. We used to get a lot of snow when we first moved there. I say a lot—it was snow all the time. But now it snows, it's gone by noon.

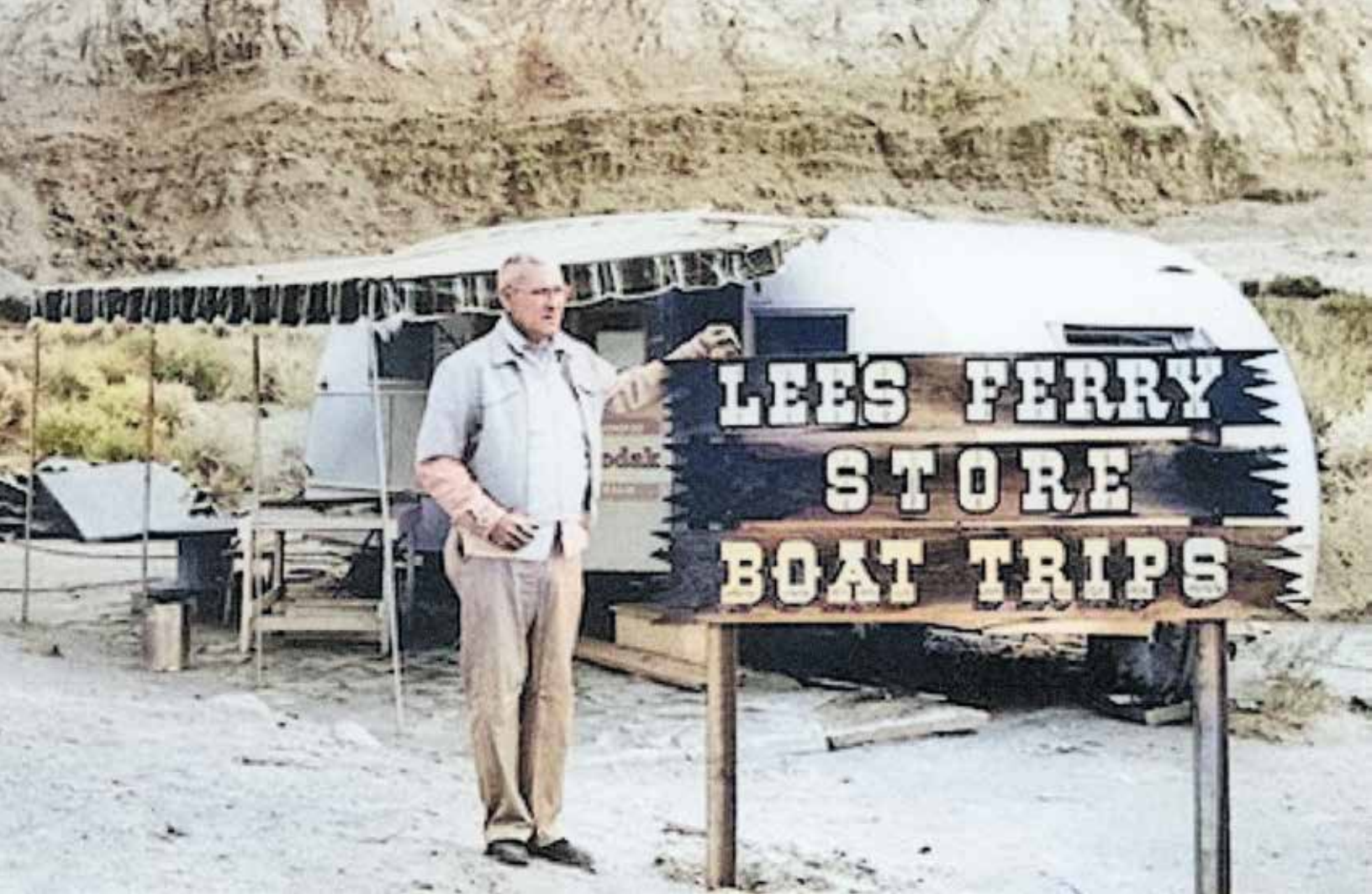
* * *

Tony Sparks, who had the concession at Lees Ferry for quite some time, founded the Fort Lee Company, which ran super-deluxe three-day motor trips to the Little Colorado and then later six-day trips from there down and eight-day trips all the way through. He had a stellar and legendary crew, which included the likes of Bob Quist, Pat Conley, Sam West, Gary Mercado, Bob and Tim Whitney, Dave and Paul Hinshaw, Dick Clark, Myron Cook, Dave Kloepper, and many more. Fort Lee Company had the first one-day concession from the dam down. They and Sanderson Bros. sold to Del Webb, now Wilderness River Adventures. This interview was recorded March 8, 2020 at Tony's house in Paradise Valley.

—Lew Steiger

* * *

Sparks: I was born in Ely, Nevada. My mom and dad went there back in the 1930's. My mom was born on a ranch right outside Vegas, that ran from ten miles inside Nevada, all the way to Baker. It was her dad's ranch. My dad drove a truck for Union Oil, and he ran over a horse that my aunt had turned loose because it bucked her off the day before. So he went to the ranch to tell them he had hit it, and met my mom out there. When the Depression came along, a friend of his told him, "Well, why don't you go up to Ely, Nevada? I can get you a Wasatch distributorship—gas." So my dad went up there, and he ended up owning a Cadillac-Pontiac-International Harvester-Studebaker trucks dealership. In those days you had everything that you could sell, for a business. But he couldn't stay there, he kept passing out. The elevation was too high. And so after about a year, after I was born—they were there for about three years—they moved back to Long Beach, California, where *he* was from, and his family. So I grew



up in Long Beach. My wife Jenny was from Oklahoma, and she moved to Long Beach during the war. Her dad was in the Navy, and after the war stayed in Long Beach. We both grew up in Long Beach. Jenny has a sister that still lives there. She went to Poly, I went to Wilson High School. Jenny said she'd never marry somebody that went to Wilson, and she wouldn't marry somebody that didn't dance. Well, she got both of them! And we have three children, that were all born in Long Beach. Our oldest son lives up in Palm Springs now—he and his partner. His partner retired from Delta Airlines—Jeff is my oldest son's name. We have a daughter in Jacksonville, Florida—Chris—who is married. She's just done *amazingly* well. She had an aneurism break when she was eleven years old. Then she had two more breaks when she was 25.

Steiger: Oh man!

Sparks: She doesn't have any children, but her husband, who is the same age as my wife, absolutely, the whole world rises and sets on Chris. It's amazing. They did a lobotomy on her, actually, when she was eleven years old, because in those days, repairing aneurisms wasn't something people did.

The doctor had only done three, when they did Chris! That was back in 1975. Anyway, she's survived, done very, very well. If you met her today, you would hardly know that she has it. She's 57 years old. My youngest son is

Gary. He's 55. We had a boy and a girl and said that's all we're going to have—and along comes Gary! I think, “Boy, what would my life be without Gary?” He's my partner in business. He has two children. His daughter has given us three *great*-grandchildren. But that's been such a joy to have them, that we never would have had if it hadn't been for Gary. So things work out great!!

* * *

Steiger: Okay, so December '67, then '68, that's when you snapped up those houses?

Sparks: Bought four houses. I never made any real money on them, because I always needed money—I sold them off one by one. We thought we were going to put our help in them. My brother-in-law came out to work with me, and he didn't stay very long, he left. Then my folks lived down at Lees Ferry for a while. Then my mom left, my dad stayed. Then my dad left. Then I sold it to Romney International Hotels. I sold three-quarters of the business to *them*. I had just finished building the warehouse down there in '72. They forgot to insure the warehouse. And so when it burned down in '74, we lost everything, and they got disgusted and wanted out, and so I bought them out for 10¢ on the dollar. (chuckles)... There's a picture.

Steiger: Oh yeah, Lees Ferry Store, Boat Trips. And that was it, that's the store?

Sparks: That's it, that whole trailer.

Steiger: A *little* trailer, not even a big...When I showed up, there was a much bigger trailer than that.

Sparks: That little trailer caved in from the snow in '67.

That was all there was. Well, there was that and the service station.

Steiger: I went down the river with my dad [*Sam*] and Fred [*Burke, who founded Arizona River Runners*] in '71, and then I showed up to work there in '72. I remember a *big* mobile home when I first got there.

Sparks: Well that was what I put in.

Steiger: Yeah. You kind of walked up some steps, there was a little porch there, and you could get hamburgers in there, and there was all kinds of alcohol selling. And then there were four or five other mobile homes right there...

Sparks: We had those built. They were two units, had two bedrooms, two bathrooms, two kitchens, and a door between the two of them. They were 12 x 60.

Steiger: Did they take them apart, or did they just trailer them up to you?

Sparks: No, they just trailered them, just like the mobile homes do now. We brought them in, put them in place. I was down there with a ninety-pound jackhammer, jackhammering things. I finally called the Park Service and said, "Well, I pretty much got them all set with the sewer and the electric, to run. Do you want to come down and inspect them?" The guy at the Park Service up at Page, on the phone said, "Hell, I don't know what the regulations are. Bury it!" (laughter)

Steiger: Those were the days!

Sparks: Oh yeah. You know, you've got to have certain separation between the electric and the sewer and all that, but they didn't care. "It's only temporary, Tony, don't worry about it. It's temporary."

Steiger: So as a business, how were you making most of your money in those days?

Sparks: I wasn't! People would come in, in the early days—and especially early in the season—Ted [*Hatch*] would bring in a busload of people—people lined up out the door, waiting to buy booze—they'd look at me and say, "You've got a gold mine here!" They didn't realize that gold mine only lasted for a half an hour. There were another 22-and-a-half hours where maybe not another soul came in, in the early days—because they weren't running anybody downriver in '68 and '69. You know, there were just very few people going. But we had to keep the thing open. Park Service made me stay open 363 days a year. I had to be there, and to do that I had to keep those trailers heated so the water lines wouldn't freeze. I had to keep them in case somebody came in and wanted to rent one for a motel. We had a few people come in, you know, off and on. The fishing wasn't what it is today. In the early days, you'd catch a trout down there, it looked like a barracuda. It had a big head and a little skinny body

behind it. Then they came in and put some shrimp and some worms and other stuff in there for the fish. The fish kept getting bigger and bigger and bigger. Pretty soon we had some *monster* trout brought out. I weighed trout that were over 25 pounds—rainbows.

Now it's strictly catch-and-release on certain size. I don't know exactly what the rule is, but you can't keep fish up to a certain size.

* * *

Steiger: Weren't there some kind of docks out there one time?

Sparks: There were. The Bureau had some docks, and there was one old dock right by the old ramp, that we used to use, where the boat-launching ramp was. It was aircraft landing mats down there, and a great big ol' cottonwood tree that was there—it's gone. I remember... Bob Quist and I were sitting underneath that tree, talking to Georgie's husband, Whitey. (laughter) Whitey was a trip! She'd never leave him any money when she left. She used to come and rent rooms from me, she'd say, "Tony, now don't you let Whitey in that room." She put her two dogs in the room, because it had swamp coolers in those days. You know, it was a little cooler than...She wouldn't let Whitey in, but she put her two dogs in there. Whitey would leave, and I remember one time Georgie came up to me, we were shooting a commercial for AC Spark Plugs. I did a deal that ran for a long time in *Sports Illustrated*, a full-page ad of me, a boat in the background, just a ten-man. I'm blowing up this ten-man with a little nine-horse on the back of it. Georgie came up—she said, "Where'd you get that ten-man?!" I said, "I got it from Jerry Sanderson. He loaned it to me for this commercial thing." She said, "That's my ten-man!" I said, "Georgie, you're going to have to talk to Jerry about this." She said I knew where he got it—Whitey sold it to him.

* * *

Steiger: Tell me about the river...what was your first trip like?

Sparks: That picture of me standing on the boat, [cover photo] that was one of the first trips. You can see the mound of firewood we had on the boat that we picked up, like we used to do. We'd mound the whole front of the boat with firewood at night. We'd have huge fires going every night down there in the canyon. But that first year I went down was in '68. I realized we weren't going to make any living, renting motels, and boat rentals, and all that. We thought we were going to sell groceries to all the outfitters. Well, everybody's so independent. Ted wouldn't buy anything from us, and nobody else would. Ted would come in and tell the boatmen, "Yeah, you can eat there," and then when he came to pay the bill, he was always mad because they had eaten...

Steiger: Run up too big of a tab?

Sparks: Yeah, exactly. He'd bitch at them. The guys said, "Well, we can't eat anymore." Then the next thing you know, they'd be back eating again—hamburgers and breakfast and that kind of stuff. But after that we turned around...there were two boats that were left there, old cotton 33's. I blew one up. It wasn't painted—black. Blew it up, got a couple of side tubes—the side tubes were there too—and I built the first frame myself. We were making it so we could take it apart, because we were only going to the Little Colorado. You know, we had to helicopter everything out. I turned around, and I remember Ron Smith came walking up to me. I said, "Well, what do you think, Ron?" He said, "Oh, that looks great!" It wasn't great. (laughter) The first guy we ever had run down there was a guy that worked for Jerry Sanderson, named John Cooley. They called him Cool Cat. John was standing in water up to his knees, because the frame was too low. When I built it, I had no idea that [*the load*] was going to sink the tubes down, and the cold water and all that. Anyway, he was cold. After we ran that first trip, came back, we're sitting in the restaurant one day, these people come walking in, two guys and a girl. They said, "What do you do here?" We said, "Well, we run river trips in the Grand Canyon. We run trips to the Little Colorado." "Oh really? How long does that take?" "Three days." It's really 48 hours, which is three days, because it's Friday, Saturday, Sunday. I got talking to the guy, he's an editor for *Look* magazine. He said, "You know, we might be interested in that." I said, "Well, we can run 'em anytime you're ready." A week later he calls me. "Can you be ready in a week to go?" Now the panic! I had this old black boat, the tubes didn't fit, the frame was lower. The bottom line, I went up to Jerry Sanderson. I said, "I've got a chance to run *Look* magazine downriver. Any chance you could help me?" "Absolutely!" So Jerry gave me his boat, painted the name "Sanderson" out, put "Fort Lee" on the side. John Cooley ran it for me. We only took one section of his frame, because we were going to haul it out. It was a bigger frame, you know, than what I had tried to design. Anyway, June Sanderson cooked for us on the trip.

Steiger: She went on it?

Sparks: She went with us. And Jean Kerner [*phonetic*] was June's friend. We had a guy that was one of the original Sons of the Pioneers, from Apple Valley, come out.

Steiger: That was a music group?

Sparks: Singing group. He came out with his wife, with a big bouffant haircut. She had a leather jacket with fringe on it, high heels. I mean, she didn't know what she was getting in for.

Steiger: That was your entertainment?

Sparks: That was going to be our entertainment on the trip.

Steiger: And your vision was: we're going to run a deluxe trip? We're not going to go for a week, we're just going to let you have two nights, in and out.

Sparks: In and out. But that's all people...In those days, they weren't sure they wanted to go.

Steiger: People still...it's the same thing. They want the shortest one they can get.

Sparks: Well, when they got to the Little Colorado with me, and wanted to stay longer, I started running six days from the Little Colorado to Temple Bar. I'd bring the people out, put new people in, and ran a six-day to Temple Bar, when I quit doing...the Little Colorado, I got nervous on that. We had a couple close calls with the helicopter—scared me. I said, "You know, I don't want to kill a bunch of people, especially my boatmen or customers or...It scared me with that helicopter, hauling stuff out. He dropped one load—the helicopter guy did—up on top.

Steiger: Because it got to swinging on him?

Sparks: Well, the wind came. Wind came, and the guy that was flying said, "When I can look out that window and I see the load, and I look out that *other* window and I see the load, it's gone." And that's what he did. I took it back to Harvey Gardner, who built the frame for me. I said, "Harvey, these frames aren't standing up." After the guy dropped it from a hundred feet in the air! Harvey said, "If you did that on the river, you've got a bunch of dead people on your hands!"

Steiger: To get back to the *Look* magazine trip, so Jerry helped you with the boat, June went and cooked? And that went well, I take it?

Sparks: That went perfect. That was Jenny's first ever river trip. The only trouble was, that was the middle of October, it was bloody cold down there. And the *Look* magazine cameraman, he and his wife, she was French. I remember how beautiful—she was a starlet. And he was a good-looking guy. He did a lot of shots for *Playboy* and other big magazines. He was a big-time photographer. He took 3,200 pictures.

Steiger: In three days?

Sparks: Three days. And that was when he used film. You know, his wife did nothing but load cameras. He'd blow through a roll. She'd hand him another camera, he'd blow through a roll. Thirty-two hundred! But he wanted pictures in the water. Now here June and Jean and me, out in the water, with bathing suits on, like we're having a great old time—in October!

Steiger: Oh, and that water...

Sparks: It was just as cold as it is now.

Steiger: Well now it's warmed up a lot, because the lake is so far down. But it wasn't that full then, was it?

Sparks: No. No.

Steiger: They were still trying to fill it.

Sparks: Those were the days they were *really* filling it. It wasn't full until 1980.

Steiger: But you got a good article out of it?

Sparks: No. They went broke! They never did make the article.

Steiger: Thirty-two hundred pictures!

Sparks: I went back to New York...Before that happened,



I wrote to “What’s My Line,” the TV program, and said I’d like to be on it. They turned around and said, “Yeah, we’d like to have you on it.” So I went back and did that. When I got back there, I went and saw Henry Erlich. We went out and had dinner and he went and got pictures for me, that he had taken. He said, “We’re going broke. We’re not going to be able to run the article.” So he turned around and gave me all these pictures that we had taken on the trip.

Steiger: Whatever happened to those?

Sparks: Warehouse fire.

Steiger: Oh no!

Sparks: We had a stack of pictures in that warehouse

fire, an album that we had gathered over the years, with the people that had crossed on the Ferry—pictures of Buffalo Bill, pictures of people and their own private cars. People would come in and say, “You know, my dad crossed the Ferry.” “Do you have any pictures?” “Yeah, I think I do!” They would send us copies, and we had all *kinds* of pictures. They all burned, every one of them.

Steiger: What year was that fire?

Sparks: In '74. Patrick [Conley] asked me here awhile back, he said, “What year was that?” (laughs) I said, “Pat, I’m not sure.” But it was '73 or '74. It was the last day of the season, we had sent out the last boat Friday, and the fire started Saturday morning. I know how it started, but

I could never prove it. Those were the days when Patrick and Susan were running the store and boat operation for me.

Steiger: What a tragedy!

Sparks: Well, yeah, we had our office, we had a full-blown kitchen, because I had taken the restaurant equipment out of the store in there, and put it in, to use it to cook, because we precooked a lot of stuff. The guys liked precooked stuff so it didn't take so long on the river. We had a full kitchen, had our office in there, and all our supplies. I'd just bought a thousand river bags that I had run into, for a dollar apiece, rubber, old river bags.

Steiger: The good ones, though, those little black ones?

Sparks: Yeah. We had a thousand of them—they all burned up. Luckily we had three boats on the river—they'd gone that Friday—and there was one boat sitting out on the trailer, that big rigging trailer that we used. We'd rig everything, and then take it down and just launch it. There was one boat frame—tubes all rolled up—but it was on there, so we saved that. But the rest of the tubes...I bought 192 side tubes from Buck's War Surplus, and after I bought those—Buck said, "Well, how many of them do you want, Tony?" I said, "Well, what'll it take to buy them all?" He said, "I'll sell them to you for \$150 apiece." I said, "I'll take 'em all." (laughs)—And I sold those to Ted, I sold them to everybody. They were the 22-foot snouts. Yeah. I sold those to 'em for \$300 apiece. So I got all my money back on the tubes, and the rest of them we made into one-day boats.

Steiger: So you had, in the heyday of Fort Lee Company—let's just run through this. So you started out running down to the Little Colorado, helicoptering out. But there were people who wanted to stay, so pretty quick you started doing...

Sparks: Six days.

Steiger: You'd go three days down and then six days from there?

Sparks: Or an eight-day, all the way through.

Steiger: And the early crew members, I know you told that one story about you had Cool Cat Cooley, and then you got Bob Quist?

Sparks: Had Bob. He was the very first one we ran down there, and that was after the frame that...

Sparks: Fell apart. Or that fell apart on *him*, didn't it?

Sparks: Well, that frame, I bought a bunch of tubing from Harvey Gardner that was chrome alloy, and I thought, "Boy, this is going to be great! Lightweight, really strong." We were welding them up in the shop. There was one of the articles in a *Boatman's Quarterly* [see *bqr* 2016 Winter, Vol 29 Issue 4], Woody Rieff got so mad at me! He even called me, "You said I built those!" Woody didn't make them, it was his son, Chuck, that made them. But Chuck and I, neither one, knew that you cannot arc weld chrome alloy—you have to gas weld it. And that was what happened. Bob started out, he didn't get through Badger and it started falling apart.

Steiger: Yeah, he told that story. And you guys told that story too.

Sparks: Bob had never been downriver, when he took that first trip. He said, "Where do I stop?" I said, "Don't go past the big canyon on your left!" (laughter)

Steiger: The Little Colorado? Yeah.

Sparks: Yeah.

Steiger: Now did you guys build that helipad there?

Sparks: Yeah.

Steiger: You and Bob?

Sparks: Yeah. Went down there....

Steiger: How did that look? Did you do it before that trip?

Sparks: Yeah. I got permission from the Navajos to go in there, because my mother was a quarter Navajo. She was registered with the tribe. She had a census number. My grandmother was half Navajo, my great-grandmother was full-blooded. So I went over to Window Rock, talked to the guys. I said, "Could I get permission?" That's when I talked to the man that came into the store, that I fixed his chains for—he set me up with the deal. I told him who we were, and he remembered me for fixing his chains. But he turned me on to the attorneys. The person that I dealt with was a white man for the Navajo Tribe, and he said, "Yeah, you can do that." Well, legally, the Park Service only owns up to the mean high water on that side of the river, so they made me go way up on the bank, to get it out. We had a heck of a time. Like Bob said, the first crane we made, we tried to make it work, pulling the boats up, two guys pushing and the crane cranking it with a hand crank. That didn't work. I remember I had an engineer on one of the trips. He looked at it and said, "You guys are going about this all wrong." I said, "I'm all ears." The guy said, "What you need is a great big piece of netting to lay off, down over the rocks. You hook onto the end of it, get twice as far away as you want the load to be, and when you pull that with a crane, that tube will roll in the net. And that worked like a charm. I went to Buck's War Surplus and bought the netting, we made the thing, and lo and behold, we got the tubes up there. Then we'd hook onto the helicopter. He'd hover right above me, and I'd snap him in, jump down, get out of the way.

It cost \$600, I remember, an hour, and it was port to port—you know, from where they left at the South Rim, to when they got there. We started out with a little B-1 helicopter, Hughes, little bubble. Then we finally got the Ranger, which could lift the loads. With that B-1, it was a struggle, just to even get the boat out.

Steiger: Oh man! So you wanted to run the *deluxe* trip?

Sparks: Well, I remember Ted looking at me one day—and that's when Ted sold the trips for like, eight-day trips or ten-day trips they were doin'. Ted said, "Tony, nobody's gonna pay *your* price."

Steiger: What was it, like 300 bucks?

Sparks: \$295 for a three-day trip.

Steiger: That was what you were getting?



Sparks: Yeah. And Ted sold an eight-day for the same.

Steiger: He thought \$295 was going to be too much?

Sparks: He said, "You're crazy! Nobody's gonna pay your price." I said, "Ted, you don't realize..." He lived in a little town a *long* time. It's like the people in Page, when we bought those houses, they said, "They're never gonna sell all those houses. You kiddin' me? For \$12,000?! That's too damned much money! I'm gonna wait 'til the price drops." (chuckles) I said, "You don't realize what's going on in the real world."

Steiger: You were coming from California.

Sparks: I came from Long Beach. I'd just sold a house on the Boardwalk, at that time was the highest-priced house that ever sold on the Boardwalk, and it was \$67,000. That same house sold for \$750,000 the next time; and it's probably worth at least \$1.5–\$2 million now—being right on the ocean.

Steiger: Yeah. \$295.

Sparks: We had people, we started running ads. When I got back from "What's My Line," I called on all the

travel agents back in New York. I told them, "Give me an open-ended ticket to come back." They said, "Alright, no problem." You know, in those days changing tickets wasn't any big deal. They paid for my way back there and put me up in a hotel. I had to pay for the extra days at the hotel, but the TV deal did all that.

Steiger: Your early boatmen...I know Patrick [Conley] kind of managed that. And you figured out the one-day thing, right?

Sparks: Yeah.

Steiger: So that was your idea too, let's go from the dam down?

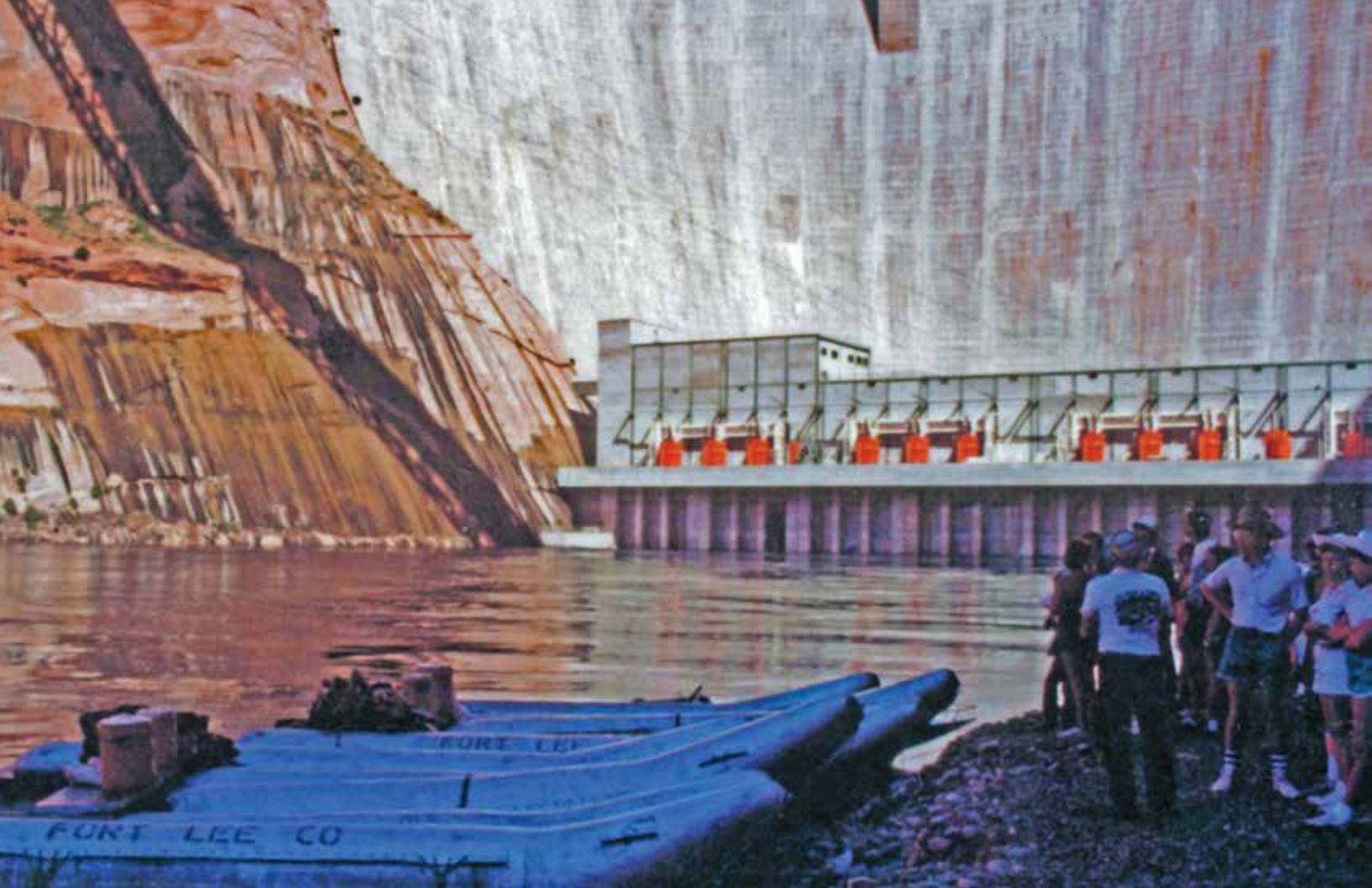
Sparks: Well, they forced it on me, the Park Service.

Steiger: They did?

Sparks: Oh, I treated that thing like a red-headed stepchild.

Steiger: You didn't *want* to do it, too much work?

Sparks: We were busy! We didn't need another thing going. Finally we got it going, yeah. The biggest year I ever had was about 7,500 people. But in those days we had



such high and low water it was a problem. I had a boat called the *Swamper*, built by Dean Waterman. Jerry and I built the Separation Connection together. We put a couple of 200s on the back of it, and came up from Temple Bar to Separation Canyon. Bob Whitney named that. We were trying to come up with a name. Bob looks at it, he goes, "Let's call it the *Separation Connection*," because that's where we picked everybody up. Anyway, we ran there from Separation to Temple Bar, instead of going across the lake, because we'd *been* going across the lake at night—you know, all day long.

Steiger: Oh yeah, too hot, too far.

Sparks: Oh! That *killed* the trip. People *loved* the trip and got burned out on the bottom end. So Jerry and I came up with the idea of going across there...Ron had the *Brandy Jo*. That's a story I told about Ron and I breaking that in.

Steiger: Yeah. That's the one, yeah.

Sparks: Down at Badger.

Steiger: That's the one we put in the BQR.

Sparks: But we built the *Separation Connection*. That was 36-foot. It was licensed for 48 people, Coast Guard approved. And then I built the *Swamper*, that was a 26-foot that Dean [Waterman] built. It had a bow like an LST landing craft, and we could roll the tubes into them on a cart we made—the one-day tubes—put them in there, had two 200s on the back of *that*.

Steiger: And you'd just drive them back up there?

Sparks: Drive them back up when the water was high, because if you tried to wait 'til later, the water was so low you couldn't get back upriver. We'd get days there were 3,000 cfs, you couldn't get back upriver. So anyway, we did that, and that's the way we got all the boats back up there. Now the water's high all the time.

Steiger: You just drive them back up?

Sparks: Yeah, they've got 90's on 'em, and they just race 'em back up.

Steiger: Which is smart. But that turned out to be a big business.

Sparks: Well, when I sold the company to Del Webb, unbeknownst to me, that's what they wanted.

Steiger: That's what they *really* wanted?

Sparks: I had a twenty-year contract to run the river. I was the only one with a twenty-year contract. Everybody else had a ten-year permit. And I thought it was my twenty-year contract that Del Webb was really hot for. They weren't. They wanted the one-day.

Steiger: I'll be darned.

Sparks: When I sold it to him, I thought I'd laid him away. They thought they'd stole it! So that's the way a deal should go down—both of you are happy.

Steiger: So after Bob, I'm trying to remember who-all... Just the Fort Lee crew in general, I remember that just

being a stellar crew. You had Sam Street, Gary Mercado, Pat Conley...

Sparks: Dave Hinshaw. Paul [*Hinshaw*]. Tim and Bob Whitney. What's his name, that has the place up in Alaska. Bart! Dave and Linda Kloepfer, Karen Kazan, Myron Cook, Jeremiah Jett, Bob Wade...

Steiger: Bart Henderson? He did some of those?

Sparks: He ran for us. We had guys we picked up. My own private trips that I used to run every year—I called training trips because they wouldn't count against my user days. (laughter) Never did train those guys in, but they were all my buddies. That guy with the blue shirt on is Bill Witt. He's my best friend I talk to every day. He's down here now. He came in '75 and we started running those private trips with Tim Means running the boat for us, empty. But God, I think of guys like, as you say, Jake... (laughs)

Steiger: Jake Luck?

Sparks: Yeah. He ran one of the three-days. I was taking Jay Sarnow, that owned Circus Circus, and he'd been down once before. He said, "We want to go again. I want two boats." He chartered two boats, taking a whole bunch of people, family. I said, "Great!" I end up getting Jake. And Bob Wade was another full-time boatman. His dad was the banker that helped me refinance after the fire. Bob owned a mountaineering shop up in Aspen. But anyway, Jake came, and he ran Jay Sarnow. They get down to the Little Colorado, and they'd already set it up, they didn't want the helicopter at 11:00, they wanted it at 1:00, so they have more time to play in the warm blue water for everybody. Great. About 11:30 Jay Sarnow says, "Okay, we've had enough, we want to go."

Steiger: "We want to go now!"?

Sparks: Yeah. Jake told him, "The helicopter's coming in at one o'clock like we already prearranged. I don't have any access to get to them." Sarnow looks at him and says, (angrily) "You don't understand, I'm saying I want out now!" And Jake looks at him...You knew Jake.

Steiger: Oh yeah.

Sparks: He stands a foot taller than Sarnow, looking down on him, "Look, you little fat bastard..." Bob Wade told me about it afterwards. He said, "Tony, you won't believe what happened at the Little Colorado. Jake jumped all over Sarnow." I'm going, "Oh man! They're going to come back with hand grenades and throw them through my front window." I got in the car and drove to Vegas and went into Circus Circus, told the pit boss I'd like to talk to Jay Sarnow. He said, "Who are you?" I said, "I own the company that he just went on a river trip with." "Oh! He said that was the greatest trip he'd ever taken!"

Steiger: (laughs) He wasn't mad!?

Sparks: I turned around, went out, got in my car, and drove home. (laughter)

But knowing Jake, I could just imagine. I think of Jake and Scotty [Dunn] and all those guys at Waterman Welding...Everything they did was perfect. They built

those two boats, our trailers. They built all my frames for me over there, out of stainless steel. The last batch I had, the tubing was all stainless steel tubing. But you didn't ever have to tell them what to do. They all knew, because they were all boatmen, they all had the experience, and they knew. You can't find that kind of help anymore.

* * *

Steiger: So you supplied the bar?

Sparks: We didn't want anybody to bring anything but a toothbrush. In those days we had cots, sleeping bags—we provided everything, you just show up with your toothbrush, and you can go down the river. Tell me what kind of booze you want. When I first met my friend Bill Witz, it was on a trip in '75. He came in and he had cancelled two people on me at the last minute—he had a charter, cancelled two people. Well, you know, they're pure profit, the last two. You've already covered the nut. I thought, "Well, I'll take my boys." They had never been down. Jeff was about eleven. Gary was about six. Bill looks at me—he says, "What are these kids going for?! You're only supposed to have twelve people on the boat." I said, "I'm third crew on this boat." Anyway, that night Bill came up. I said, "You want something to drink?" Now, he'd glared at me all day, up in the front of the boat, and I was back in the back, glaring back at him, thinking, "Boy, eight days with this jerk from Chicago?!" Finally came up, he says, "Yeah, I'll have a Crown Royal." So I fixed him one. I was drinking Chivas. So I had a Chivas, and Bill had another Crown, and I had another Chivas. The bottom line was...we ended up under the table, with our arms around each other, in the sand, the next morning!

Steiger: And you guys have been buddies ever since? (laughs)

Sparks: Ever since. We have been all over the world because of Bill. He'd take fifteen guys, and we've been to Africa, Indonesia, Sumatra, all these places—the Bio Bio—we did *all* these places. I went to Moscow, flew in a Mig 25, because of Bill.

Steiger: Where did *his* money come from?

Sparks: Continental Electric. They built the Sears Tower, Water Tower building. I mean, this company is the largest electrical contracting business in Chicago right now, fourth generation.

Steiger: So when you started, you were charging \$295, way too much money for a three-day trip?

Sparks: Yep.

Steiger: What did it cost to go the *whole* way?

Sparks: The whole trip was \$495.

Steiger: Yeah, I remember Fred [*Arizona River Runners*] was selling them for \$345.

Sparks: When I was done, I was still the highest priced on the river, and I was \$895 at the end.

Steiger: What year was that you sold?

Sparks: In '82. Everybody said, "Did you know that

was going to happen, that it was going to flood?" I said, "Sure. Why do you think I go skiing up in Aspen and check around these places?"

Steiger: Did you know?

Sparks: No. (laughs)

Steiger: What made you decide to sell right then, if you don't mind my asking?

Sparks: It was just time. I guess it's like anything, you know, after you do it for a while.

Do something different. I talked to Jerry into selling it, and Bill Diamond wanted to sell. Fred was going to sell at the same time, and then he backed out. All four of us were going to sell to Del Webb—they were going to buy them all.

* * *

Sparks: Fred and I became real good friends over the years. We used to go to the river meetings together all the time, and we'd go places, we'd end up sharing the rooms. Fred and Carol were fun. Once we got to know them, they were a lot of fun to be with. Fred came and ordered some motors from me. I was a Mercury dealer, so I would sell motors to Jerry and everybody. Ron [Smith] had his own Merc dealership, but the rest of the guys all bought—Ted bought motors from me—everybody. So Fred comes up one time and he buys, I don't know, three or four motors. In those days they were \$500-\$600 apiece, whatever they were, and he gives me a check for \$2,700. Well, I put it in my shirt, and I go about what I was doing. Well, I lose the check. I don't know what I did with it, I just lost it someway. I came back to Fred, I said, "Fred, I don't have a clue what happened, I lost the damned check." So he gave me another one, and I lost that one! Fred's banker says, "Fred, do you know this guy you're dealing with?!" I finally got the third check, took it straight to the bank and put it in.

When I think about Fred and all the places we'd go and the things we'd do...I remember—you know, you talk about that party that Ted threw for Georgie...

Steiger: That was a good party!

Sparks: Oh yeah! But I mean the fireworks and all the stuff that he put on! Ted was fun. I liked Ted and Don [Hatch]. They were both great guys.

Steiger: I was sorry that we lost...I thought it was too bad we never did throw a big party for Ted.

Sparks: Yeah. He always was a giver.

Steiger: Well, and he was somebody—as a community we didn't really give him his due, because he was such a pioneer, and got so many people started.

Sparks: Well, I think about the people like Dee Holliday, all the meetings we had in Dee's basement, sitting down there. I remember old Buckethead [Les Jones]. And I think about the people like Jack [Currey] and Betty Ann. They were kind of like...

Steiger: Clean cut, weren't they?

Sparks: Oh! And good-looking. You know, Betty Ann

was so pretty, and Jack was such a good-looking guy. But I think of all the people, John Cross and Lou Elliott...

Like I say, of all the people... And how close we all were. There were only twelve of us when we first started that Western Rivers...

Steiger: The Western River Guides Association?

Sparks: It was Ted [Hatch], Jerry [Sanderson]...Jerry and Bill [Diamond] were together in those days. Fred—he had just started. Ron Smith. Lou Elliott. John Cross. Dee Holliday. Who else? Well, Georgie. Yeah, that was...I remember the guy from Poland or wherever he was from.

Steiger: Vladimir Kovalik! [Czechoslovakia]

Sparks: Kovalik, yeah. Gaylord [Staveley]. Don Harris was one of the first guys. What a nice man he was!

* * *

Steiger: So when you started out with the concession, the premise was they were going to put in a bunch of infrastructure, and you were eventually going to build a hotel?

Sparks: We had the architect design the hotel, do all that.

Steiger: You had to pay for that?

Sparks: Oh sure. Up on the cliff, right above the Paria. If you go down to the beach there, you look off to the right, you'll see the road going up. That's where the road was, and they built the sewer ponds up by the trash dump. They put all that in. They spent \$350,000 in those days for that...So that's why we bought all that, and we bought the best of equipment for that restaurant, because we were going to build the new hotel. All of the Vikiing equipment and Wolfe stoves, and, you know, the best commercial stuff you can have.

Steiger: That was all in the warehouse?

Sparks: It's all gone. I sold some of it, got rid of it. But, you know, I got so frustrated with the Park Service. They'd tell you something...you'd deal with one guy, make a deal, and then all of a sudden he'd get transferred. Now you've got a new superintendent in.

Steiger: "No, we're not doing it!" the new guy would say?

Sparks: Yeah. Exactly. I was dealing with the National Park Service. I wasn't dealing with an individual. I was dealing with the Park Service. And when the warehouse burned down, I had a fire plug sitting outside that warehouse, they *made* me put in—but they never brought the water to it. What would have happened if it'd been the other way around? You know, I called Stewart Udall, because I had known him. I said, "Can I sue the Park Service? Because they didn't bring the water to my warehouse. It never would have burned down if they'd have brought the damned water and hooked up the hoses, and we could have fought that fire." Stewart Udall said, "Tony, let me tell you something, you won't live long enough to beat the Park Service. They'll run you from

Denver to San Francisco to D.C., and it'll be back in Santa Fe pretty soon. Then it'll be back up in Denver, and you'll be out of money...That's the way they play the game. You can't beat them. You can't get ahead of them."

Steiger: I'm sure he would know.

Sparks: He told me, "You're just going to have to bite the bullet." Which was the biggest disaster of my life when it happened. I had a bar in there I'd just bought, from Ash Fork. My dad had found it. It was an old bar, about sixteen feet long, with a whole back bar with the beveled mirrors and an old National cash register that was nickel-plated, craps tables, two old barber chairs. We paid \$1,900 for all of it. Had a brass rail. Had a bullet in the bar, that had killed a guy—a .45 slug, gone right through him and stuck in the bar. It belonged to Fred Harvey at one time. It'd come around the Horn on a sailing ship. That's how old it was. That was in the warehouse, and it burned up—all that stuff. We were going to sell it to Bobbie McGee's Restaurant. My buddy knew Bob Saguaro that owned it. We were going to sell it for \$20,000. I was going from \$1,900...Just a lot of good deals I had like that. I bought a Corvette alongside the road one time, coming back from Buck's War Surplus with Jenny in the two-ton truck. A Corvette goes by. I get up right outside Santa Clara—that was before the cut was in—and the guy's broke down alongside the road. I stopped. I said, "You alright?" He said, "Transmission went out on this thing. The stick goes everywhere—transmission's out." I said, "Oh really?" He said, "Can you give me a ride into Saint George?" I said, "Yeah." So he got in the truck. I said, "What are you going to do?" He said, "Well, I'm just repossessing the car. It belongs to the bank in Salt Lake that I work for. Boy, my boss is going to be pissed." Because this car, they had been chasing it for a long time, and repo'ed it. He said, "They told us they had an offer on it for \$1,600." This is a '69 Corvette convertible, bright red, with a 435-horsepower engine, lake pipes, knockoff wheels, \$1,600. I said, "I tell you what, I'll give you \$1,600 for it right where it sits, if you can call your boss and take the bus home." The guy said, "Are you kidding?" I said, "No, I'm serious." Saturday morning. So he calls his boss, the boss said, "The transmission is out on that son of a bitch? Sell it!" So I gave him a check for \$1,600. I said, "Send me the title when you clear it. I told him who I was, and the boss, we explained everything. "National Park Service concession, you can trust me." Anyway, Jenny drove it home. I was going to tow it behind the truck. We get there, the cops are there, and they're running the plate. The kid had put his car plates on the back of it, because the plates were obsolete. He put his Opal...The cops are running this. It's not an Opal, I can tell you that. So anyway, he gets in trouble, he's got to pay a fine. We get to Saint George, I pulled into Sunland Chevrolet there. I said, "Can you have somebody look at this thing?" He said, "Nah, the transmission guy is gone. It's Saturday, he's not working. Oh wait a minute! Here he comes on his motorcycle right

now." So I said, "Would you put it on the rack and just look at it? I don't expect you to fix it, I'll leave it if that's what it takes." He said, "Sure." So he puts it on the rack. The bolt had fallen out of the linkage. I knew that's all it was, because the stick just went everywhere. The kid didn't have...He said, "Oh my God, don't ever tell my boss that." We'd already made the deal, I gave him the check, Jenny drove it home. But I took it down here [to Phoenix], and my buddy doctor took it up to 19th and Dunlap, parked it on the corner, had a friend that owned the business up there. A gal came through the intersection, T-bones the car, caves it in.

Steiger: Oh no!

Sparks: I had no insurance on it! I bought the thing for nothin', and here I was going to cut a fat hog on that one, too.

* * *

Steiger: What was the best part of it all for you?

Sparks: People. Absolutely. The people I met, some of the best friends I have are from the river. The famous people and not so famous were all special. Having a wife who helped! Made beds, waited tables, and raised our kids...and put up with me for 62 years of marriage!

The Catch

"Woohoo!!!" He calls out,
Teeth shining in the sun,
Hands waving over rushing river.
He shouts and gestures,
"Big guy!!! HUGE!!
Right there.
Not this big. THIS big."
Fist pump.
"I'm gonna get him."

He's got me.
I smile and nod, having just taken the other trail
route
Into the canyon,
Simply because it's the other.
Into the introvert's lair,
Dropping down smooth blocks of black
Butt sliding in my flops down gravelly sand.
I love the sense of discovery as I duck under
shrubs
And stair step short cliffs,
The sense of competency,
The feeling I'm in a secret place
That only a few will go.

Few go where he goes.
He gets to the river and starts tying line to "get
that guy."
I wave wildly and then rock hop the opposite
direction,
Eyeing my spot in the stream,
A flat boulder mid-river.
The sun cooks down,
Making me wish I'd brought more salty snacks.
My feet ache with the cold of the water,
Just barely tolerable. Yesterday
The cold tickled and I had to start with
Just my heels in the water
And sneak attack my toes.

Standing on his toes,
He hoots and fist pumps while he holds an
arching rod,
Points towards his feet.
Gangsta nod.
I glance up from the pen now and again to
Smile, celebrate and confirm the catch.

He's a catch.
I like watching his skillful, callused hands tie the
hook with
Invisible thread,
Six deliberate twists as he talks.
Snip.
He talks as he swaps out his fly, experimenting.
"I just don't know what he's eating out there."

He devours lots in life.
On the drive, he wails words to a song, I'd flip it.
He drums the wheel with a punctuation point at
me.
He locks into the lyrics again and I switch it.
Then he segues from drumbeat diva to fishing
phenom
And chatters on about flies and flinging line.
Man he loves to fish.

He loves his fish.
I find my rock in the stream, I sit.
I read about a circus and a circuitous love story.
I scribble in my notebook.
I soak in the sun and nap as my back undulates
to conform to my rock.
I have a deep sleep.
Deep rest.
To be released from the push.
The river fills my ears.
Cool river breath under the folds of my shirt.

He doesn't spend too much breath teaching me
to fish.
I fish for five minutes every few hours.
He's not overbearing.
He sets up my line and explains the strategy for
this river. "Right There."
I nod and toss,
Taking the rod and cast short casts.
I don't snag any tree—or fish.
I practice mending.
I feel the zing that signifies a good cast and he
shouts!
After a bit, miles of line get sucked down river
and land in a tangle at my feet.
I squat and grab the nest of line
And feel a nudge and glance up to see
The indicator dunk
and a river trout diving under a rock
But I hustle him away from that rock
And he comes dancing and thrilling with the net.
Big guy. HUGE. RIGHT THERE.
I got him.

Megan Kohli



Jim Hall in Hermit. Photo: Allen Gilberg

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Mom and Kids – Conquistador Aisle. Photo: Allen Gilberg