

Boatman's Quarterly Review

MUSTANG SALLY GIST

The Journal of the Grand Canyon River Guide's, Inc. • Volume 34 Number 3 • fall 2021



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!

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

Office Hours: noon-6:00, Monday through Friday

Phone 928.773.1075

Fax 928.773.8523

E-mail info@gcrg.org

Website <https://gcrg.org>

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MUSTANG SALLY

Cover: Mustang Sally Gist, 2021. Photo: Dave Spillman



Sally working as a stunt double for the movie "Drop Zone."
Interview on page 30.

Prez Blurb

Well, here it is, my final Prez Blurb. The year has flown by, but so much has happened! There is so much to be done when it comes to protecting the place we love. There are issues that *must* be addressed from social justice and equity, to environmental issues.

Wildfires, flash flooding, drought, climate change, and just the general safety of doing what we do.

There have been some heartbreaking tragedies in the corridor this season. We all need to reach out and be there for our

GCDAMP, WAPA, GCMRC, BOR—and the list goes on and on. Who are all these people? Some of us know, but a lot of us get lost in it all. Let's try and simplify; at least know who is who. That being said, GCRG (Grand Canyon River Guides) does have a seat at the table! We must stay in that seat and participate or we will not be taken seriously, and therefore become ineffective. I myself, need to learn more about it and strongly suggest that we all understand what's going on with the dam and our resource. I'm hoping that we can put

might be! Of course, I must mention our amazing Executive Director, Lynn Hamilton. She keeps this whole thing together. Thank you so much for all the work you do Lynn! Mary Williams and Katherine Spillman, who edit this publication—thanks for dealing with my gibberish!

Be safe, I hope to see y'all out there!

Al Neill

One thing that needs immediate attention is our water—where it comes from, and where it's going.

community and those affected. It's good to know there has already been a lot of support and help offered.

This year the Indigenous WFR Scholarship came into being and has been getting some participants which is exciting to see. Let's keep this program running in the future! The original stewards of the land should be guiding people through this region. Plus, more Wilderness First Responder's is good for everyone!

Mother Nature has been hard to handle this year! Droughts, wildfires, and flash floods, are a result of climate change. What can be done? It seems like a much slower process and is going to take the masses to produce any significant change. One thing that needs immediate attention is our water, where it comes from, and where it's going. This is something we need to pay more attention to. For me it's very easy to get lost in all the politics, entities, and groups that have been formed—LTEMP, AMWG, TWG,

together somewhat of a flow chart to show how all the players come together. I am ill prepared at this time to do so as I've been on the river a whole lot this summer. I'll work on getting something printed in the BQR and will work with more qualified individuals to do so.

It's been a real pleasure being involved with Grand Canyon River Guides. I will remain involved, but it's time to pass the torch. Billie Prosser will be filling the role of President starting in September. She has been great and getting things done and will do a terrific job. Thank you Billie! Mariah Giardina will serve as Vice President. I work with Mariah A LOT; she is a great resource and hard worker. She is also one of the "more qualified individuals" I mentioned in the last paragraph. (Yep, I'm putting you on the spot Mariah!)

We have an exceptional Board of Directors right now. With the list of candidates, I am super excited for the new people coming in, whoever it

Dear Eddy

In Reference to the *Wally Rist Oral History in the Summer 2021 BQR, volume 34:2.*

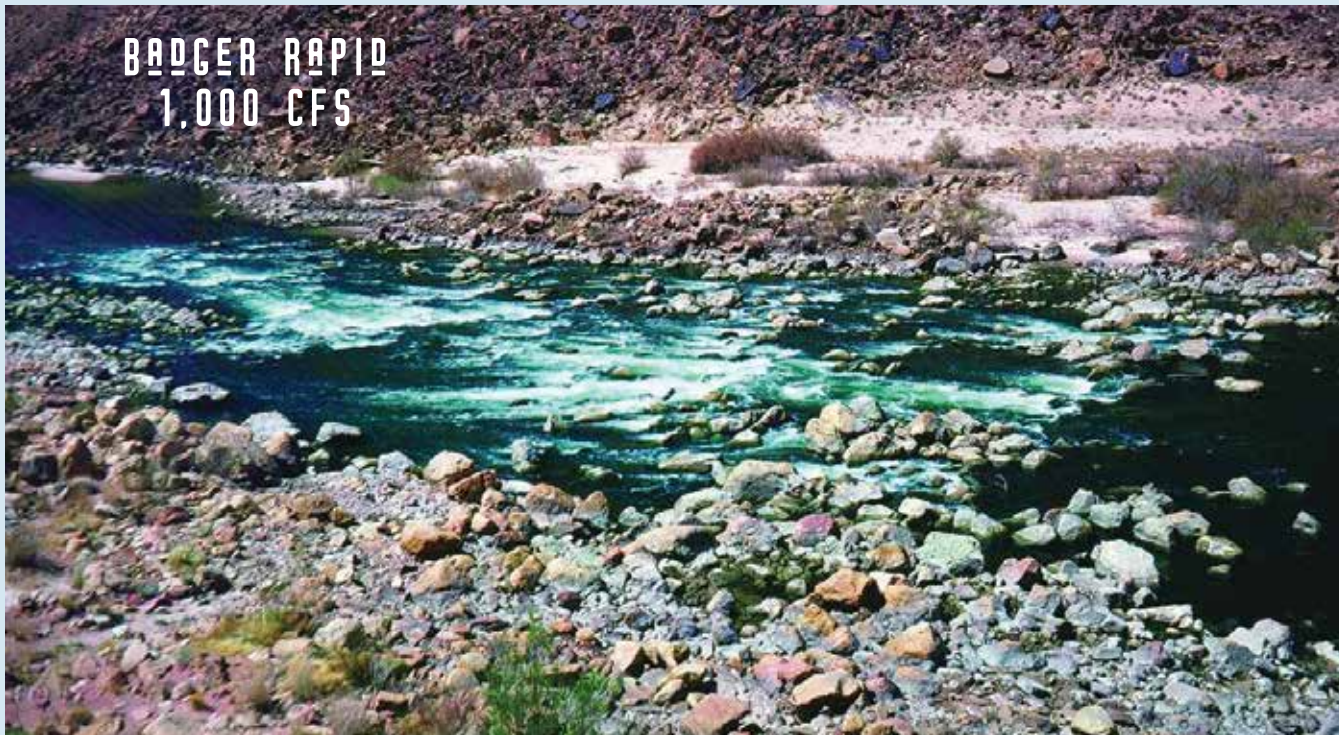
The "Wally Rist" interview in the summer issue of BQR included the fascinating account of combat between "a bird" and a rattlesnake. Steiger asks the obvious question: What kind of bird was it? From the photograph, it's doubtless a yellow-billed cuckoo. A shy bird, uncommon, prefers willow thickets, nests above ground, and is sometimes a parasitic nester. Although rattlesnakes don't climb trees, the cuckoo recognized it as a threat-predator. What an altogether rare and memorable observation.

Cort Conley

In Reference to the article *On the River With Seldom Seen: A 1,000 CFS Adventure* by Kim Crumbo in the Summer 2021 BQR, volume 34:2.

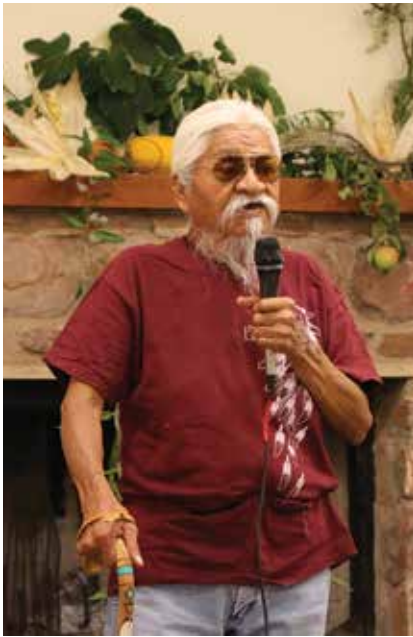
The following photos were submitted by Stu Reeder as a follow up to Kim Crumbo's article about running Grand Canyon at 1,000 cfs.

Bob Whitney (who was on the trip with Crumbo) gave the photos of Badger and Lava Falls to Stu. Both photos taken at 1,000 cfs.



FAREWELL

Rex Tilousi, June 19, 2021



Reprinted with permission from the Grand Canyon Trust blog at grandcanyontrust.org, June 25, 2021.

Greetings, friends. It is with deep respect that we honor the life of former Havasupai Tribal Chairman Rex Tilousi, who passed away on June 19, 2021. Here at the Grand Canyon Trust, we highly respected Mr. Tilousi's passion and advocacy on cultural and environmental issues impacting his homeland and lands and waters beyond the traditional borders of the Havasu 'Baaja—the people of the blue-green waters.

"We, the Havasupai, believe that we lived within the Mother Earth. The place of emergence where we came out to the surface of our Mother Earth is within the Grand Canyon area. We emerged from the Grand Canyon, from within the earth. We migrated up to the rims of our Canyon home. There we lived in peace, in harmony with plantlife and wildlife, our Mother Earth, the waters,

the air, the sun, the moon. These we regard as our relatives. We lived within the Grand Canyon area with the waters, the springs that we have in our Canyon home. We lived in the Canyon in the summer, we migrated up to the plateau areas in winter. This is how we lived within the aboriginal lands we once roamed, where we once prayed, the mountains, the beauties that we regard as very sacred." —Rex Tilousi

Mr. Tilousi spoke highly about his upbringing and the teachings he received from his elders. This wealth of knowledge was information that had been passed down through the generations. This knowledge could not be found in textbooks or on websites, but could only be heard in prayer, song, ceremony, and lessons which were learned daily. This knowledge could only be found within the confines of one of the most beautiful places in the world, a place like no other, a place surrounded by tall red-mauve walls, blue-green waters with majestic waterfalls, and lush gardens, and, on the canyon's rims, in a forest which supplied food, warmth, and supplies for the Havasupai people.

If you had the pleasure of meeting Mr. Tilousi, you know he will always be remembered as a well-respected leader who spoke eloquently and passionately about the true history of the Grand Canyon and what that meant to the Havasupai people.

He reminded us of a time when the people lived peacefully above the canyon in their vast traditional lands. He also stressed the importance of water and how it sustained life in the Grand Canyon for all living beings. There was beauty, strength, and resiliency in his words as he spoke about the land he grew up on.

"We were given a responsibility to protect and preserve this land and water for those yet to come. We have a job

to do. The ancient rock writing in our canyon tells us to protect this place. The canyon doesn't belong to us. We belong to the canyon, to the earth, to the water. It created us and gave us life. We are fighting for our lives and for those who are yet to come." —Rex Tilousi

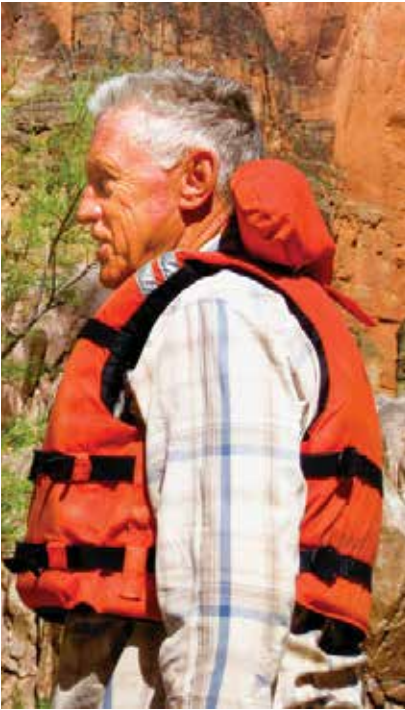
He testified before Congress, interpreted the canyon for tourists, and served as an elected and respected cultural leader. At gatherings at the South Rim, Red Butte, and public hearings, he sang "No More Uranium Mining" accompanied by drumming and round-dancing. He spoke up for protecting springs, the Little Colorado River, and the entire Grand Canyon, serving as one of its most powerful guardians. Mr. Tilousi was an honored elder who contributed to intertribal conversations and collaborations.

Whenever Rex left the canyon to pursue education or work, the canyon and the people always called for him to return home and that is where he is now—Mr. Rex Tilousi has returned home. Thank you, for everything you have taught us. We will miss your grace and good humor. You leave behind future generations who will continue to carry your teachings and voice with them to ensure the safety and legacy of the Havasu 'Baaja.

Sarana Riggs

Photo credit: Grand Canyon Trust

**Wally Rist, November 17, 1941 –
May 18, 2021**



The Canyon lost a devoted friend and champion when Wally Rist (whose oral history interview was in the last issue of the BQR) passed on May 18th. He had been battling cancer for the last few years but still managed to stay attuned and involved with all things Grand Canyon.

Wally was in what is now a very small club—people who ran through Glen Canyon before Lake Powell. It was in 1958 and construction on the dam was in its infancy. He started his river running career in earnest in 1969, rowing a cataract boat for Mexican Hat Expeditions. He got that job because Fred Eiseman, his high school teacher and mentor, had recommended him. It was Fred, who started running the river in 1954, who took Wally on the river through Glen Canyon. Fred had worked for Georgie White, and then Gaylord Staveley at Mexican Hat. Fred also got him a job teaching math at Phoenix Country Day School, a private college preparatory school in Paradise Valley, Arizona. In 1971, Martin Litton hired Wally to row a

dory for his fledgling company, Grand Canyon Dories. Wally quickly became one of Martin's trip leaders. He quit teaching and continued guiding trips for Martin for the next ten years. By 1980, he started working for a California real estate developer who had been a dory passenger and enticed Wally to come work for him. He would work in Phoenix, the San Francisco Bay area, and Kansas City, Kansas. By 1985, he had struck out on his own, developing projects in Kansas City. It was there that he met his wife, Twyla, and had two children, Samantha and Scott. He was extraordinarily thrilled when he got to share the impressiveness of the Canyon and the river with his kids.

I met Wally when I was a passenger on a dory trip in 1971, and stuck around to apprentice on the last trip that year. In 1972, I returned to work for the dories and ended up on Wally's crew. That year, a passenger hired me to teach in Phoenix when the river season ended. Since Wally was living in Phoenix, we decided to share the rent on a house because neither of us could afford to rent a place on our own. In that off-season, Wally went to work as a page at the Arizona State Senate, working for then state senator Sandra Day O'Connor. We spent weekends and time off exploring the state in my Land Rover, Wally navigating and me driving. One of those sites was the Black River. It, along with the White River, make the Salt River which flows (or used to) through Phoenix. We ended up kayaking a sixty mile stretch of the Black in March, in a snowstorm, temperatures just at freezing, with only short sleeved wet suit tops. Since neither of us had any real experience kayaking, it's amazing we muddled through the sixty miles without serious complications.

Both of us loved photography, and we would spend hours critiquing each other's work. In the May 1976 issue of *Arizona Highways*, Wally had about a dozen of his photographs published along with photos by Don Briggs, and David Muench.

On several occasions, we held slide marathons trying to look at all of our Grand Canyon photos. We never completed one of them.

Wally started doing private trips in 1980, the same year he, along with Kenton Grua and Rudy Petschek, set a speed record for rowing a dory from Lees Ferry to the Grand Wash Cliffs. He continued doing private trips until the wait list for permits became untenable. Once the 2006 Management Plan went into effect, Wally joined the board of Grand Canyon Private Boaters' Association. After a few years, he became its president, and led the organization until three years ago. During his tenure, he spent a significant amount of time pursuing ways to better protect the canyon from threats like the Escalade, the pumped storage project on the LCR, and various boundary issues, all of which would have had consequential environmental and social impacts on the Park. He also strove to maintain good relationships with GCRG, Grand Canyon River Outfitters Association and the Park, knowing that more can be accomplished through cooperation than confrontation.

The canyon has lost an apostle, and his friendship and counsel will be profoundly missed by many of us who crossed paths with him. Keep the gray side down my friend.

Rich Turner

Garth Bundy, September 4, 1934 – April 10, 2021



There are many ways to connect with Grand Canyon and for many readers of the BQR the vibrant thread is woven in and through river trips. But there are other ways to connect deeply with this place and for Garth Bundy, who passed away at the age of 86 on April 10, 2021, in St. George, his life orbit brought him close to the canyon on the back of a mule. A native Arizona cowboy, rancher and late-in-life Grand Canyon helipad personality, Garth was lucky enough to intersect with the canyon in one of its most remote and beautiful corners, the western Arizona Strip.

For those who have never experienced the helipad scene, this remembrance may be glanced over rather quickly. But guides and passengers who have partaken in helicopter take-outs at river mile 187.3 will find the story of Garth's life as interesting as his out-sized persona. My first 33 river descents over twelve years were oar trips and we always passed the helipad with quizzical or confounded looks.

But after switching to being an interpretive guide on motor rigs, my life intersected with Garth as he held court on that small riverside beach in a manner that was as funny and real as it was touching and unforgettable.

Garth Loran Bundy was born in Taylor, Arizona on September 4, 1934 to Bud and Maureen (Nelson) Bundy. He was the oldest of six children. He attended grammar school in the one-room schoolhouse in Bundyville on the Arizona Strip until the 5th grade, after which his family moved to St. George. Garth first rode an equine down to the Colorado River when he was only eight years old, beginning his life-long connection to Grand Canyon at that early age. He married his sweetheart and wife of 61 years, Louise Ditmore, on March 5, 1960 in the St. George Utah Temple. They both raised seven children.

An obituary published online by Hughes Mortuary states:

"Garth honorably served in the Western States Mission for the Church of Jesus Christ of Latter Day Saints. A cowboy to his core, Garth earned his way in this world through consistent hard work. He decided early that he would enjoy life as it unfolded, choosing to earn his living doing what he loved at each stage of his life. He spent years as a Teamster, hanging power lines, driving heavy equipment, and building roads across the western United States. He helped to build the Glen Canyon Dam and the highway through the Virgin River Gorge."

A chance encounter with Tony Heaton on the Arizona Strip in 1983 resulted in Tony casually asking Garth, "What'cha doin' tomorrow?" The Heaton's, owners-operators of the Bar Ten Ranch since 1916, were in the business of wrangling river runners out of the canyon on the Whitmore Trail by mule. It was then and there that Garth deepened his connection to the canyon and began his association with the river running community. In the beginning, the work involved riding trail bringing river runners and their gear to the north side of the canyon where the

Bar Ten Ranch is located. In 1986 however, the Heaton's switched to a helicopter operation replacing the mule rides out of the canyon with the faster (but noisier) choppers. Garth was never opposed to trying a different line of work—as long as it came his way he figured that's what the lord wanted him to do. Perhaps he just couldn't resist the lure of flying to work every morning. For the next thirty years Garth helped would-be (and often scared) flyers get comfortable with the idea of ending their week-long river trip in a mere eight minutes.

The helicopter operation in Grand Canyon requires precise weight and balance information so that pilots will not become overloaded in the thin air of an Arizona Strip summer. Making safe descents and ascents in and out of the canyon is a must. Not wanting to waste fuel by having the pilots disembark to obtain this information, someone else was needed to collect it prior to embarkation. It's a well-choreographed dance with incoming Lower Gorge passengers flying to the helipad after a night of BBQ, Western song, and a night's sleep in a replica of a Conestoga wagon. The incoming passengers are then replaced at the beach with those who just completed the upper 187 miles. The exchange normally lasts about between three to four minutes, including the off-and-on-loading of gear.

Obtaining the weight of everyone's gear and personal weight was Garth's responsibility and what led to him to interacting, by his own estimate, with between 250,000 and 500,000 river runners, or one-quarter to half-a-million! (A quick calculation suggests this may be a huge Arizona Strip exaggeration). Some passengers of course, feeling the effects that the plentiful and sumptuous river fare had on their waistlines, were loath to reveal their weight. Some were loath to reveal their pre-trip weight. Garth was not one to suffer incomplete information and devised a method early-on in his helipad career to not only obtain the vital

information but cause the frightened parents or reluctant spouses to smile a bit before climbing into the powerful and noisy whirly-bird. Garth squeezed and cajoled the tightly held information of their true weight by tipping back his well-worn hat and reciting this famous line to them: "You lie, you die!" It worked—information obtained! Skittish flyers now laughing! The saying is one of the best-known to motor boatmen, helicopter pilots, and river guests throughout the Canyon.

The obituary submitted by Hughes Mortuary in St. George further states:

"Garth loved to hunt, explore on ATV's and cut and haul firewood. He loved Diet Coke, black licorice and making people laugh. His easy nature, quick and genuine smile, and fantastic stories of adventure were sure to delight all who spent time with this charismatic and genuine legend. He lived a life that was 'simply marvelous' as long as he didn't have to eat marshmallows or black olives, and he was always happiest when spending

time with those he loved on the Arizona Strip. Whether punching cows, hauling wood, or just taking in the vistas, he always wanted to be working and playing in the land of his heritage."

Eli Aller, a river guide with Arizona River Runners from 1991 to 2000, wrote after Garth's "soft retirement" from the helipad in 2016, a warm tribute, *"It was always a pleasure to see Garth at the Helipad, to hear his stories and jokes. What a great person. I hope you enjoy your free time. Cheers Garth."*

Other tributes for river runners who knew and loved Garth can be found on the video made from Western Rivers Expeditions.

Garth is buried in the Mt. Trumbull Cemetery, on the Arizona Strip landscape he cherished and loved. He always wanted to be remembered as "one of the good old boys" and was quoted as saying, "I just find myself happy with the simple things."

Garth is survived by his loving wife, Louise Ditmore Bundy, his seven children, Robert (Beth) Bundy, Russell Bundy, Mona (RJ) Trappett, Camellia

(Alan) Larrañaga, Belinda (Shaun) Jaggi, Penny Sansom, and Anilee (Nathan) Adams, many grandchildren and great grandchildren whom he cherished, and his five siblings, Lavell Hardy, Alice Laub, Merna Iverson, Nyla Jean Phillips, and Steven Bundy. He is preceded in death by his parents and his son-in-law, Jason Turner (Camellia). They loved each other through all of the hard times that ranch work involves.

One wonders if on his embarkation to the promised land if Garth was asked his weight. The question would have likely engendered the wry laugh for which he was known. "You lie, you die!"

Watch a loving tribute and oral interview with Garth made by the folks at Western River Expeditions at: www.youtube.com/watch?v=uCrIrl7LBS2M.

Wayne Ranney

Editorial Apology

Shit happens, and sometimes it is someone's fault. Our apologies to contributor "Edward Out," for missing the fact that part of the middle of his story was hidden under a photograph.

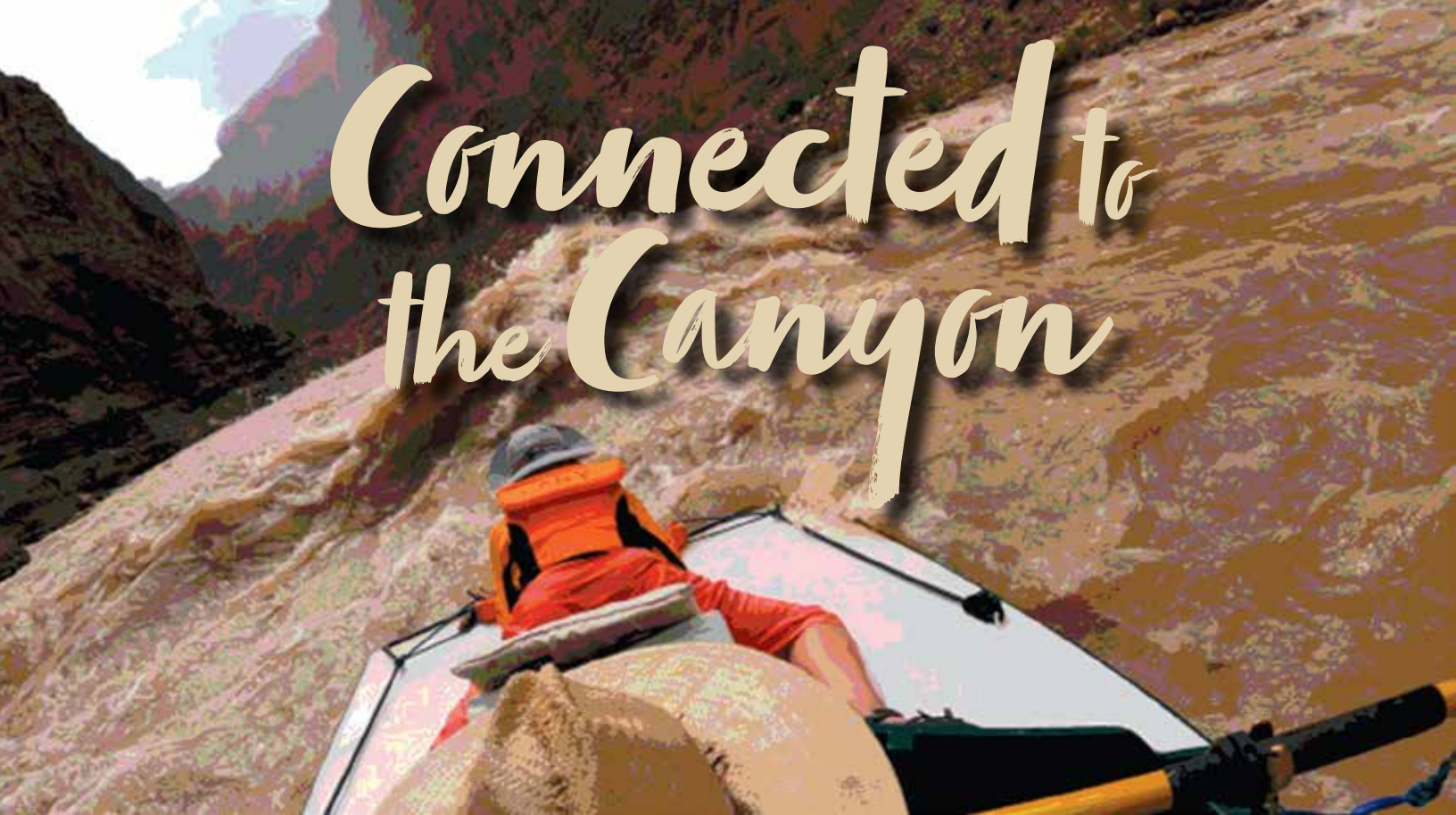
So, we have provided the full article for your reading pleasure on the GCRG website. Just go to: gcr.org/bqr.php and find out what you missed!

Mary Williams (for the mistake)
Kat Spillman & Lynn Hamilton (for not noticing ;)





Connected to the Canyon



The bright yellow rays of sunlight glide smoothly across the still surface of the caffè latte colored water. The images of earth toned canyon walls that tower above, reflect spectacular shadowy images that give the muddy water a bit of visual interest, not that you need it. One only needs to glance upward to see geologic wonders that span billions of years and a tumultuous history. Large inland lakes came and went, volcanic lava oozed and cooled into intricate patterns, tectonic plates bumped, slid and shifted over one another. Later when the Colorado river was born, erosion happened, the Grand Canyon was formed, and now here I was rafting it! This was a bucket list adventure, and I was taking it all in, savoring every precious sensory offering.

The rhythmic sound of the rowing lulling me into the tranquility of the moment. A dull plunk of an oar as it enters the water, a perfectly timed swish of water, a few droplets of water as the oar moves back into position before the cycle of sounds begins again. Periodically it is punctuated with chirping birds in

the morning or the accompaniment of cicadas in the afternoon. The heat from the canyon walls radiates out in piercing waves that hit and penetrate my skin to my core. It is hot as the sun beats down upon our cataract boat. It continues in this serenity until it stops. There is a rumble of a rapid in the distance. Even if you could not hear it, you could see it in the water. The ripples are becoming more frequent, changing the dullness of the water. The more it ripples, the more it shimmers catching the sunlight in its crests. As we draw closer the ripples grow not only in number but in size. It swells from underneath the river depths. Great power lurks underneath, and it is rising to the surface, seemingly converging toward the center of the rapid that lies before me. The apex of what appears to me to be the triangle of my growing anticipation. The latte-colored liquid brings forth its foam. It rises to the top of the ripples as they turn to waves, growing taller, louder, frothier as they speed toward the tongue of the rapid, reinforced by a cacophony

of growing torrents behind them. It pushes in with more force more volume, more boat jostling motion.

I am now low in the water splayed out in a frog like position, prone atop a cataract type of boat called the *Sandra*. The *Sandra* is part of the history of this canyon and today it is my transport through the canyon's very lifeblood, rowed and piloted by its builder's and designer's very own grandson, Greg. He tells me that this vantage point that I find myself in is called fish-eyeing. It is an accurate description as my face is at most two feet from the surface of the water, water that is quickly approaching the tongue of the rapid. There is no safe distance, no buffer zone. I am now practically enveloped in this rapid. There is no turning back! The temperature is dropping, my focus narrowing, my heart is beating in my throat. The coolness of the water continues to lower. My heart racing as I anticipate what is to come, still I feel the smile spreading across my face. It is drawing closer, and still closer. Even the smell of the river changes as we are drawn into the tongue. The droplets of water

atomizing, making it smell, what I can only describe as fresh.

“Push into the waves.” Greg instructs me.

I acquiesce desiring to be a compliant passenger. I desire to survive. I grip the rope handles tightly with each hand. We plunge in. The waves pummel us from every side shoving and tossing us in what now feels like a toy boat. The waves wash cold fifty-degree water over me. I am shocked and exhilarated simultaneously. I scream in delight as a torrent comes crashing across the deck and slaps me in the face. My mouth fills with water. I learn my lesson and time my screams between the surges. Greg has a plan, and the *Sandra* rides a line through the rapids. She soars up and over one side of what appears to be a mountain of water before me and then tumbles down the opposite side. It feels like I am jumping a horse. As we approach each swell coming toward us, I lean in across the deck and we rise above the wall of water, I slide back as we land or rather plunge down the back of it. Sometimes the tops aren't completely cleared, and the foamy crests pummel my face. My squeals are drowned once again. I spit, laugh and relearn my lesson. The lesson of timing my audible vocal outbursts with the onslaught of the strong and fast-moving flow of liquid that seems to be aimed at my face. Then the glorious cycle begins again.

This is an exhilaratingly joyful experience. It is a kinesthetic overload as the *Sandra* soars, tumbles, and plows through this lifeblood of the southwest. I as her passenger am for a short precious time, part of the rapid, part of the river. I am part of something that is powerful and life giving. I feel connected to this grandest of canyons, connected to the mighty Colorado river. Rafting the Grand Canyon on a piece of living history called the *Sandra*.

Monique Davidson

These Days

Chasing beauty and truth
They seem to come one without the other
So often these days.
Or in small discrete packages—
Single glistening drops, so far
From the Grand Drama.
My heart swells at the passion and glory of the rushing river.
Aches at the paltriness of our
Institutional arrangements
Surrounding the water of the same.

Titillated by the sensuality of a
Brand new day,
The utter loveliness of sky and canyon and water,
Or lemon sunshine hanging over the beach at dawn—
Each used to draw me through it to the light, the air,
the space that held them all together.
A spider web of beauty leading to—at the center—a
space that meant “faith.”
Fresh air was itself beauty and faith, breathed in.
Our love for fresh air the assurance of what's shared, at the core.

It used to be that we damaged the skies, the forests, the rivers.
These, we insisted, were easy mistakes.
We were young, as a collective. Our progress suffered some mishaps.

But now—
We push on.
That lemon sunlight grows thick with wildfire smoke.
The center, they say, it doesn't hold.
My small dewdrops of beauty
Dangle in the air—leading nowhere.

Is it that we are ready
For a new truth,
A new beauty.
What does beauty look like that isn't what we've seen before?
The music whose rhythm I've never heard.
The dance that keeps on spinning, the plot we've never thought of.
Is it voices that murmur, like drops of rain, and then
Roar—like the 1000-year flood?

Jocelyn Gibbon
June, 2016



Lake Powell Calculations + Conversions

Inspired by a calculation that George Steck made long ago, I started thinking of ways of visualizing Lake Powell's evaporation rate, siltation rate and water releases through the dam.

The Evaporation Rate

George pointed out that the Bureau of Reclamation claimed that a full Lake Powell lost 675,000 acre feet of water to evaporation per year. Its full pool area is 161,000 acres, indicating that about 4.2 feet of water is lost to evaporation per year. *This means that when the lake is full an average of almost 1,000 cubic feet of water is lost to evaporation each second.* (675,000 acre feet x 43,560 square feet per acre divided by 31,536,000 seconds per year = 932 cubic feet per second.)

Lake Powell's Volume

The full volume of Lake Powell is now about 25 million acre feet (at

least a couple of million acre feet has already been lost to siltation in the past sixty years). I am incapable of visualizing 25 million acre feet but find it comprehensible if acre feet are converted to cubic miles. A cubic mile is 5,280 x 5,280 x 5,280 cubic feet = 147,197,952,000 cubic feet. Lake Powell with 25 million acre feet in volume holds 1,890,000,000,000 cubic feet of water (25 million x 43,560) which converts to 7.4 cubic miles of water in Lake Powell when it is full (1,890,000,000,000 divided by 147,197,952,000). (For comparison, somewhere around 35 cubic miles of petroleum have been pumped out of the earth, most of it later burned, in the last 150 years.)

Lake Powell Siltation Rate

Bureau of Reclamation measurements indicate that 30,000 to 37,000 acre feet of silt accumulates in Lake Powell during an average year. Using 35,000 acre feet

per year translates to 1,524,600,000 cubic feet of silt accumulation per year (35,000 x 43,560). *That is about enough silt accumulation to cover one-fifth of the lake surface with one foot of silt each year* (1,524,600,000 square feet divided by 27,878,400 square feet per square mile = 55 square miles of the lake's 266 square miles). *Or another way of looking at it, the silt accumulation rate is the equivalent of an average of 10,000 15-cubic-yard dump trucks dumping silt into Lake Powell each day.* (1,524,600,000 cubic feet per year divided by 365 = 4,176,986 cubic feet per day = 154,703 cubic yards per day or 10,000 trucks carrying a little over 15 cubic yards per truck. *This rate also translates into about 48 cubic feet of silt gathering in Lake Powell per second* (4,176,986 cubic feet per day divided by 86,400 seconds per day = 48 cubic feet per second).



Daily Water Release Through the Dam Visualized

Estimating the cross-section of Lake Powell immediately upstream from the dam allows a visualization of the lake volume that passes through the dam when the release rate is

a constant 10,000 cubic feet per second. *Assuming a full lake, the equivalent of 1,700 feet of the lake immediately upstream of the dam would be needed to supply a full day of 10,000-cubic-feet-per-second releases.*

Silt Accumulation Visualized

Silt accumulates in lakes mostly where tributary streams and rivers drop their load of silt as they enter the calm waters of the lakes. It is instructive to visualize how much silt accumulates in Lake Powell in a year if the laws of physics were different at Lake Powell. For instance, if all the lake's silt were to immediately travel downstream to cling to the upstream face of the dam, how far would those vertical silt beds extend upstream in a year if the lake were full? *They would extend about 3,000 feet upstream from the dam after a year.* (Of course, the rate of upstream growth of the silt would slow in later years because the lake's width greatly increases upstream from the dam.)

Some other interesting figures supplied by BuRec include the following:

Hoover Dam is only sixteen feet taller than Glen Canyon Dam. But it is located in a narrower canyon, making Hoover Dam appear to be much taller than Glen Canyon Dam. Also,



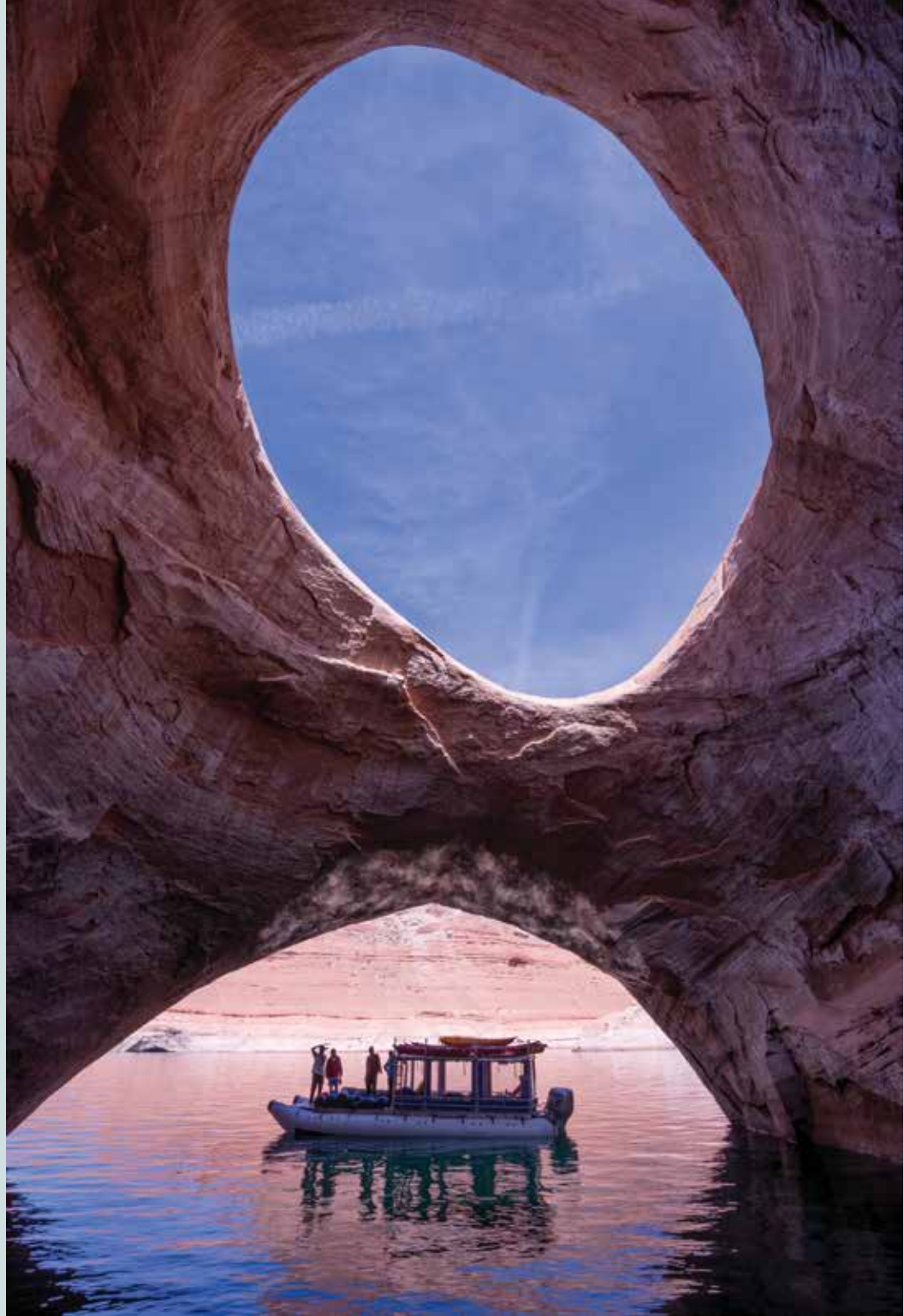
the radius of curvature of the axis of the two dams is much different—500 feet for Hoover, 900 feet for Glen Canyon. Finally, Hoover Dam is almost as thick at its base (660 feet) as it is tall (726 feet) while Glen Canyon Dam's thickness is only about half of Hoover's.

Measurements made several decades ago suggest that Lake Powell will be brimming with silt in about 700 years. (And it won't be of much use for water storage long before that time.)

Lake Powell is currently entering an era of record low surface levels. As I write this in early July it has fallen below elevation 3560. During the coming winter and early spring it may drop to elevation 3540 or below. The dam's turbine intakes are located at elevation 3470. (The minimum water surface elevation for power generation is 3490.) The four river outlet intakes (the dam's lowest water release intakes) are located at elevation 3374 (about 30 feet above the estimated 100-year silt level). Although there's a huge, 180-foot difference between today's surface elevation and the four river outlet intakes, another few years of drought could produce such a drop since two thirds of the lake's full volume are already missing. A lake level at the river outlet intakes would leave only a "dead pool" of water that cannot be released because the river diversion tunnels used while the dam was under construction were permanently plugged with concrete. Outflows into Grand Canyon would then be equal to Lake Powell's inflows less evaporation if the drought continued. (It may soon be necessary to put more boats on the lake to keep it a few inches higher!)

Expansion Speed and Down-cutting

Here's another wildcard fact possessing only the most tenuous connection to Grand Canyon. It concerns the expansion of the universe discovered almost 100 years ago by Edwin Powell (!) Hubble. To



measure the expansion rate of the universe, astronomers must utilize huge astronomical distances such as those between our Milky Way Galaxy and other galaxies. The speed of expansion must be keyed to the length of the segment of space being measured because all of space is expanding—the greater the reference distance being measured, the greater the expansion speed.

Historically, the standard reference distance has been a million parsecs which equals 3.26 million light-years. (For comparison, the Andromeda Galaxy is 2.3 million light-years away.) This distance of 3.26 million light-years produces an expansion speed of about 74 kilometers (49 miles) per second. Although 49 miles per second is a breathtaking expansion speed,

the standard segment of space is equally impressive. (One light-year measures about six trillion miles, thus 3.26 million light-years seems like a monstrous distance...until it is compared to the apparent 27.6 billion light-year diameter of the visible universe.*) So, an expansion speed of 49 miles per second seems lightning fast (our fastest spaceships can't reach this speed) until the reference distance is reduced to an Earth-like scale of, say, 1,000 miles. *Using a comprehensible 1,000 miles as the reference distance the expansion speed becomes about one-eighth of a millimeter PER YEAR. And this is darn close to the incision rate of the Colorado River in Grand Canyon. Who knew?*

*Because the expansion of the universe has continued since light departed from the most distant galaxies that astronomers have spotted, the actual current radius of the universe is believed to be about 46 billion light-years or 92 billion light-years in diameter. And even this may be a gross underestimate.

Gary Ladd

Photos: Gary Ladd

Blacktail Canyon

EACH MORNING I WAKE UP
SEARCHING FOR ANSWERS
TO QUESTIONS WHOSE WORDS I DON'T EVEN KNOW.
BEFORE I TURN ON THE SCREEN,
ANSWER THE QUERY, SHIFT
THE STRATEGY, WRITE THE LIST
I WANT TO GROUND MYSELF—AGAIN—
WHERE AM I? WHERE SHOULD I BE?
WHO? HOW? WHY? WHAT THEN?

BUT DEEP IN THE VAST CANYON
DESERT GLARE DISAPPEARS INTO COOL SHADE AS YOU ENTER
THIS ANCIENT SLOT
AND THE LIGHT OF THE SKY IS A SILENT, STEADY SLIVER.
BILLION-YEAR-OLD ROCK AGAINST MY BACK,
SANDSTONE LEDGES JUT ABOVE ME, LOOMING, INTIMATE;
THEIR TEXTURE SO EXACT. SO PARTICULAR, GRAINS OF QUARTZ IN THE
BLUE LIGHT;
A LIZARD WATCHES.
THE LIGHT SHIFTS. EVER SO SLOWLY, ITS CLEAR QUIET EDGE MORPHS
AND CREEPS AGAINST SHADOW.
THE TRILL OF A WREN, A FOOTSTEP ON STONES.
THE TRICKLING OF WATER, WHOSE RIVULET I KNOW RUNS DARK AND
ALGAE-STAINED DEEP IN THE SHADOWS.

IT'S A JOURNEY TO BLACKTAIL—
DOWN AND THROUGH AND IN.
BUT HERE THE ANSWERS JUST COME,
TO QUESTIONS, EVEN, WHOSE WORDS I DON'T KNOW.

MY LOST FRIEND'S LAUGHING EYES AS HER BODY FAILS HER;
MY SISTER'S CHILD'S TODDLER-HAND TUGGING AT HERS, LIFTING HER UP
AND PULLING HER DOWN;
THIS PATH WE WALK TOGETHER, MY LOVE.

Jocelyn Gibbon
June, 2018

“As a scientist, as an archeologist, there’s things we learn in school; there’s things we learn in books

••• Jason Nez •••

The following is an edited version of an interview of Jason Nez by Haley Johnson that took place during the 2019 Grand Canyon History Symposium. The transcript of the full interview can be read on the GCHS website (grandcanyonhistory.org) along with a link to the video of the interview. At the time of the interview, Jason was working as a firefighter, specializing in cultural resource issues on fires. Jason is now a full-time archaeologist at Grand Canyon National Park.

This article was first published in the O! Pioneer and is reprinted with permission of the Grand Canyon Historical Society.

Ya’ah’t’eh. My name is Jason Nez. I’m Navajo and my clans are of the Zuni Edgewater, born for the Salt Clan. My mother’s father is a Tangle people, and my father’s father is the Mexican people. And that’s just how we introduce ourselves.

I grew up east of here. South of Tuba City, this place called Coal Mine

Mesa, and that’s where I spent a lot of time with my grandparents, my aunts. Aunts and uncles and different people helped raise me, and I’m still out there whenever I can. We have cattle. We have horses. I’ve got a big fat horse; a donkey. We’re out just working with them whenever we have funding.

My background is actually in environmental science. I graduated from Northern Arizona University, and there was no work. I had an environmental science degree. There was nothing going on anywhere, and one of my professors, she says: “You know, there’s a job opening at Navajo National Monument. You should check it out.” And those were the old days, where you could go in, do an interview, and get hired that day at that unit; none of this six-month stuff. And I started there, and I just loved it. I started as a Navajo, strictly not knowing what I was getting into, and over time I realized our cultural connections, our

stories, to these prehistoric people. And then my wariness, I guess, fear, I guess is a word I would use, sort of dissipated. And once I realized these connections, I was stronger. I was tougher. I walked around and learned things, and it just sort of turned me into what I am today, able to walk around in these places without fear, without those apprehensions.

I was a backcountry interper ranger over twenty years ago at Navajo National Monument, and I was stationed out at Keet Seel. And that’s where I learned a lot of my academic archeology, was just being out there for two weeks at a time, reading all the archeology literature we had there at the monument. And then I started working for my tribe as a shovel monkey, just out excavating. And then starting to apply my science background in writing reports, writing site descriptions and all that, and then I got into surveying, more excavations, and eventually I was managing the field projects and managing the lab in Flagstaff. And then I started working for the Museum of Northern Arizona, and then came here to Grand Canyon.



about history, time; and things I've learned as a Native person through our own oral histories."

Been here since 2011, with one season with the Forest Service.

Right now, I'm just a regular firefighter, but I also cover a lot of cultural resource issues on fires. So, what we want to do is, when there is a wildfire, we want to plan out how we're going to suppress it, whether we're going to let it burn and do its natural thing...And while we're doing that, we're also assessing the possible impacts to cultural resources. Because everywhere we go here on the South Rim, into the Coconino Forest, into the Kaibab Forest, there's people that have been there for 10,000 years. We have lithic scatters, rock art panels. We have old cabins. And the ones we know about, we're making those determinations. Is it fire sensitive? Is it going to be damaged? What can we do? What should we do? And can we even do it? Is the fire running toward it? And we try to figure all these things out, and then go out and try to protect or mitigate damage to our sites that are out there. So, it's a lot of technological work using GIS. It's a lot of field experience. And a lot of fire experience. And we have a great team here at the canyon and in the forest that were able to come together—put all these minds together and come up with really good plans for taking care of our sites out there.

I think that, as a Native person working with cultural resources, it's a way to connect to things. We walk around, we're looking across the landscape, and, oftentimes, we don't pay attention to what we're—we're just out walking. We're enjoying the scenery. We're enjoying the sounds. But, growing up on the reservation, I'm always looking down. I'm looking for tracks. I'm looking for where the sheep went. I'm looking for who's ahead of me and what they're up to. And as an adult archeologist, I'm looking down; I'm like: "Oh, here's a

flake. Oh, here's another flake. Over here's a projectile point. Over here's some pottery sherds. Oh, here's a rock art panel. And here's a small pueblo out here." And to me, it's like this innate nature to find it. I jokingly call it The Force, but I legitimately think sometimes that there's something out there. I'm walking around, and it's like: "Come here! Come here! Come here! Come here!" And I go over there, and I think that's just a part of allowing myself to hear what nature has to tell me. Allowing myself to have learned that language of history and science, and allowing it to communicate this to me. That's what excites me.

As a scientist, as an archeologist, there's things we learn in school; there's things we learn in books about history, time; and things I've learned as a Native person through our own oral histories. And one of the things that we talk about is Clovis—people that were hunting mastodons. People that were, according to our scientific way, they came down about 13,000 years ago. And these are sort of things that we don't really see. We don't really—from a personal level, we don't quite connect. And I was out on the Wildcat and the Fuller Fire two years ago doing some post-burn-effects monitoring for the North Kaibab, and we're standing out there, and this place burned. It was fine white ash. And I was out there with my friend and coworker, and I was like: "OK. I want you to just imagine everything you learned at NAU—the university. Imagine it in a big box. Now get rid of it. I'm going to show you how we do it." So, we're out there. There's still trees burning up there. We're in a good, safe spot. And I was like: "Do you see this? Hold it out [flexed hand held out in front], and when it gets warm, we're going to go over there." So, we're standing there, and I was like: "Do you feel it? Do you feel it?

Let's go over there." And we went over there, and there was a L-shaped pueblo that was exposed by the fire. And my coworker, he was just like: "Oh my god! Did you know that was there?" I said: "Nope. Never been here before." And I was telling him: "Now, I want you to focus. I want you to just let The Force flow." And we're standing there, and I was like: "Stop! Look at your feet!" And he looked down at his boot, and there was something sticking out, and I just reached over, and I was like: "Clovis point." And it was a Clovis point! So, it's one of those ways that you really connect to landscapes and history when you can touch those things, when you know they're there, and when you know the story, the scientific and the cultural stories, behind it. And those stories are out there! And that's why I'm out there.

When we look at the history of most parks, it's not always the story of the we. Sometimes there's a dark history out there, and in modern times, we're trying to work past it. We're trying to work together and manage these places properly. And when we think about the history of somewhere like Grand Canyon, there's 13,000 years of Native American occupation and use. And that's not just people living here, it's people managing. We think of management as: "We have this plan, we're going to write it out, and we're going to do it." But from a Native perspective, these things are the ceremonies we do for hunting. During this time of year, we're going to hunt over here, and what that does, is it helps maintain populations and it helps move animals across the landscape. When we go into the forest to gather pinyon nuts, there's also the benefit of all those people in the forest who are doing fuel reductions, who are building campfires and were utilizing resources in those areas. So, in

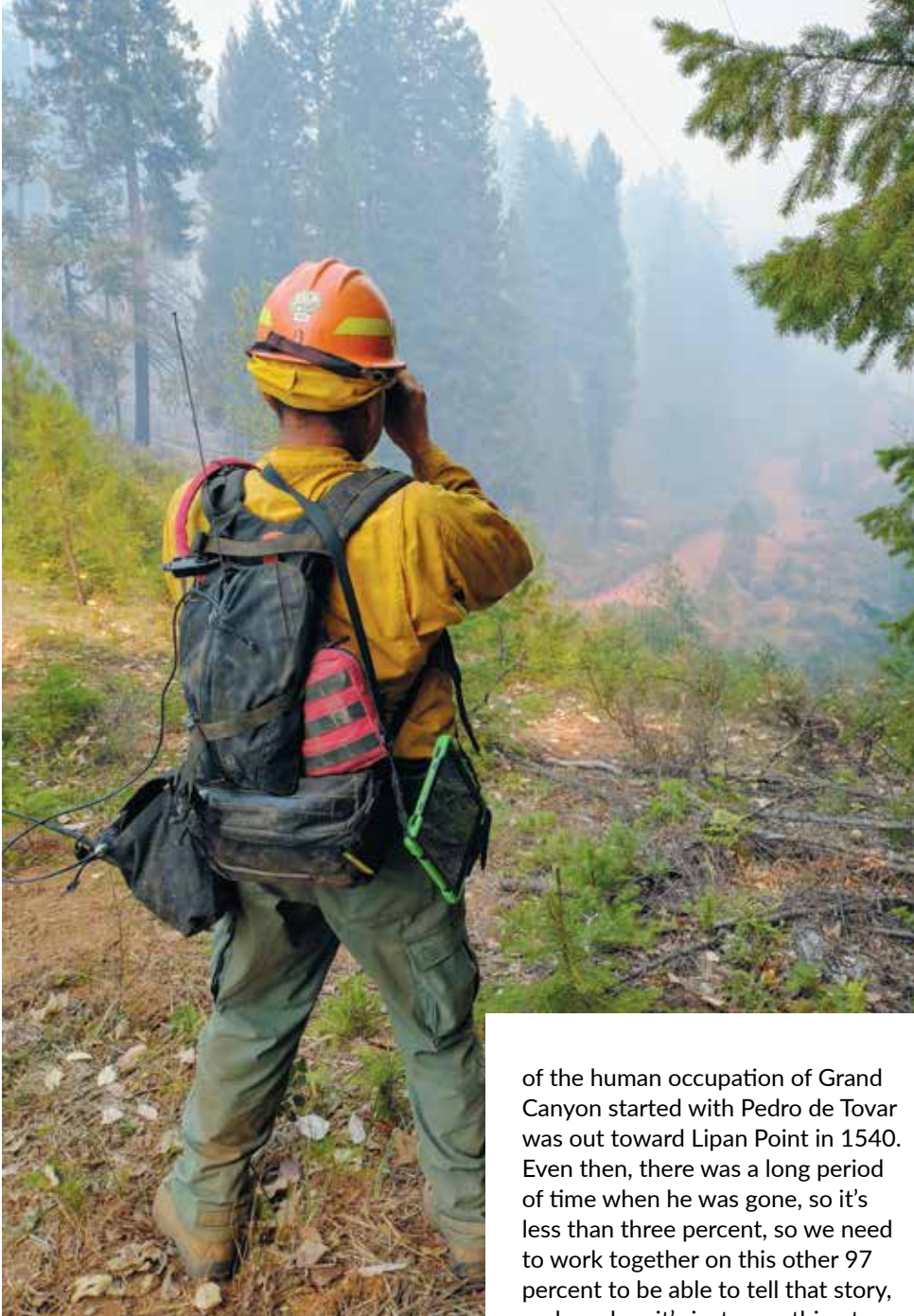


Photo: Harrison Friedman

that way, it is management. We're encouraging animals to move, we're moving plants, seeds, sometimes not on purpose, across the landscape, but we are changing these things, mostly for the better, and I think that oftentimes we tend to forget there's that long period of occupation when we were doing that.

I just think that there's a bigger story out there that we're getting at. We're working together on telling it, but we have to always remember that this has only been three percent

of the human occupation of Grand Canyon started with Pedro de Tovar was out toward Lipan Point in 1540. Even then, there was a long period of time when he was gone, so it's less than three percent, so we need to work together on this other 97 percent to be able to tell that story, and maybe—it's just something to work towards. It's a goal, I think.

We know there's a story out there, but we don't hear it. The park, and parks in general, are working on better relationships with the tribes—the former occupants of these lands. We have the Desert View working with local craftsmen to showcase crafts and arts and all that and a little bit of history, and those are great steps forward. I can see those things expanding and going throughout the park service, not just this park. I think that these are good things that are happening with or without me. That's

And I have neighbors. I have family. I have different people around me that I have to be in balance with them. So, looking at all these directions—backwards, forwards, sideways, right, left, I also have to be in balance with above. I guess religion is above us, too, and those are things I have to be in balance with. Air, environmental quality. You have to be in balance with water and earth beneath me. So, considering all these things, I'm always trying to balance them out. I'm always trying to be careful where I'm at, and just be aware of what's around me and how I'm affecting it. And that's sort of—I think a lot of us strive for it, it just has a different name, a different label.

It's my belief that the more I can teach other archeologists, the more I can teach other coworkers, the more I can teach other firefighters, the more they'll be able to see what I'm seeing. And when people can see what I'm seeing, they're going to feel how I feel about resources. They are going to love and care for these places and these resources and the people that identify them. So there's a big picture plan, I guess, for me being here, saying these things and educating people in the places I go, on the different fires, and when I talk to school groups and different organizations, it's like I'm trying to help people realize that those connections are there, we've just got to make them.

Edited by Jack Reid



WHEN ONE DOOR CLOSES, ANOTHER ONE OPENS: A POSITIVE FUTURE FOR THE HISTORIC BOATS OF GRAND CANYON

As the Water Rat exclaimed to the Mole in Kenneth Grahame's classic *The Wind in the Willows*, "Believe me, my young friend, there is *nothing*—absolutely nothing—half so much worth doing as simply messing about in boats." This endearing quote may be one of the biggest clichés in literature, however as anyone who has been lucky enough to run the Colorado River through Grand Canyon can attest, this sentiment happens to be entirely true. Another thing we can enthusiastically agree on—the fascinating history of river running on the Colorado River is best told through the historic boats themselves.

As many of you know, there are nineteen historic river craft in Grand Canyon National Park's outstanding collection, the oldest dating from 1909. A few of these seminal boats are on display

throughout the park, yet there is no permanent venue on the South Rim that connects visitors to the Colorado River and over one hundred years of colorful river running history. The majority of the historic boats, while conserved, sit in a warehouse as part of the Grand Canyon Museum Collection. You can make an appointment to see the boats (I highly recommend it!), but the bottom line is, they need a proper venue to really shine. These historic craft speak volumes about the evolution of boat building, river running techniques, and the adventurous spirit of the men and women who tackled the Colorado River, a fascinating story that underlies today's river experience.

In 2011, the Grand Canyon River Outfitters Association invited Grand Canyon River Guides, the Grand Canyon

Private Boaters' Association, and the Grand Canyon River Runners Association to join with them to launch the Grand Canyon River Heritage Coalition (GCRHC). Over the ensuing years, as a separate 501(c)(3) nonprofit organization, the Grand Canyon River Heritage Coalition worked diligently to advocate and provide support for the development of a river heritage museum at the South Rim of Grand Canyon National Park. Suffice it to say that if our vision could have been accomplished, our GCRHC team would have been at the forefront, and we certainly employed every conceivable strategy towards that end.

In 2020, GCRHC realized that the time had come for the locus of this initiative to shift to where it naturally belongs, with the Grand Canyon Conservancy (GCC), the park's official private

sector friends group and authorized fundraising partner. Working hand-in-hand with our partners at GCC, we developed and executed a Memorandum of Understanding (MOU) as part of GCRHC's plan of dissolution. Key elements of the MOU include:

- 1) The transfer of 100 percent of GCRHC assets into a restricted-use Historic Boat Collection Fund at the Grand Canyon Conservancy (previously established by a substantial gift from the estate of GCRHC founding board member, Phil Smith, a river running legend in his own right).
- 2) Within one calendar year of receipt of the GCRHC funds, GCC will make an additional contribution to its Historic Boat Collection Fund, equal to 50% of the GCRHC donation, or \$50,000 (whichever is less).
- 3) The funds, at GCC's discretion, will be used to further the Historic Boat Fund's established purpose with an emphasis on the potential development of an interpretive venue able to display most or all of the Grand Canyon historic boat collection, where the collection can be interpreted in its entirety for the general public's ongoing benefit, and that is located in Grand Canyon National Park's South Rim Village.
- 4) A comprehensive "Historic Boat Collection Report" will be generated annually by GCC to track the present value of the fund, all related activities and expenditures.

One of the great honors of my professional career was the gift of working closely with the officers and directors of GCRHC over its lifespan: Gaylord



View of the historic wooden boat, the Marble, in the museum collection storage area.
Photo courtesy NPS

Staveley (owner of Canyoneers, river running legend, and GCRHC president 2011–2014, transitioning to director), Mark Grisham (former Executive Director of GCROA), Mari Carlos (GCRRA), Richard Quartaroli (Special Collections Librarian Emeritus, NAU Cline Library), Richard Martin (GCPBA), Rob Arnberger (former GCNP Superintendent), Phil Smith (explorer, river runner, environmentalist) and Brad Dimock (boat-builder, river runner, author). What a dream team. I am so profoundly grateful for all of their time, energy, and passion given freely towards this worthy goal. Deeply valued colleagues all.

The next chapter is just beginning and there is cause for optimism—an enthusiastic Superintendent, a signed Final Strategic Plan for Grand Canyon National Park that includes an emphasis on adaptive reuse of the Powerhouse Area as a visitor campus, and the anticipated infusion of funding through the Great American Outdoors Act. As the Grand Canyon Conservancy states on their website,

"...the river community and park leadership hope to one day present a permanent venue for the display and interpretation of the rich and exciting history of boating on the Colorado River for visitors."

Keeping this vision alive is up to all of us now—as individuals and river stakeholders. How can you help support a positive interpretive future for the historic boats of Grand Canyon? Please consider a tax-deductible online donation to the Grand Canyon Conservancy at grandcanyon.org (Note: make sure to put "Historic Boat Collection Fund" in the Donation Comments section of the form). Thank you for your support.

Here's to the historic boats of Grand Canyon!

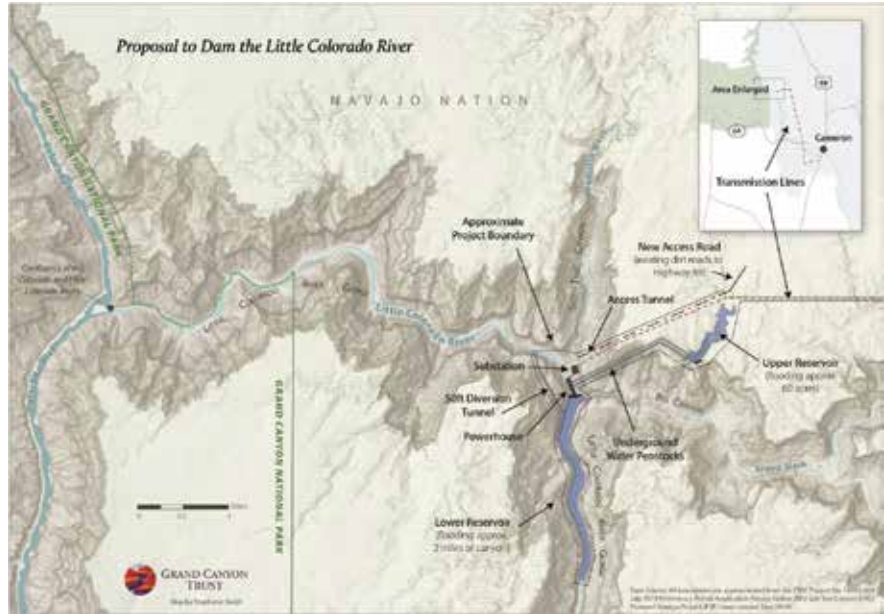
Lynn Hamilton
GCRHC VP 2011–2014,
GCRHC President 2015–2020

LITTLE COLORADO RIVER DAM DEVELOPER SURRENDERS TWO OF THREE DAM PROPOSALS

Good news! After two years of tireless advocacy led by the Navajo Nation, Hopi Tribe, Hualapai Tribe, and Save the Confluence organizers, a would-be hydroelectric dam developer has requested the cancellation of two preliminary permits for dams on the lower Little Colorado River above the confluence with the Colorado River inside the Grand Canyon.

Pumped Hydro Storage LLC sent two letters to the Federal Energy Regulatory Commission (FERC) requesting the permits for its Little Colorado River and Salt Trail Canyon proposals be surrendered, citing strong opposition from the Navajo Nation, environmentalists, and others, as well as investment risks. This news comes two years after the developer first proposed the projects on Navajo Nation land in a region of deep cultural importance to many tribes.

Despite Native community opposition to the two dam proposals and interventions and objections from the Navajo Nation, the Hopi Tribe, and the Hualapai Tribe, conservation organizations, and the boating community, FERC awarded preliminary permits for both the Little Colorado River and Salt Trail Canyon dam proposals. The developer was not required to get consent from the Navajo Nation or even consult with tribes, underscoring deep flaws in the preliminary permitting process. Though the application required the developer to list all affected tribes, only one tribe was listed, Navajo Nation. This is a disservice to at least ten other tribes with affiliations to the Grand Canyon and



Little Colorado River, many of which consider the Little Colorado River a Traditional Cultural Property eligible for protection.

A RIVER TOO FRAGILE FOR DAMS

Had these hydroelectric dam proposals moved forward, the consequences on this arid landscape would have been severe. The lower Little Colorado River flows perennially into the Colorado River in the Grand Canyon, and its warm turquoise-blue waters shelter the endangered humpback chub when it is spawning.

The lower Little Colorado River is a spiritual place best left untouched by development, as grassroots community members and tribes have requested. It is home to the Hopi place of emergence along with innumerable other cultural sites. Upstream dams could alter this place of reverence and beauty.

TWO DOWN, ONE MORE DAM TO GO

Unfortunately, the developer's request to surrender these two permits is a reminder of the work ahead. The developer is still waiting to hear back on a preliminary permit for the Big Canyon dam proposal on a tributary to the Little Colorado River just three miles from the confluence. The Big Canyon dam remains the developer's priority—and our biggest concern. The Big Canyon dam proposal, which is also on Navajo Nation land and opposed by many tribes, would require pumping groundwater from the same aquifer that feeds the Little Colorado River and its turquoise waters. Big Canyon happens to be a side canyon to the Little Colorado River Gorge where Navajo families herd sheep and practice a traditional lifestyle.

DROUGHT UNDERLINES THE IMPRUDENCE OF THE BIG CANYON DAM

The developer is proposing to pump about fourteen billion gallons of groundwater, plus an additional 3.2 to 4.8 billion gallons per year to make up for water lost to evaporation in order to fill the Big Canyon dam reservoirs. In total, this is the equivalent of filling 28,000 Olympic swimming pools in an arid landscape already facing extreme drought and water restrictions. Currently, there are potable water restrictions across the Navajo Nation. It is alarming that the developer is continuing to push a proposal to pump additional groundwater to power this project in order to produce electricity for distant city centers in the middle of this drought.

It's important to note that the U.S. Fish and Wildlife Service, National Park Service, and Bureau of Indian Affairs all raised concerns about water supply, impacts to aquatic resources, and adequate tribal consultation during the 2020 comment period for the Big Canyon dam. They specifically shared concerns about the loss of sediment, sand sources, and spawning habitats if the tributary's scouring flash floods are blocked.

It is unknown when FERC will make a decision on the Big Canyon dam proposal's preliminary permit application, which, if granted, would initiate a three-year period for a feasibility study. What we do know is we will continue to stand with local communities and fight this unwanted and

inappropriate proposal tooth and nail. In the long run, the Grand Canyon Trust will partner with other organizations at the direction of Native peoples to support tribal sovereignty and the right to consent over decisions that impact Indigenous waterways and lands. For more information on the proposed Big Canyon project, visit www.grandcanyontrust.org or www.SavetheConfluence.com.

Amanda Podmore
Grand Canyon Director
Grand Canyon Trust

Back of the Boat— The Whale Foundation News Bulletin

Asking For a Friend...The 2021 river season has been rough for a lot of folks. Maybe for you directly. Almost certainly for someone you know. People are stressed out, worn down, and facing situations they've never experienced before. Some have gone through traumatic events. Some are coping by self-medicating with alcohol or in other ways that aren't working that well for them. Might be they could use a helping hand.

If a friend or coworker of yours is in a tough spot and you're not sure what you can do to help, you can give the Whale Foundation helpline a call (1-800-449-4253). That will put you in touch with one of our case managers. They'll listen to what you have to say and may have some good

insight on resources that could help or suggestions on how to help your friend help themselves. You won't be able to set up counseling for your friend—that's a step only they can take. But sometimes it helps to have a friendly, knowledgeable ear and a little professional advice.

You can also call the Whale Foundation hotline if you're a river company manager or owner facing a major incident on one of your trips. A Grand Canyon river trip has real risks, and sometimes things go wrong. The Whale Foundation is ready to help you help your guides and clients through those especially rough times. If you'd like to know more about how this can work and what the Whale Foundation has to offer, please give me a call—928-699-1752.

As always, calls to the helpline are confidential.

And, as always, I have to give a huge thank you to everyone who has helped support the Whale Foundation. You make it possible for our counselors to do the good work they do. You make our community better and stronger. And that makes this world a better place to live in. Thank you all so much!

Sam Jansen

guide profiles

Jocelyn Gibbon, Age 45

Where were you born & where did you grow up? I was born in Maine and grew up in Arlington, Virginia, outside of D.C.

Who do you work for currently (and in the past)? CanX currently—and also AzRA for about six years when I was getting started. And OARS gave me my start with a baggage boat. (I was supposed to be an assistant and the baggage boater didn't show the morning of!)

How long have you been guiding? I started in 2000, so 21 years now—but with a long hiatus in the middle to go to law school and recover from a back injury.

What kind of boat(s) do you run? Rubber rafts with oars! And I love CanX's little 14-foot paddle boat.

What are your hobbies/passions/dreams? Mmm...I feel really fortunate that I mostly get to live them. I'm a bookworm, and I like to write too—one day I'd like to write a book. I love music, and play the piano and a tiny bit of guitar and bass so that I can sing with people. I'm passionate about my work, both guiding and the water policy work I do with the rest of my time. I'm passionate about rivers, our earth, and how we live on it with each other.

Married/family/pets? I'm married to and get to live my life with Sam Jansen. It's pretty great! These days he does four trips most years and I do two of those. Being on the river together is one of my favorite things. Being at home or planning adventures together is too.

School/area of study/degrees? I was an English literature major at Williams College in Massachusetts... years later I decided to go to law school, prompted in part by my experiences guiding, and studied environmental and water law at the University of Texas School of Law. In between I took some really good poli-sci and science classes at NAU. It was crazy to go from living with my friend Kristin in Flagstaff and working as a guide, to law school in Texas, and frankly wasn't much fun. But now I'm glad I did it.

What made you start guiding? What brought you here? My family brought me on a trip when I was in high school...I met Tom Martin and Hazel Clark, who brought me on multiple winter private trips, the second for 35 days and with all kinds of wonderful Flagstaff folks. I moved to Flag, promising my mom it was just for a year, but I was hooked...It was the Canyon and the river that hooked me, along with the way of being.

Who have been your mentors and/or role models? I've learned different things from a lot of different people! Steph White told me never to go downstream without my boat. I learned a lot about rowing and guiding from Kevin Johnson and Ed Hasse (who pulled me out of the water on multiple occasions), and also learned with and from the girlfriends I started guiding with—Kristin Huisinga, Alex Elliott, Kim Fawcett, Holly Gardner. And since then have learned so much from watching and working with all of my CanX friends—including my husband, I love the way he rows a boat and leads a trip.

What do you do in the winter? Is this your primary way of earning a living or do you combine it with something else? Mostly I work really hard! I

have my own business as a water policy consultant, called Freshwater Policy Consulting. I work mainly with environmental non-profits on Arizona and Colorado River water policy issues. Right now I spend most of my time working with the Water for Arizona Coalition (EDF, American Rivers, Audubon, Western Resource Advocates, Business for Water Stewardship) on Arizona groundwater policy and Colorado River management. I am obsessed with persuading people that we need new water laws—and new institutions, culture, knowledge, and agreements to go with them. Did you know that groundwater isn't regulated or managed in most of Arizona though it feeds our rivers and is the main water supply for a lot of our communities?

What's the most memorable moment in your guiding career? Hard to say... there was the moment I realized my ankle was stuck in a gap in the raft's lacing (foot stuck under the floor) as I ran a paddle boat through the V-wave. There was the moment when on a silent float below 220 I decided I was going to go to law school and try to "find my voice." There was a lovely moment just this year where in the same spot I realized I think I've found it—just need to keep developing and using it.

What's the craziest question you've ever been asked about the canyon/river? I have actually been asked that famous one about whether we'll take out at the same place we put in.

What keeps you here? The river, the canyon, the beauty, the laughter, the rowing, the guiding...the way of living and approaching the world, with humility, curiosity, passion, drive, humor, responsibility. The other people doing the same.



Sam Jansen and Jocelyn Gibbon

Sam Jansen, Age 52

Where were you born & where did you grow up? I was born in a small town in Minnesota, but I grew up in Flagstaff. Kachina Village, actually, just outside of Flag.

Who do you work for currently (and in the past)? I've been working for CanX for more than twenty years now. Before that, I got my start rowing boats at OARS and then Mountain Travel Sobek.

How long have you been guiding? More than thirty years now. Crazy.

What kind of boat(s) do you run? At CanX we've got oar boats, sporty little 14-foot paddleboats, and we're starting to run dories. I like to mix it up among them—each craft is great in its own way. Haven't spent much time with my hand on a throttle.

What other rivers have you worked on? For most of my career I've been ridiculously fortunate, working in Grand Canyon in the spring and

fall, and heading up to Alaska in the summer. Mostly on the Alsek up there, but also the Tatshenshini and the Kongakut. The Alsek is amazing; fast and cold, with bears and wolves and glaciers and icebergs. It's like boating through the Pleistocene. I've gotten on some other rivers, too, but my heart is in the canyon and Alaska.

What are your hobbies/passions/dreams? It's fair to say I do a lot of reading and playing guitar. Acoustic guitar on the river, mostly electric at home. Been learning some woodworking, too, which is a lot of fun, and sometimes you end up building something useful. I like learning and gaining new skills. There's really no end.

Married/family/pets? I'm married to Jocelyn Gibbon, and that's just great. She guides for CanX, too, so we get to do two trips a year together. We met working on the river. Been building a good life together for about fifteen years now.

School/area of study/degrees?

In college I double-majored in Geosciences and Creative Writing. Started out at MIT, but after a couple years and way too many dollars I transferred to the U of A in Tucson. About fifteen years ago I did a year of film school. Always trying to learn new things and build a life worth living.

What made you start guiding?

In college I started working for the water resources division of the USGS and was lucky enough to get put on Grand Canyon project, studying sediment transport and deposition. Did a bunch of research river trips, which opened up a whole new world to me. A lot of those trips were with Kenton Grua and he became a friend. One day he said, "I bet you'd like rowing boats." He set me up to row baggage for OARS/Dories, and it turns out I did like it. Along with the hiking, exploring, and having fun with great people...Before too long, I quit my real job to row boats full time. I thought I'd do it for as long as it was fun and then move on to the next great thing. One day Mike Pratt, an OARS guide who also became a friend, said, "I bet you'd like Alaska." He set me up to row a boat on the Alsek. Yeah, I loved it. Hooked. So here I am, still rowing boats, because it's still fun. And there's always more to learn.

Who have been your mentors and/or role models? Kenton was my first real mentor/role model, but a lot of other guides have taught me along the way. Mike Pratt talked about structuring a trip so the folks get the best experience they can. Rachel Schmidt is always solid and on top of things but ready to laugh at any moment. So many great people. I try to steal good ideas from everybody.

What do you do in the winter? Is this your primary way of earning a living or do you combine it with something else? I've been the Executive Director

of the Whale Foundation for a couple years now. That job is set up to mesh with guiding, so currently I do it and four trips a year. It's challenging, though. As probably any guide will tell you, it's tough to do meaningful work at a job and also leave it several times a year for two weeks at a time.

What's the most memorable moment in your guiding career? Ah, the memories pile up, don't they? Every bend in the river brings something back.

What do you think your future holds? I want to have a life built of meaning, beauty, joy, and adventure. I hope that's what my future holds.

What keeps you here? Guiding gives me a chance to be the best version of myself that I can be, and to experience some of the best of life that the world has to offer. I want to keep doing it as long as I enjoy it, keep learning, and can do a good job.

What's my philosophy for guiding and leading trips? I want to help the folks experience as much Grand Canyon as they can handle. Maybe just a little bit more than that. Hiking, whitewater, hanging out in camp. Sweet weather, hard weather, time alone, time with friends. New experiences, pushing boundaries. And laughter. People get to laugh a lot on a Grand Canyon river trip, and in the end that may be the very best thing about it. We could all use more laughter in our lives.

On Rowing With Friends, and then Marrying One— After Falling in Love

In a simple sense, a river simply goes
downstream
It may not look like a more complicated thing
But like so much—spend a little time—
observe—absorb—
And the richness and complexity spread ever-
outwards.

And inwards.
And the beauty.

With an oar in your hand you touch the current.
Tugging—pushing—pulling—whispering—
roaring—sneaking up on you sideways,
backwards, slant-wise.
There are currents within currents within
currents.
Eddies—the water hits rock, or bank, backs up,
circles round.
Eddies within eddies. Micro-eddies. Under-
currents.
The gentle wind—ripples blown across deeper
swathes of moving water.

With an oar, you hold this in your hand.

Now picture a river trip:
Multiple boats.
Each with a rower, each rower with two oars.
Separate boats, separate oars, separate
hands.
The same river.
Different water.
You can't enter the same river twice,
So they say.

Now picture the river current, running
between different hands holding different
oars.
Now picture the heart current—the brain
current.
I have your back. You have mine.

A boil surges—I spin by you.
Conversation on your boat intensifies—you
gently dip your oar and miss my spin.
We watch the river, the rock walls, with one
eye—the human dialogue on our boat with
another—and with that third eye
Each other.

Keep the right distance between the boats.
Note the line, the speed, the wind—will I cover
you by nosing your stern
Will I cover you by giving you space
What worlds are being conjured on your raft in
the silence alongside
Or what games are you readying to play (water
fight?)
Are you tired
Hot
Grumpy
Telling jokes
Or in the silence or connection of divine bliss?

I have your back. You have mine.
Sometimes by guarding you at the bottom of
the rapid.
Pulling your survivors out of the water.
You, touching your hat as you glide by.
Or watching my line as you sit back to let me
proceed. Through Lava. Crystal. Hance.
I have your back. You have mine.
That's what it's like to row a boat, in the
Canyon, with friends.
Then to marry one—after falling in love.

Jocelyn Gibbon
June, 2016

COLORADO RIVER TIDES

A NEW LOOK AT RIVER FLOW THROUGH THE GRAND CANYON

INTRODUCTION

Like many boatmen, on arrival at camp I place a rock or stick at water's edge to keep an eye on the river level. Often I've noticed that the times the Colorado River bottomed out or crested seemed at odds with the tide table I had downloaded before the trip. I suspected that either typical flow varied a lot or that the commonly used tables were wrong.

While anticipating level changes is not mission critical for a Grand Canyon River trip, knowing tide behavior can help you find propitious times to run tricky rapids and avoid beaching on a pile of rocks during daily lows and weekend flows.

I figured I could find the answer. So with the opportunity afforded by forced isolation, I took a close look at the plentiful water-level data. This data has been recorded by the U.S. Geological Survey (USGS) every fifteen minutes over many years at Lees Ferry (river mile 0), Phantom Ranch (mile 88), and Diamond Creek (mile 226). I downloaded all measurements between 2009 and 2020—that's 1.26 million records.

After considerable effort to wrangle all the data, I have now solved the riddle. While a lot of noise exists in the flow, this doesn't inhibit reasonably accurate low-tide predictions. High tide varies more, but predictions are still pretty good.

It turns out the available tide tables fail significantly in three respects:

1. At common flows on days there are tides, water typically begins to rise at Lees Ferry between 6:45 and 7:00 am—not around 10 AM which is commonly cited.
2. The discharge wave flows, not

at the generally accepted 4.0 to 4.5 miles per hour (mph), but at a much speedier 4.25 to 5.7 mph. Also the flow runs much faster after Phantom than before, and we can use this distinction to refine predictions for the entire river.

3. Existing tables specify the time of rising and ebbing tide based on river flow. But "tide" implies significantly changing levels in the Canyon—by typically 5,000 to 8,000 cubic feet per second (cfs) on any given day (Wright and Grams, 2010, page 5). In this context, does flow mean low flow, peak flow, average flow, or midway between low and peak? And these values all change as you progress downriver. In this new table, flow means "low flow for the day at Lees Ferry."

This example demonstrates just how wrong existing tables are: Imagine a day with flow that varies from a low of 9,000 to a high of 16,000 cfs—a common occurrence. By the time you arrive at Diamond Creek (mile 226), the standard go-to table is behind by about 16 hours. If the current continued another hundred miles, actual flow would lap the tide table by *an entire day!*

While I find the speed of the wave an interesting factoid, the true value of this analysis for river runners is an accurate tide table, so I'll start with that. While I looked at all data over a period of twelve years (2009–2020) for this analysis, the information becomes very thin below 6,500 cfs and above 11,400 cfs, as flows outside this range are infrequent. So I included only days with low-flow tides at Lees Ferry between the above parameters.

APPROACH TO TIDE TABLE CONSTRUCTION

I downloaded 1.26 million flow measurements from the National Water Information System operated by the USGS. This download represents measurements taken every fifteen minutes over twelve years (2009–2020) at three locations.

1. Lees Ferry—mile 0
2. Phantom Ranch—mile 88
3. Diamond Creek—mile 226

I started by picking random days and graphing flows at each of these spots and I discovered that—while a great deal of noise exists—useful patterns emerge.

Precipitation and inflows from side streams and springs cause rises from station to station, but evaporation counterbalances some of this increase. In the absence of significant rain, an average of 490 cfs augments the flow between Lees Ferry and Phantom Ranch (Wright and Grams, 2010, page 4) and another 520 cfs is added between Phantom Ranch and Diamond Creek. It was gratifying (to me) to see that a torrential rain at Granite Park that hammered us one night in 2018 showed up as a significant spike at Diamond Creek about three hours after the storm.

My biggest challenge was identifying a signature event each day at Lees Ferry that I could spot later as it passed Phantom Ranch and Diamond Creek. My first inclination was to hone in on "peak flow," as it's relatively easy to construct a formula that flags a maximum in a data series over a given period of time. I had to account for long plateaus and for many occurrences of the data fluttering between two high values but this was tractable. Unfortunately, peak flow travels materially faster

TIDE TABLE: Start with your best estimate for your trip of low flow at Lees Ferry and use that to select the pair of columns to employ below. You will likely reference just one pair of columns for your entire trip. Then use your river mile to estimate when the tide will start to rise and fall. At Lees Ferry, the tide starts to rise within one hour of the estimate 87% of the time. And 86% of the time, it starts to fall within an hour and a half of the prediction. Accuracy diminishes a bit as you travel downriver but is still fairly good. Keep in mind there is often no discharge wave from the dam on summer weekends. Tide estimates are based on "river mile" —second column. River feature locations are approximate.

Low Flow at Lees Ferry		7,000 cfs		8,000 cfs		9,000 cfs		10,000 cfs		11,000 cfs	
Feature - Approx.	Mile	Start Rise	Start Fall	Start Rise	Start Fall	Start Rise	Start Fall	Start Rise	Start Fall	Start Rise	Start Fall
Lees Ferry	0	6:45 am	10:15 pm	6:45 am	10:15 pm	6:45 am	10:00 pm	6:45 am	9:45 pm	6:45 am	9:30 pm
Badger	10	9:06 am	12:16 am	9:00 am	12:12 am	8:55 am	11:54 pm	8:50 am	11:36 pm	8:46 am	11:19 pm
House Rock	20	11:27 am	2:17 am	11:16 am	2:10 am	11:05 am	1:49 am	10:56 am	1:28 am	10:47 am	1:08 am
Silver Grotto	30	1:48 pm	4:18 am	1:31 pm	4:08 am	1:16 pm	3:44 am	1:01 pm	3:20 am	12:48 pm	2:57 am
	40	4:09 pm	6:19 am	3:47 pm	6:06 am	3:26 pm	5:39 am	3:07 pm	5:12 am	2:49 pm	4:46 am
Nankoweap	50	6:30 pm	8:21 am	6:02 pm	8:04 am	5:37 pm	7:34 am	5:13 pm	7:04 am	4:51 pm	6:35 am
Little Colorado	60	8:52 pm	10:22 am	8:18 pm	10:02 am	7:47 pm	9:29 am	7:18 pm	8:56 am	6:52 pm	8:24 am
	70	11:13 pm	12:23 pm	10:34 pm	12:00 pm	9:58 pm	11:23 am	9:24 pm	10:48 am	8:53 pm	10:13 am
Hance	80	1:34 am	2:24 pm	12:49 am	1:58 pm	12:08 am	1:18 pm	11:30 pm	12:40 pm	10:54 pm	12:02 pm
Phantom Ranch	90	3:55 am	4:25 pm	3:05 am	3:56 pm	2:18 am	3:13 pm	1:35 am	2:32 pm	12:55 am	1:51 pm
Crystal	100	5:50 am	6:16 pm	4:58 am	5:43 pm	4:09 am	4:58 pm	3:23 am	4:14 pm	2:41 am	3:31 pm
	110	7:46 am	8:06 pm	6:50 am	7:31 pm	5:59 am	6:43 pm	5:11 am	5:56 pm	4:26 am	5:11 pm
Elves Chasm	120	9:41 am	9:56 pm	8:43 am	9:18 pm	7:49 am	8:27 pm	6:58 am	7:39 pm	6:11 am	6:51 pm
Bedrock	130	11:37 am	11:46 pm	10:36 am	11:05 pm	9:39 am	10:12 pm	8:46 am	9:21 pm	7:56 am	8:31 pm
Deer Creek	140	1:32 pm	1:36 am	12:28 pm	12:53 am	11:29 am	11:57 pm	10:34 am	11:03 pm	9:42 am	10:11 pm
Upset	150	3:27 pm	3:26 am	2:21 pm	2:40 am	1:19 pm	1:42 am	12:21 pm	12:46 am	11:27 am	11:51 pm
Havas	160	5:23 pm	5:16 am	4:14 pm	4:28 am	3:09 pm	3:27 am	2:09 pm	2:28 am	1:12 pm	1:31 am
	170	7:18 pm	7:06 am	6:06 pm	6:15 am	4:59 pm	5:11 am	3:56 pm	4:10 am	2:58 pm	3:11 am
Lava Falls	180	9:14 pm	8:56 am	7:59 pm	8:02 am	6:49 pm	6:56 am	5:44 pm	5:53 am	4:43 pm	4:51 am
	190	11:09 pm	10:46 am	9:52 pm	9:50 am	8:39 pm	8:41 am	7:32 pm	7:35 am	6:28 pm	6:31 am
	200	1:04 am	12:36 pm	11:44 pm	11:37 am	10:29 pm	10:26 am	9:19 pm	9:17 am	8:13 pm	8:11 am
Pumpkin Spring	210	3:00 am	2:27 pm	1:37 am	1:25 pm	12:20 am	12:11 pm	11:07 pm	11:00 am	9:59 pm	9:51 am
	220	4:55 am	4:17 pm	3:30 am	3:12 pm	2:10 am	1:55 pm	12:55 am	12:42 pm	11:44 pm	11:31 am
Diamond Creek	230	6:50 am	6:07 pm	5:22 am	4:59 pm	4:00 am	3:40 pm	2:42 am	2:24 pm	1:29 am	1:11 pm
	240	8:46 am	7:57 pm	7:15 am	6:47 pm	5:50 am	5:25 pm	4:30 am	4:07 pm	3:14 am	2:51 pm
	250	10:41 am	9:47 pm	9:08 am	8:34 pm	7:40 am	7:10 pm	6:17 am	5:49 pm	5:00 am	4:31 pm
	260	12:37 pm	11:37 pm	11:00 am	10:21 pm	9:30 am	8:55 pm	8:05 am	7:31 pm	6:45 am	6:11 pm
	270	2:32 pm	1:27 am	12:53 pm	12:09 am	11:20 am	10:39 pm	9:53 am	9:14 pm	8:30 am	7:51 pm
Pearce Ferry	280	4:27 pm	3:17 am	2:46 pm	1:56 am	1:10 pm	12:24 am	11:40 am	10:56 pm	10:15 am	9:31 pm

Speed (mph)	Wave	Peak	Wave	Peak	Wave	Peak	Wave	Peak	Wave	Peak
Lees -> Phantom	4.3	5.0	4.4	5.1	4.6	5.2	4.8	5.4	5.0	5.5
Phantom -> Diamond	5.2	5.5	5.3	5.6	5.5	5.7	5.6	5.9	5.7	6.0

For any pair of columns above the speed of the discharge wave (most relevant) is represented by the value on the left. The speed of peak flow is represented by the value on the right.

than lower flows and using peak flow inflates discharge wave speed. The peak also flattens as the discharge wave moves downriver, creating difficulties in estimating when the water level begins to drop.

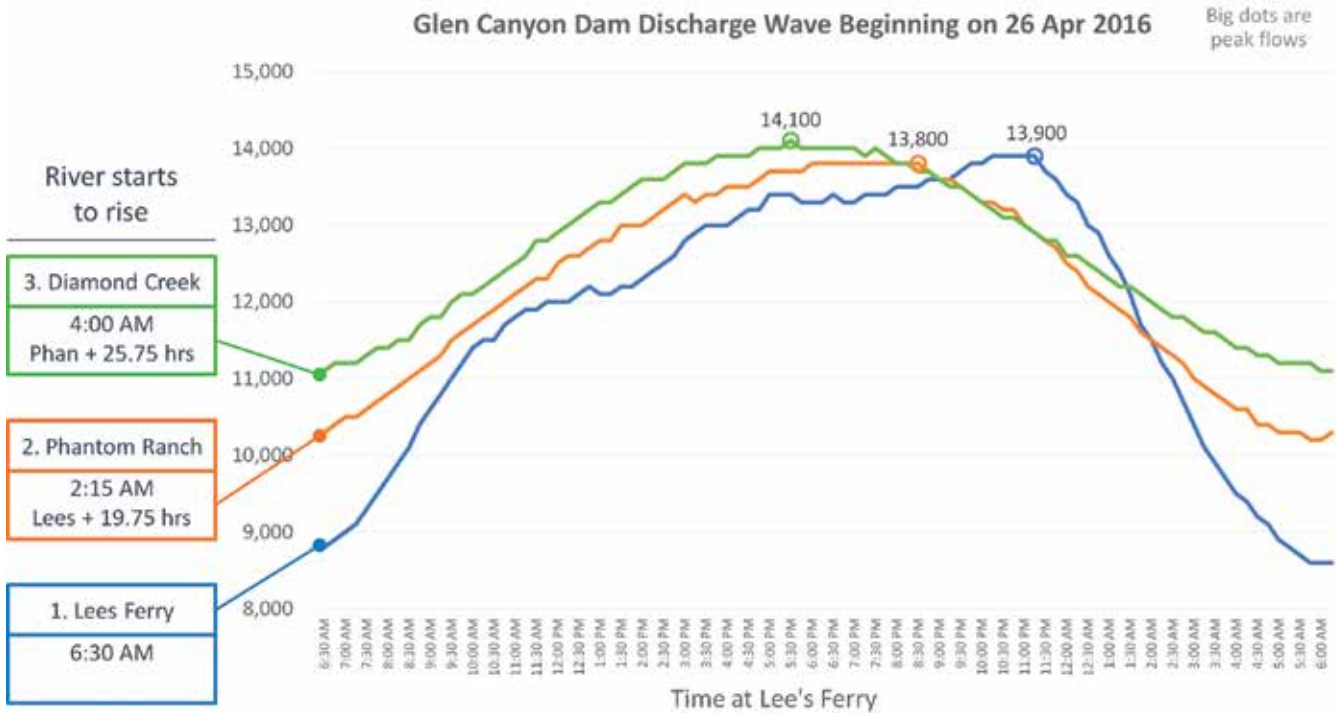
After many false starts, I settled on the "final minimum flow before

a consistent rise." For example, here is the morning series at Lees Ferry on the 26th of April 2016—a typical Tuesday (see *Time/Flow chart below*).

Based on the table above, I used 6:30 am as the timestamp for Lees Ferry that I then compared with the same inflection points at Phantom

Time (am)	5:45	6:00	6:15	6:30	6:45	7:00	7:15	7:30	7:45
Flow (cfs)	8,800	8,800	8,800	8,800	8,900	9,000	9,100	9,300	9,500

CHART 1



Ranch and Diamond Creek. (Note that I rounded all values to the nearest hundred cfs).

Using markers constructed by this method at all of the three gauge stations, I was able to produce charts depicting the same discharge wave at the three locations. Here is the 24-hour chart for the flow originating at Lees Ferry on the 26th of April 2016 at 6:30 am (see Chart 1).

Note that on this day additional inflow from side streams and springs accounts for 420 cfs between Lees Ferry and Phantom Ranch, and 410 cfs between Phantom Ranch and Diamond Creek. You can see the discharge wave smooths progressively as it moves downriver. Examining more such charts revealed other useful patterns. The first chart I constructed took 45 minutes, and it was tedious work. With a little visual

basic code, I built a dynamic model that produces a chart for any day between 2009 and 2020.

A user of the model can plug in any day between 2009 and 2020 to access a visualization of three overlapping waves as in Chart 1 above. I'm happy to share the model with anyone who is interested.

CONCLUSION

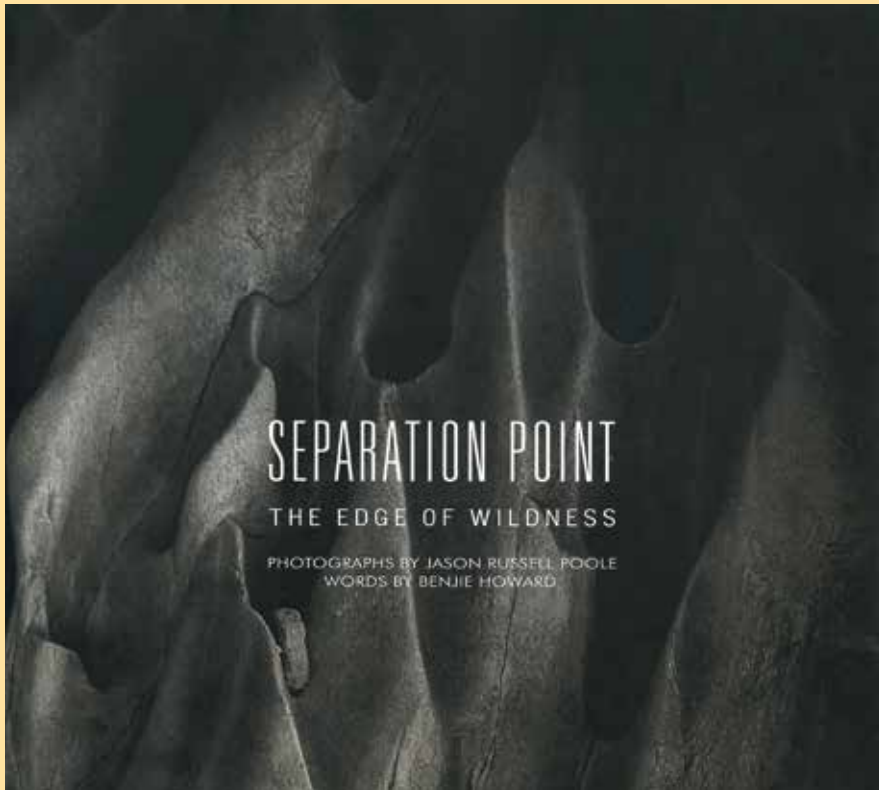
I hope that, armed with an improved tide table, boatmen will be better able to understand river flow, avoid surprise overnight beaching of their flotilla and better time their running of challenging rapids. I wish you good floating and hope to see you on the river in the future.

Phil Gormley
P@HairyBoatman.com

References:

1. Graf, Julia B. "The Colorado River in Grand Canyon: How Fast Does It Flow?" (December 1997). USGS Fact Sheet FS-168-97. United States Geological Survey.
2. Lazenby, Jerold F. "Unsteady Flow Modeling of the Releases from Glen Canyon Dam at Selected Locations in the Grand Canyon" (1987). *Elusive Documents*. Paper 24.
3. U.S. National Park Service. "November 2018 High-Flow Experiment" (November 2018).
4. Schonauer, Kurt (Hydrologist, USGS Arizona Water Science Center, Flagstaff, AZ). April 2021. E-mail.
5. Wiele, S. M., and Smith, J. D. "A Reach-Averaged Model of Diurnal Discharge Wave Propagation Down the Colorado River Through the Grand Canyon." *Water Resources Research*, (32)5, pages 1375-1386, 1 May 1996. Abstract. A significant fee may be assessed to access this document.
6. Wright, S.A., and Grams, P.E. "Evaluation of Water Year 2011 Glen Canyon Dam Flow Release Scenarios on Downstream Sand Storage Along the Colorado River in Arizona." U.S. Geological Survey Open-File Report 2010-1133. 2010.

Books



Separation Point—The Edge of Wildness, Photography by Jason Russell Poole, Words by Benjie Howard, Laguna Wilderness Press, 96 pages, ISBN: 978-0-984007-5-3, \$35.00.

The beauty of *Separation Point* is, at first, Jason Poole's magnificent photographs of the Southwestern Desert, extraordinary wildness, Grand Canyon/ Colorado River.

The grandeur is awe-inspiring with a reassuring "quietude" that suggests all is right with the world and could remain that way forever.

Yet immediately this photographic glory itself descends into something else and is transformed again by Benjie Howard's lovely, yet often sad and disturbing poetry, which is filled with uncertainty, tragedy, beauty, and mourns what is out-of-frame—our human foibles and the mankind-created disturbance of/

threat to all nature, wildness, our planet. At one point, Benjie quotes Terry Tempest Williams regarding "the real story of the American West." I think *Separation Point* is a powerful work about our challenge, especially those of us who live in the West to, in Williams words, "live and love with a broken heart."

This is a courageous book. It is not just another coffee-table offering to stare at and admire. Rather, it deals with both extreme beauty and extreme apprehension about the breakdown surrounding beauty. It is a call to rewild ourselves and re-enter the world as it intends itself. It is a call to decolonize our minds and find a way back to belonging.

In this sense, *Separation Point* is both an inspiring and disturbing experience. It is ultimately thought provoking. It is a story told through images and intimate conversations among human beings in wild places. The more you go through

it, absorbing the loving and often disturbed poetic commentaries, the more you understand the need to change, to find the thin silver thread between acknowledging, yet not giving in to the challenges of our broken hearts—the broken heart of the west.

John Nichols

Note:

Separation Point—The Edge of Wildness is available for purchase at www.separationpoint.com.

MAGIC

I have a friend who sprinkled
a sacred powder on his truck
so that it would become invisible
so he could get Mexicans and Nicaraguans
to Tucson in the middle of the night
The powder made mountains disappear too
when he needed that

I have another friend who drank tea
that allowed him to pass through a hole
in the pulsing fabric of fire
He met a Deer Spirit on the other side
in the Huichol Sierra Madre

Me. I'm on my last beer
everyone else is asleep
I'm on my side box on my boat
with my feet on the cold diamond plate
flipping the gate on a carabiner
again and again

while the cliff walls pose
silent gravestones in the moonlight
testaments to the death of oceans
while the moon itself spins
and around the moon the universe
with all its spinning suns
expands

© Benjie Howard

Swimming Grand Canyon and Other Poems, Rebecca Lawton, Finishing Line Press, 35 pages, ISBN: 978-1-64662-535-2, \$14.99

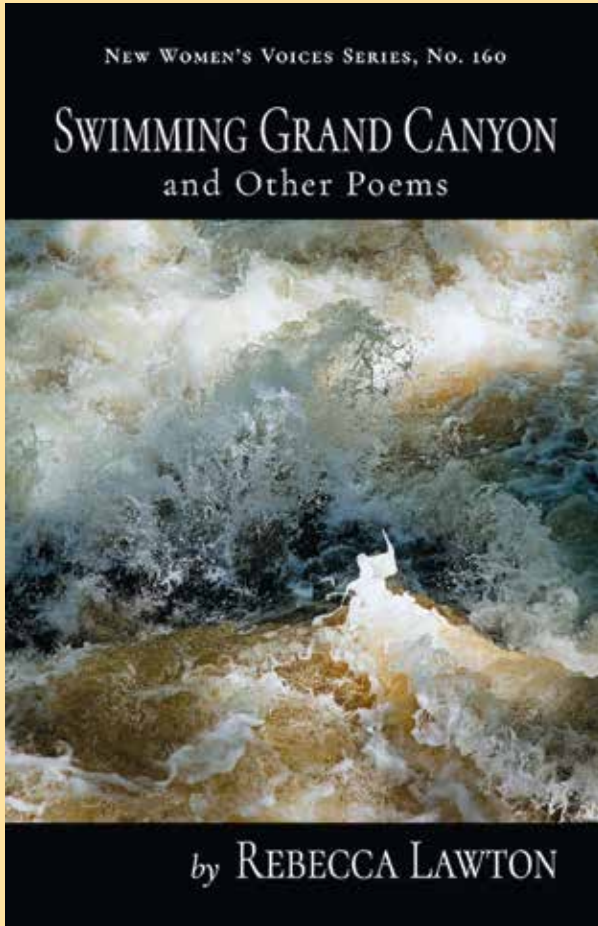
In *Swimming Grand Canyon*, author, fluvial geologist, and former Grand Canyon river guide Rebecca Lawton explores fierce rapids, river-guiding culture, and remarkable experiences in the

brehtaking world of water. Her seasons as a Colorado River guide inform many of *Swimming's* pages, exploring not only times made rich with too little water but also how to immerse in too much.

Christopher Brown, photographer, former Grand Canyon guide, and author of *Path of Beauty: Photographic Adventures in the Grand Canyon*, writes, "*Swimming Grand Canyon*

is a most unusual take on the place, contained in quirky poems from Lawton's life on her way downstream...Every poem is an unexpected gem, its own universe. Whatever you think these poems will be—they are not that."

Contact: Rebecca Lawton at becca@beccalawton.com; beccalawton.com; 707-337-2501.



JOURNAL

At night I'd read its pages
even the names
too beautiful to believe
Matkatamiba
Deer Creek, Thunder River
Elves Chasm, Tapeats Creek
Trout longer than your arm
in the eddy at Saddle Canyon

Rumpled pages jogged my memory
about the river
Mudbaths in the Little Colorado
The balmy air at night
when sunbaked wind
finally cooled enough
to let us sleep

I remembered the Canyon
Flash floods pouring red
from Soap Creek, Ryder Canyon
Nankoweap
During the day, I had to keep moving
The adrenaline at Lava Falls
Crystal, House Rock
The green-blue waters
of Havasu Creek
and little travertine pools
to dive in

© Rebecca Lawton

BOATWOMEN

The boatwomen are fifty-three
and fifty-five now
They guided for a living
years ago, their skin like hide
hair torn by wind

Both say rowing rapids
is easier than before
despite their ruined backs
they can relax
they don't care
what people think

Both say grunt work's harder
than at age twenty and thirty
despite pinched nerves
and tendons, ruptured disks
repaired knees

They know their limits
how to be out of control

The river is the stronger one
after all
When you're young
you don't get that
in your gut

© Rebecca Lawton

MUSTANG SALLY

You know, [when it comes to finding the Grand Canyon] everything kind of revolves around Irv [Callahan], to tell you the truth. I met Irv in...I think we first saw each other in '81. He was in Arizona, I was jumping at Perris Valley, California. But, a couple of years later he joined a skydiving team that was sponsored by Coors, in California, at the same drop zone I was at. They were very successful. He's a world champion skydiver several times over, as a team. He had good success with a group of four out in Arizona, but his real accomplishments all came with an eight-person team in California. And that's where I was doing it on a non-sponsored, lower level. We're just talking about the weekends. We were out there on Friday afternoons through Sunday night—we're skydiving out of DC-3's and twin Beeches mostly.

Back in the eighties, you could get away with doing it on the weekends. Your main competitors were the Golden Knights, an Army team, and they were training more often. They were the best of their pool of who they had. I don't know how to explain it, but it's just the right number of guys together, jumping together, and they were efficient and very good. I had always looked up to those guys quite a bit as we were skydiving together. Irv and I became involved when he got out there in California. We had a weekend...I lived in San Diego, and he lived in L.A., but on the weekends we'd see each other. Do you remember Bruce Mills? Bruce and Irv and I did a hiking trip to the Grand Canyon in 1983. We drove to, I guess it would be the South Bass Trailhead, hiked down partway, and then traversed across, and hiked down into the Royal Arch and spire. It was kind of a route back then, more than a trail. So I'm along for the walk, and that's my first exposure. We hiked down, made camp on the Supai, and then day hiked the next day down to the arch and spire. We were walking back out—you walk up the creek a little bit, and it started getting a little bit muddy, it had started to rain. I remember going to Bruce—you know, first time in the canyon—"So, do you see many flash floods down here?" (laughs)

Bruce said, "Oh yeah, all the time." And it wasn't—maybe fifteen or twenty minutes later—we could hear it coming down the canyon. At that point their main concern was which side of the creek do we really need to get out of to get back to our camp—because we didn't want to get stranded on the wrong side of this flash flood. After a slight debate, we went left and climbed up to safety. The wall of water that came down was probably maybe three feet high or so, but it grew to about eight feet, just as it raised up. That was *amazing*. Here we are in the Redwall, I'm looking up, and the sun is coming out, and we're in one of those places where you can scan...We're on the

South Rim, I'm just looking at the top. There had to be a hundred waterfalls coming down all over the place.

You know how big they get on the Redwall, right? I mean, they were just huge. They were mostly white, they were clear, they were coming down all over, and the sun comes out, and it's still kind of raining, and the sun is shining and hitting this. I'm just going, "Oh my God, this is the most incredible place!" I just get goosebumps now, thinking of that feeling of, "This is the first time I'm in the Grand Canyon and this is happening?! I mean, I gotta come back!" It had me, it went inside me right then—just the beauty and power and the magnificence. I was just hooked.

* * *

Maybe the best scene in the movie "Drop Zone" is where the overconfident hero (Wesley Snipes), gets unexpectedly dropped out of an airplane without a parachute by the heroine (Yancy Butler), a world-class skydiver who then proceeds to dive headfirst down to him as he flails through the air and catch him between her legs following a perfect front flip that puts her in position so she can clip him up and glide him down to safety.

The stuntwoman who made that maneuver for real is Sally.

Sally (and Irv) boated privately and then went to work for Diamond Expeditions and eventually migrated to Grand Canyon Expeditions.

This interview took place over a couple of Zoom calls in mid-May of 2020.

—Lew Steiger

* * *



Over Sugarloaf Key, Key West, Florida working as a stunt double for the movie "Drop Zone," 1994.



The Rogue River by Mule Creek, 1987.

Irv had done one trip with Connie [Tibbitts], I believe—swamped for Connie in '81, and that was it. I remember whenever we had a three-day weekend off—when we weren't team jumping, but we could get away from L.A.—we'd drive out and do a Grand Canyon hike. So we'd go out and do Deer Creek, Tapeats Creek, Thunder, Horseshoe Mesa, Tanner—you know, kind of during the off season, so a lot of winter type hiking.

We finally moved in together, I'd say, in about...oh my gosh, '86, '87. I was working at a thrift and loan, and he was working at Lanz Sleepwear. He was a sewing machine mechanic for like a sweat shop, but it was a nicer one. But he was taking care of all the sewing machines, and I was doing auto contract loans at a thrift and loan, and he had a private permit that was going to happen in '87, and he drew an October date. All we did in 1986 was save money, and in '87 we both quit our jobs and went on the Pro Leisure Tour. So in the spring we bought two boats. They were both used. They were those...you know, one size smaller than a [Campways] Miwok, the Hopi.

Steiger: Oh yeah, nice little boats. Kinda little for Grand Canyon. (laughs)

Gist: Okay, so they had big tubes. That's what Irv kept telling me. They had 18-inch tubes, the same tubes as a Miwok, but they were short. They were like, what, 12½?

Steiger: Perfect one-person boat.

Gist: And that's what we did. We went and we rafted wherever there was water. We went down the Deschutes River, we went down the Rogue River a couple of times. Irv wanted to really be the trip leader for his trip, and to qualify...I remember that the Rogue River was one of the rivers we needed to do. And it was a blast! In between river running, we would go to all these weird national parks we hadn't been to. You know, Craters of the Moon National Monument, or go hike around Yellowstone and stuff like that.

Steiger: So when you say you did all these rivers... he did the Rogue River so he could be the leader of his private trip in Grand Canyon, he had to have the requisite experience?

Gist: Right. So we each had our own raft, and we figured out quickly that if you go to the put-in, there's usually a shop that has some outdoor equipment, and they've got a guide book for the river. Basically we'd look at the guide book, and it would show you, tell you, where the runs were, and we'd figure out where we were going to go, and that's how we learned to read water, was kind of by a book. You finally got to the takeout and arranged the shuttle, and that was it. Then we'd go to the next one. I mean, doing the Upper and Lower Deschutes. The Rogue River was so much fun we did it again. We'd just stand in line in the morning, and try to get a...They had so many people that they let launch, and if they had a few extra slots, they'd give them away until they were full, so we got to do that one. I'd do that one any day. Have you ever done that one?

It's the history there. It was the water and the deer walking through camp, the bear across the river eating a fish, the osprey just diving. In between our boats osprey were diving for fish, hitting the water. That place was magical. That was a neat, neat place.

So October comes and I got invited on Connie's private [trip] in September. That was back in the days the rules allowed for you to do as many privates as you wanted, as long as you were not the trip leader. Do you remember that?

So I was able to go on Connie's trip, and she was able to go with Irv in October, but Irv was not able to go with Connie, because he was the trip leader for the October.

Steiger: So he could only do the one, huh?

Gist: Yeah. So I got my preview that time. She took her family, and she borrowed a motorboat from, I think, Russell Sullivan.

She got her parents and all of her brothers and sisters and neighbors, for a twelve-day motorized trip, and Stu Reeder came along and rowed her Miwok.

Steiger: (laughs) What a great group!

Gist: This is my first river trip, and I get on this trip

because everyone decides it'd be a good thing for me to see this place. I'm thinking, "Okay," and I get on the river and I'm just amazed. I feel like I'm about three steps behind Connie, trying to figure out how to help her. And yet I look around and think, "Oh my gosh, I could have done that!" I don't see the jobs, and I mostly just wandered around aimlessly. About the third day of that trip, Stuart started talking (laughs) to a couple of people. He mostly just...

Steiger: Oh, he wasn't talking before that? (laughs)

Gist: Yeah—not that I noticed.

Steiger: Let me just say for this document, Connie is Connie Tibbitts, who we've done in the BQR. Connie was a big skydiver and pilot and all this other stuff too. She is definitely one of the women pioneers in Grand Canyon, one of the first to break in, and do it in the *motor* world.

Gist: Right.

Steiger: There were a few others too, but Connie was right up there. But... just want to go back. Your first time you ever saw the Grand Canyon, you did that hike and saw that flood?

Gist: Yes. That was in '83, and I was with Irv and Bruce.

Steiger: Did you have any idea then how big of a...Did you kind of know you were going to be there? Did it hit you on that level at that point?

Gist: You know what? We didn't even get down to the river that hike. I remember those guys...We walked to—there's a great big cliff that you have to bypass to go up above...I remember both Irv and Bruce were sitting with their legs dangling off, like in a [chair], off this cliff.

Steiger: The Redwall limestone?

Gist: And I'm freaking out, right? because I'm looking at this going...You know, I could skydive, but when you're anchored onto the ground, I still had a weird fear of heights kind of thing.

Steiger: Well, if you don't have a parachute on... (laughter)

Gist: It wasn't that. It was just that whole, you know, feeling like, "Oh, they could just slide off and drop hundreds of feet!" And I looked over, on my belly, peering over the edge like Kilroy, and asking those guys to please scooch back a little, as they're swinging their legs to try and get me. But I never saw the river right then. I think the first time I went down to the river was doing Tapeats-Deer Creek, down the Bill Hall Trail. That was probably '84. I remember getting down to the river and having that big...It was green. I remember how green it was. I remember the current, and I'm looking at this thing and it seemed really scary to me. Irv was looking at it going, "We're gonna run that river someday, Sal! I'm on the list, I'm getting my private permit!" I'm thinking, "Oh no, we are not!" (laughter) "You may, but this scares the heck out of me." You know, just looking at it. It was really big water, still, I guess.

Steiger: But then, okay, so fast forward...you get on this trip with Connie. And on Day 3, Stuart said a word or two? (laughs)

Gist: Yeah. He said, "I heard you're going to be rowing this river in October. Do you want to ride on *my* boat?" I went, "Oh yeah!" You know, because it's different when you're sitting on a motor-rig.

Steiger: Oh yeah.

Gist: I really liked the bird's eye view that I was getting on Connie's rig, and seeing her work her magic with the motor and stuff, but as soon as I got in that rowboat...Do you know what I mean?

Steiger: Yeah. You were probably bailing too, I'll bet. It wasn't a self-bailer, was it?

Gist: No, it was not a self-bailer.

Steiger: But you were the first one he let on there? He was by himself, and he decided you'd be alright to have on the boat? Was that how that went?

Gist: You know, he let me get on for a while, and then he let Connie's sister on there for a while, until we got to Crystal, or the night before Crystal. I remember Connie's sister Tibbie said, "Oh, Stuart, I want to ride with you!" Stuart said, "Yeah, but are you ready to swim Crystal?" Tibbie said, "Oh, don't worry, Stuart, you're so good you'll never flip." And Stuart said, "You're not riding with me."

Steiger: Just because she said that? (laughs) Yeah.

Gist: So she was banned. I was on his boat the rest of the trip and she was off. So that was...And that worked out to my advantage, because he started letting me row some little stuff, and he was actually giving me commentary during Hance. Stuart made everything look so easy. It was September, so we had *some* water. I remember he didn't have to work very hard, and he always had the boat in the right spot, and we were just slipping by these big holes and waves—especially even Walthenberg. Oh my gosh, I had no idea, to this day, really where he went. And to tell you the truth, I don't remember bailing that much. I'm sure I did.

Steiger: I'll bet you didn't bail that much with him, because he really was something in whatever boat he had.

Gist: Yeah, we were pretty dry in that Miwok for most of the time. But it was great! That trip, it was awesome. It was a great introduction. It was interesting for me to see Connie in a whole different element, to see her meet and greet her friends on the river, and get that whole sense of camaraderie they had. (laughs) Yeah. So that was that first trip, and then turned around, and the next month, in October...There I am in my own boat! I tell you, Irv has the greatest groups of old skydiving buddies. I was so lucky to meet all these great friends, that were long-time friends of *his*, that became just so dear to my heart. We've lost quite a few now, but still, it was awesome to do that river trip, 21 days. Bob Hallett was on it, (**Steiger:** Oh, say no more.) and Stu Reeder hiked in at North Bass, because Hallett and Irv's brother hiked out, and so did, I think, another skydiving buddy—hiked out at South Bass. We were doing exchanges all over the place. Peter Weiss—did you ever meet his brother Ricky? There was this whole thread of skydiver-river runner, including Connie and Myron [**Cook**]. It's pretty cool. Dick [**Clark**], Ray Pope.



205 mile rapid in the Hopi, 1987.

It was just this incredible—people coming and going, at Hance, just weird places. But somehow we did 21 days and stayed on schedule. I think we were about a half a day late by the time we got down to Bass, but not bad for a private. We had eight boats...It was a magical time, just because it probably rained on us close to every day, and the river didn't turn muddy until after Havasu, and it never rained on us while we were on the river or during our meals—pretty much. I have to take that back—it had to have a couple of times. October, we kept bumping into an OARS trip with the classic guides. I really didn't know them, but it was Tom Moody and Bart Henderson, and...

Steiger: Probably Stan Boor, maybe [Jim] Slade.

Gist: Stan Boor. It was that group that Connie knew, and Stuart knew. We double-camped with them at Blacktail and at Fern, because they wanted to hang out with our group. That's when they had Livingston Taylor on their trip.

Steiger: Oh yeah. He was a cool guy. So did he play music and all that?

Gist: He *did*! They got him to sing one of the nights. We were going to have Halloween at Blacktail, and I think that was our one rainout night. We went kind of spookin' up into their camp. We didn't know that they had called off their party, but we brought the party to them. (laughs)

Steiger: I bet you did!

Gist: They had their commercial people, all in their tents and stuff, but we hung out for a while. That was a fun, great trip—lots of hiking, lots of side canyons. That's the one I got to...gosh, Connie and Stuart and I hiked up to the top of Diamond Peak on that one.

Steiger: Yeah. Surprising once you get up there, isn't it?

Gist: That was really neat. Hiking up there, I remember

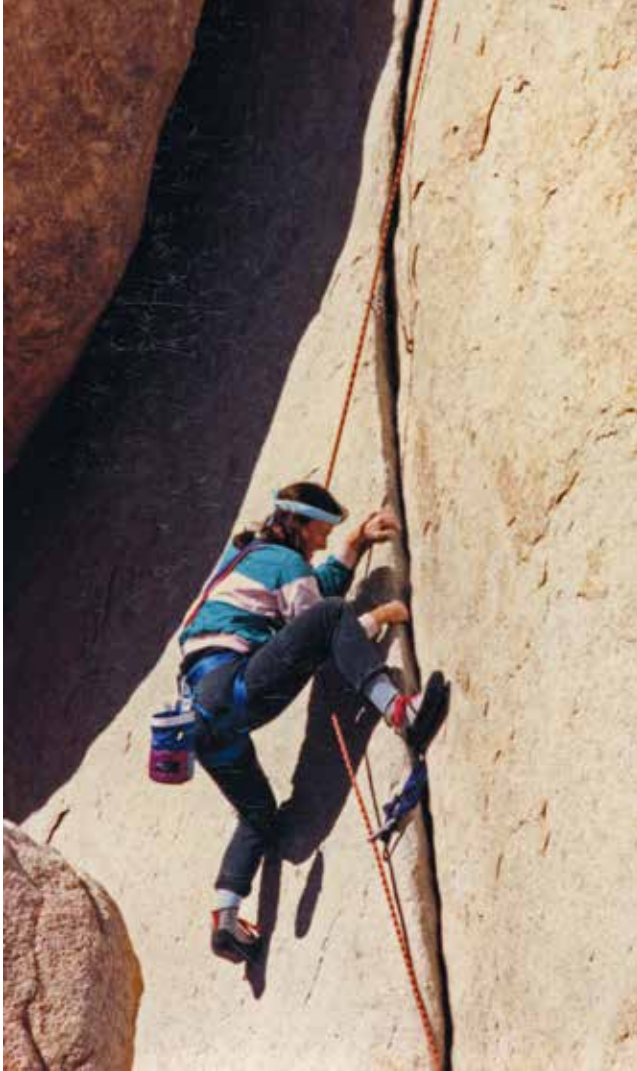
Connie said, "Stuart, we've reached our halfway point in time. We need to head back. Stuart just kept turning around saying, "One more layer, Connie, one more layer." Because you can't really tell. I heard that over and over again, and pretty soon "one more layer" was on the top... Yeah, I was their little tagalong. We were the hikers of that group for sure.

Steiger: Well, so how did you get from there to doing it commercially? How did that go?

Gist: We spent that winter...We had been rock climbing—we learned in Joshua Tree. And we went to the



At the top of Diamond Peak with Connie Tibbitts and Stu Reeder, November 1987.



Suicide rock above Idyllwild, California, 1986.

camped there and hung out for a while in Joshua Tree, just climbing, for most of November. And it turned cold. You know, it was below freezing a few nights, and we were looking at each other, "Where should we go? Let's go see Bob in Florida!" So we went to DeLand, and that's how *that* started. I went there and started working for Bob at the Manifest, and then as a skydiving *instructor*, and Irv went to work as a team skydiving coach.

Steiger: This is our friend Bob Hallett, and he started this business, Skydive DeLand, right? [*Bob worked for Hatch in the summers.*]

Gist: Yup. Right. That had been going on for a while, I think since the early eighties. So summertime, jumping in Florida, he didn't have a lot of business. But he was covered up in the wintertime with a lot of Europeans that came over and jumped there. So anyway, we're over there, and May rolls around, and Irv has the idea we're going to go try to get paid jobs. So we were really looking mostly at motor companies, but anybody. We started in Flagstaff, and we checked in with Canyoneers and...Whoever we knew, we were dropping in and leaving our names, and everybody said, "Well, we've already hired everybody. I'm sorry." That was everybody's response—except for Claire

Quist, who looked at us and said, "Well, you're really late. You should have been here in April!" (chuckles) You know Claire. So we still kept trying, and we worked our way up to Page now. I remember walking into the warehouse there, and Bill Diamond was welding, and he stops, throws up his helmet, and asks how he could help us. We said that we were looking for jobs as swampers. And every time, we'd drop a couple of names: "Connie Tibbitts" and "Stuart Reeder," and that we had done these river trips with them, but that was it, I felt like it was going to help us. And Bill kind of looked us over and said, "You know, I have a couple of young guys, and I'm not sure they're going to work out. Give me your names and phone number where I can contact you." And we went, "Oh!" A glimmer of hope, right? We left our contact information, which was basically Irv's parents' house in Dewey.

Steiger: Didn't have cell phones then, did we?

Gist: No. So we head back there, after beating on every door and kind of getting depressed. It had to be less than a week later, the phone rang, and I guess it's Darrell Diamond he's talking to. Darrell says, "Are you available to work as a swamper on a trip that's launching..." You know, blah, blah, blah. Irv said, "No, I'm not, but Sal can do it." Famous words! I mean, he just threw me the biggest bone ever right then, because he knew that it would be a lot easier for him to get a job on the river, than me.

Steiger: You're saying he actually *was* available?

Gist: Of course he was available! We were not doing a thing! And he just gave it away, right then. What a guy!

Steiger: Unusual, yeah. Quick thinking!

Gist: Well, I think he thought about it ahead of time, that, you know, if he did get the call.

Steiger: How to play it. Get you in.

Gist: Yup. But he didn't tell me that, I was totally surprised. So I show up on the river, and about three or four days later, they called him, and got him on a trip. So it worked out perfect.

Steiger: But they were different trips?

Gist: Yes, they were—which wasn't unusual—they'd send an experienced swamper with a new guy. So my first river trip was with...Do you remember Steve Jones, Tyler Jones? Brothers. Tyler was the little brother. He was named after their school bus driver. The parents looked at the kids and said, "What do you want to call your baby brother?" They went, "Let's name him after our favorite bus driver, Mr. Tyler." (laughter) I'll always remember that. That was a good name. So anyway, they take me on the river and all I know is I'm supposed to work...Mike Sampson was the other swamper at that point. They just looked at me and said, "Whatever Mike does, or how he does it, I want you to do that. The lead boatman is the only one to talk to the passengers, and you're there to work."

Steiger: "You're not to talk to anybody." (laughs)

Gist: Pretty much! Yeah. They told me right away, "Do not steal his thunder. If anybody asks you a question, you should say, 'I'm not sure, you should ask Steve.'"



Top to Bottom:
Team 10 Miles High, Perris Valley, California, 1986.
Coaching a jump from the Pilates Porter, Deland, Florida, 1997.
Over Deland, Florida acting as a student for a training video, 1992.
Balloon jump, Perris Valley, California, 1981.





10-way speed star from the DC-3 Perris Valley, California, 1984.

Inset: As part of a 200-way world record, Myrtle Beach, Florida, 1992. Beat that in 2004 in a 357-way in Thailand.

Steiger: Okay. Your first trip, that's alright.

Gist: Yeah! They didn't want me making stuff up, and they didn't want me talking, interacting, with the people. They wanted me working, doing the chores. And so I did them, and I worked really hard. I'm thinking I had to make a good impression on these guys. And we had a great time. We had a great trip, we had lots of fun, and we had nice folks. I had a little sketch book—you know... like a detective would take notes in. And I was sketching the rapids, because I had learned how to boat with this crutch, which was a book with a diagram that explained how to run the rapids—you know, which holes you avoid, and which way the current was going. I had never seen Connie's, but I knew that she had done one. I think Dick Clark got her doing that too. I just thought that was a great idea, "I'll make my own up." And as soon as the guys saw me doing stuff, we'd get to the bottom of a rapid, and then they'd start giving me details, they'd start filling in my sketch for me, like, "The current really rebounds off of this rock. It's trying to push you into the wall right here, and you need to get this angle." So they knew I was serious. They didn't know how old I was. You know what? I'm a little bit more unusual than most people because I didn't really start until I was 29.

Steiger: Wow.

Gist: Yeah. And I totally lied to everybody about my age, too.

Steiger: Oh yeah?

Gist: Well, of course! Can you imagine a swamper, you're working with these guys 23 and 24—they're the boatmen—and they have this lady that's older than them as a swamper?! That was never going to work. I never told them what my age was. I just said, "How old do you think I am?" and they always guessed at least six or seven years younger. And I said, "That's a good guess!" (laughter)

I was personable enough, and doing the right things, that I was going to get passed on to the next person for review. One thing that I remembered stunned them, [Brian] Dierker was on a trip just above Havasu. He was on some sort of a science trip—this had to be '88—and we pulled in because the guys wanted to say hi to him. It's just him and a girl on the beach, and the girl yells out, "Sally! Is that you?!" I swear the Jones brothers, both their heads snapped back, like, "Who do you know down here?!" You know, "Who are you?" Turned out it was Lisa Long, and she used to work at Skydive Perris. Anyway, so that was funny, seeing her. I just remember Brian Dierker going, "How big is the world, Sal? It's about this big, right?" (laughter) So I got that trip, and then I got another trip. The real checkout trip was with Les Hibbert.

Steiger: Okay, so now they're getting serious about you.

Gist: Yeah, because I passed the first two.

Steiger: The first one, they were desperate. (laughs) They needed somebody, any warm body.

Gist: Right. And so they said, "This one with Les..." Oh! I know the cool thing about that first trip—I'll go back to

Tyler. We're coming up on Hermit. They're letting me drive the motorboat in the flatwater, and all I can do is think about the throttle—you know, more gas and less gas—and if I go to the left, I go right, and if I go this way, I'll go left. "I'm sorry, I'm trying to manage that, it's not a natural thing for me." And we get to just above Hermit. Tyler says, "Okay, do you know this rapid?" I said, "Yeah. I mean... Yeah." He said, "Just enter seven feet to the left, and keep it straight." I said, "I'm gonna drive?!" He said, "Yeah." And they said, "You got it?" I said, "Yeah. Okay." And he runs up to the front, and jumps on the left pontoon.

Steiger: Whoa!

Gist: I'm back there going, "Ooo! Ooo! I'll keep it straight!"

Steiger: Clearly they had confidence in you.

Gist: Clearly they didn't know how hard I was struggling with the whole throttle left and right thing! (laughs)

Steiger: I laugh—I always say, you know, you can take a good motorboatman and put them on a rowboat, they're going to figure it out right away. But these rowing guys—it is *not* the same, you could not go the other way. You can't take somebody that's rowed all their life and put them on a motorboat—they're going to be lost—because it takes a while.

Gist: It did, yeah. I was definitely challenged. That was the one cool thing about that trip, besides meeting Brian for the first time. Anyway, so here I am with Les, and I think Mike Sampson was—I'm pretty sure he was like a swamper-slash... They called them second pilot and lead pilot at Diamond, instead of lead boatman or guide—we were pilots.

Steiger: Yeah, Sanderson, those guys did the same thing.

Gist: Yeah, I think Mikey was the second pilot on this one, and Les, of course, was leading. I remember getting down there somewhere above... Yeah, we were still above Hance, and he was letting me drive, and talking me around some rock bar. He just flat out looked at me and said, "You know, Sally, you're never going to get a boat with Diamond." This is on my second trip!

Steiger: This is Les Hibbert?

Gist: Yeah. And I'm not thinking really about getting a boat, I'm just thinking about keeping a swamper job. But when he said that to me, I had all these weird feelings about just rejection and confusion. You know, he just told me that so matter-of-fact. I didn't even know what to say to him, except that it lit this fire under me that you wouldn't believe, that I was going to show him wrong. But I didn't realize that the whole underlying thing was that Leslie [Diamond] was swamping, but she didn't have a boat yet. In his mind, there was no way I was going to get a boat before Leslie, and that if she didn't *want* to drive a boat, then I was *never* going to get a boat. I mean, that was his logic.

Steiger: But Helen [Diamond] had a boat, didn't she?

Gist: I know. There's a lot of other people that had boats.

Steiger: Yeah, but I'm trying to think back to women boatmen for Diamond. So Les was just like, "It's going to be Leslie, never you"?

Gist: Uh-huh. So something happened, and I don't know what happened, but Leslie all of a sudden decided that she wanted to get a boat. And also I knew that coming in Diamond was very stable with the number of guides that they had, there wasn't a big turnover. And they weren't increasing in size at all, so you had to...How do you get your own motorboat? Somebody quits or retires or... dies. I mean, how do you move up? I didn't get a motor trip until my eighteenth trip down the river. I was really experienced, which was great, but by then Leslie got a boat just before I did, and she decided she wanted to start running. But I worked so hard for Diamond and didn't have the easiest time with the...I had a great time with all the males that worked for Diamond, and the women didn't care for me, because they didn't know me, and they assumed something was going on that wasn't. You know, that thing.

Steiger: It's interesting to me—in my experience there has definitely been discrimination in this business. There's been all kinds of stuff that we don't need to put on tape that went on once upon a time—but the *biggest* people problems that I've personally seen have been woman-to-woman. (laughs) I mean women competing with, or at odds with each other generally.

Gist: I have to agree a million percent on that.

Steiger: In terms of personality conflicts and all that stuff—like where I've worked, I could say—but other companies as well. That doesn't get mentioned much. I don't know what that's all about.

Gist: It's mostly about the feeling that "you're going downriver with these guys, and if they like you so much, you must be sleeping with them." That was really one of the bottom lines that I got from them. I actually finally did a trip with Leslie, and she came back and gave me the thumbs up to her sisters and her mom and everything, and they couldn't have been nicer to me after that.

Steiger: Okay.

Gist: It was just a misunderstanding that I had no idea why I was getting that cold shoulder.

Steiger: So you did a trip with Leslie, and you guys got along, and after that it was...?

Gist: Everything was different for me at the warehouse. So Irv is doing a partial season at Diamond as swamper, and we're not really getting to do very many trips together, swamping together, but he's working, I'm working full-time as a swamper, he's part-time doing that, and then the rest of the time he is either training for his skydiving, or he is coaching. He was going to Norway to coach a team over there during the summer. So he was just a part-time guide as I was doing the full-time. We lucked into a permit, a private, I think it was in '89, and I got notice we got awarded it, and it was for November. It was '89. We pioneered a route up to Powell's Monument, up on the

Vermilion Cliffs. Do you know what I'm talking about? So Cathedral Canyon—you know, Cathedral Wash there. If you take that drainage to the top...

Steiger: Oh, that's the finger that sticks out from the cliff?

Gist: Yeah. As far as I know, Irv and I were the first ones to figure out how to get up there. We went up there, and you cross behind that finger and work your way up to the top. It was sketchy in a few places. Irv proposed to me up there in '89.

Steiger: Oh-kay! That's pretty romantic.

Gist: Yeah. And then so we were still trying to figure out when to get married, and we had a two-week backpacking trip. I had made a stash on my last Diamond trip—you know, a little food stash at probably Bass, at the boat beach. And so we did a two-week backpacking honeymoon. Not very romantic, but it was a *wonderful* trip to go explore all those side canyons. We'd leave our packs on the Tonto. We went down South Bass, did that arch and spire again, and then came down to the river at Garnet, and then picked up the Tonto and just hiked back upstream. Each time we would leave our day gear, grab our canteens, go down to the river, have lunch, fill up with water, go back up and hike around a couple more points until we were behind another cool side canyon, which were mostly all the gems. Turquoise was tough to get down, but I bailed on Sapphire. I turned around on that, it was just getting a little too steep for me to be comfortable. But we wound up going all the way to Hermit. So we walked down Slate, and then we made it up to Hermit, and then hiked out the Hermit Trail. We had a granola bar left. (laughs) After two weeks of hiking, it was semi-epic, but it was fun! That was great. That was '89. We got married at the courthouse there in Prescott.

Steiger: Oh, nice place to get married, yeah.

Gist: So fast forward now, going through the Diamond years, in '91 now...And I've got to tell you, every time I saw [Mike] Denoyer on the river, he'd put his arm around me and go, "You know, you've always got a place at GCE [*Grand Canyon Expeditions*]."

Steiger: Yeah. And was that before he'd ever done a trip with you? He had his eye on you...Didn't something come up where you or Irv, they needed somebody, and you broke in over there?

Gist: That was the thing. I mean, he would say that to me, and I'd think I was still a swamper, and I thought, "Man, there is no way I'm going to fit in with Bob Dye and Neil Ekker, and O.C. [Dale] and Stuart." You know they were my river gods. They were so head and shoulders above me I couldn't even think about working for the same company that they did—and also I knew that they didn't pay their swampers. I'd just kind of nod my head and go, "Oh thanks, Mike," but I didn't take him too seriously. And I got...If you remember '91, there were a few years there where we had some low water, 5,000 [cfs], where they did a lot of aerial surveys, I think.

Steiger: All that science.

Gist: Yeah. So I gotta tell you, Rondo Joe [Buecheler] (laughs) came and did...I swamped for Rondo at 5,000, and it probably was toward the end of 1990. He was the one looking at me and going, "Oh my God, how many trips do you have?! You should be running your own boat by now!" He said, "Well, we're just going to trade off on rapids." I kind of went "(gulp) Okay."

Steiger: Five thousand [5,000 cfs], yeah!

Gist: So we were just going back and forth. And I tell you, I was just right at that peak moment of your life when you're ready to learn advanced techniques. There came Rondo, driving this motor-rig at 5,000, showing me that ghost run at Horn Creek, yeah.

Steiger: You did the far right run, did you?

Gist: Yes, we did. Yeah, I mean, stuff like that, I *really* could appreciate it then, the things that he was telling me. So he was a huge influence right when I needed it. And so the next year when we had that low water again, I was asked to do a science trip, just kind of loaned out by Diamond. And I took a cable to replace the cable at National. So I had this great big spool on the front of my boat, and welding torches and stuff in the hatches... That's when Lars Niemi was the "mayor" of National. So I was bringing them ice, I was picking up some random science guys at Phantom Ranch, and right before I left, [Tom] Workman comes up with these trees, little willows. They're in these five-gallon buckets. He goes, "Can you take these to Phantom Ranch? I actually don't care if they get there, I just need to put them on your boat, and get them out of Lees Ferry." (laughter) He said, "You don't even have to tie them in."

So I've got this spool of cable on the front of my boat, and in around it, I've got all these trees tucked in, that have nice leaves. I mean, they're five-foot trees—you know, little. And I remember Claire's down there, he's looking at me, going, "You brought your own shade, didja?" And Workman is trying to get me to leave because the water hadn't dropped yet. Workman said, "You can leave early and get a head start before the water drops." I said, "I would be more comfortable waiting for this other person that's coming, and running the whole time with that other person." And he said, "Okay, whatever you think." It turns out it was Mark Tittle.

Steiger: He was a GCE guy then too, wasn't he?

Gist: I don't remember. It just made me more comfortable, because neither one of us had another person on the boat.

Steiger: No swamper? Just take that boat down there all by yourself at 5,000?! Holy moley! That must have been heavier than...How much did that weigh?

Gist: It was on the Diamond boat, which that frame is pretty heavy too. But all I had in the hatches were the acetylene tanks and torches, and then I had a cooler full of ice, and then my personal gear. To tell you the truth, it didn't handle that much worse than anything.

Steiger: Yeah.

Gist: Yeah. So Mark and I, we depart. He shows up that evening, I help him rig, and we push off really early the next day. We fought our way down...It seems funny now, but it was exhausting at 5,000. We get down to Saddle and there's boats there, it's a Wilderness trip, I think Wyatt was on it. He's a doctor now, right?

Steiger: Yeah. He's *my* doctor! Wyatt Woodard.

Gist: Yeah. I'm pretty sure he's on it, and I can't remember who else, but anyway, it's about to storm and rain, and those guys feed us dinner and let us...You know, I sleep under the kitchen table, up there out of the rain. We strike off the next day, and we need to be just above Phantom. I remember we were stopped, and we were looking at Hance, 5,000. There's a couple other science trips there, and Hatch boats, and I remember, I think it was Ray Pope, ran it straight. I'm pretty sure that...Yeah. And just kept it straight. I think [Steve] Bledsoe was driving a science boat, and he said, "Well, I guess straight is the run today." And he left. I went, "Oh-kay." You know what I mean? I'd never run it straight. But he said that was the thing to do, and I did it—somehow. I mean, it was just one of those lucky runs that you do. It was so low.

And I had the two Hatch boats and the science boats and my trees. By then they were still hanging in there. I'd talk to the trees and tell them to hang on and stuff. I'd tell them a story sometimes. (laughter) I remember getting to the bottom of Hance intact, and everybody was cheering because of the trees. They were all cheering my trees.

Steiger: Did you tie them in? I'll bet you did.

Gist: No, they were just wedged in there. I mean, they weren't just loose. Yeah. So the other thing I remember about that is...I was pretty happy about that. I remember Hatch was waiting for their other boat to run through, and Mark and I went, now I'm trying to get through Grapevine at 5,000. I get to the top of Grapevine, and I spin the boat around, because I can't decide really where to go. It all looked so skinny.

Steiger: There's just nothing but rocks.

Gist: It was nothing but big rocks all over the place, and I'm thinking, "I'm not sure this is right anymore." So I turned around and I looked around the corner and here comes Hatch, and I let them go by. I go, "Oh *that* one! I wasn't even *looking* at *that* spot." You know? The whole gorge is nothing but a little waterfall and then a calm pool, and then picking your way through the next little rock waterfall, and then...It was all so slow, and everything was great, and I got the trees off at Phantom Ranch, picked up one guy. Finally I had a guy on my boat—what a luxury!

Steiger: Somebody to help you!

Gist: To work the boat. We're going down, and we take a look at Crystal. Mark asked me if I'd ever gone left at Crystal, and I said, "No, I don't know the left run." He said, "Neither do I." I said, "Well, it looks like I can squeak through on that right side, so I'm going to try it." So I'm reversing out of Crystal, and I've got the science guy on

my boat, and I can't get the motor back into forward gear. It's stuck in reverse, that's all I have, I don't have a forward. And I had scouted, pulled in at the high place, not at the—you know, you could have pulled in lower, for sure.

Steiger: The shift linkage, something rattled loose or something?

Gist: I don't know. I pulled off the cover and I was starting to get desperate. There's no way I'm going to run Crystal with only a reverse! And so I told the science guy what was going on. I said, "I only have reverse. I'm going to get as close as I can to the shore, and I'm going to need you to hop off and try and stop this boat, be able to tie us up, hold us, before we get down too far. I'm going to just get us as close to shore as I can." And so we were basically sideways along the shore, and he popped off, and the adrenaline, he got the boat stopped. It wasn't super-fast current. I still couldn't figure it out. Turned out there was a loose bolt that had just gotten underneath the engine.

Steiger: Right there where the shift...

Gist: Yeah. I had no idea. I swapped out the engines, just because I didn't...Mark had already gone through. He was waiting for me. I wanted to go catch up to him so he didn't worry so much, so I just swapped out the engines after I couldn't figure it out. It was so easy at the shop, why it wouldn't work. Oh! that was so infuriating! But anyway, there was plenty of room over there.

Steiger: On the right?

Gist: Yeah.

Steiger: You got around over there.

Gist: It was skinny, but you know, that hole just shrinks, and it just leaves that little gap, and it was okay. And after that, it was just all gravy down to National. All I had to do was ferry the guys across a few times with that cable, to get them...So that was '91, and I did another Diamond trip as a swamper, and got a phone call asking me if I could kind of do a burn-around as a loan-out for Grand Canyon Expeditions, doing a support trip for two weeks.

Steiger: For their first dory trip?

Gist: Yeah. Well, it wasn't their first. Connie did their first. But this was they needed a support boatman. So I had time to wash my clothes, and I showed up at Lees Ferry, and Marty [Mathis] gave me a tour of my already-rigged boat. I was very celebrity right then—showing me where things were. I mean, he's just opening up stuff and going, "This is here, and here's this box." You know how a GCE boat is. It was all new to me—I didn't know where anything was. He said, "Yeah, we've got this here, and this here, and this here. And don't worry, the guys are going to help you out during the...They helped pack it, so they'll help you out." And off we went for a two-week trip, with Denoyer as the trip leader. And, as it turned out, I never went back to Diamond.

* * *

Dory support for GCE, 1991.

Gist: Anyway, I am a product of every single person I swamped for. And I got to cherry pick all the good decisions, the way they handled things, their runs. I am such a conglomerate, maybe more so than other people, because I had so many swamping trips, working and seeing. By the time I got a boat, I was able to be super-confident and have a knowledge of what to do, and what not to do down there.

* * *

Gist: So I'd do the river season, and then go back to Skydive DeLand and do the student training, and Irv would coach, and then come back and do the river thing. We got married in '89 and we got divorced in '98, and we did about half of our GCE trips together, about five trips a summer. Our problem was that we were just too competitive with each other. That was always our big downfall about who could bake the better cake, who could have the sweeter run, who could have the...It was not really peaceful.

Steiger: You guys seem to have handled it pretty well, I must say. That seems to have worked out for everybody quite well.

Gist: I'll say it has, yeah, because we've been able to be friends through it all—still be friends. And I like Jen and he





Redwall Gavern, 1994.

likes Cowboy, and so what more could you ask for? It'd be easy, I think, for us to do a trip together, or a private. We haven't yet, but I see that could happen in the future.

Steiger: Was it one person's idea more than another, or

did you just mutually come to this idea, "Hey, let's don't be married anymore"?

Gist: No, it was a bit mutual. We couldn't figure out how to really do counseling. I mean, you work on a relationship and you try different things, and when it doesn't work, then it's like, well, how happy do you want to be? *But*, so, yeah...Yeah, I met Cowboy back in '93. Val Slocum is a skydiving buddy that was on Irv's private trip, that I knew. I met her in 1978. She has connections with Connie, they were both flying and skydiving together in Coolidge, Arizona. Again, that same circle. She did GCE trips with me at least once a year. I did a private in '94 with Val and her husband Jim, and Irv and I, and Myron Cook...So anyway, 1993 at Val's place. She got hired for Flying Tigers, and then FedEx bought out Flying Tigers, and she wanted to have her FedEx pilot friends and her skydiving buddies all get together at a party in October. So I'd go out and swamp for her party.

Steiger: You go to the party, and there's Cowboy [*Jimmie Gist—senior FedEx pilot, former fighter pilot*].

Gist: Yeah! The first time. So I knew this guy. He'd show up, I'd see him once a year, starting in '93. He was fun to hang out with. You know him, it wasn't like I was...I had a hard time picturing the two of us together. It seemed like he was this international traveler with a woman at every airport or something. I had that impression. And he came on a river trip, and I got to know him, as you do in the canyon. What happens? You're stripped down to the real person, the real human. There's no hiding anything down



Lava Falls at 20,000 cfs.



At Elves Chasm with Cowboy, laughing at Bobby Skinner's antics, 2021.

there. And I got to see a whole different side of him and went, "Huh! I like this!"

Steiger: Well, it seems to have worked out quite well, looking at it from afar.

Gist: Yeah. You know, this is coming on our twentieth wedding anniversary this month.

Steiger: Oh my God!

Gist: Yup. Yeah.

Steiger: Boy, it's going so fast. Who knew we'd get old so quick? I can't believe it.

Gist: Yeah. So I've got three step-kids, two girls and a boy, and we just had twins a week and a half ago.

Steiger: Twin grandchildren?

Gist: Yes! Number 6 and 7.

Steiger: Oh my goodness. That's a good thing to have as we age, isn't it?

Gist: Well, it's funny, people talk about how they would have skipped having the kids and just gone for the grandkids, and that's what I got! I got the best of everything.

* * *

Steiger: Okay, just looking at your whole river-running career, I want to know, if you had to put it in a nutshell, could you say what's been the best part of it all for you? You know, just being a "professional boatman in Grand Canyon," could you wax eloquent on all that shit for me? (laughs) You don't have to. Just sayin'...Or do you have another real good river story for me? Either one of those. Well, let's start with the first. If you had to say what was the best part of it all, what would that be?

Gist: It's a very personal thing, and it's the reason why I believe guides have such trouble leaving the canyon, because while you're down there, being their guide, you have these strangers that are totally dependent on you for everything. I mean, you're their guide, but you're also their nurse, and their doctor, and their interpreter, and their camp helper. You're guiding them through not only the river and the canyon, but every phase of their life on that river trip. And it's like...They give themselves over to you—don't you feel? And that's so much power, and the adulation. That part of it becomes addicting, and I know that's that part where...I can't wait until people come around the corner to look at Elves Chasm, to look at the waterfall. I get such a rush off of their face, the way it lights up, and they go, "(gasp)" I feel like I'm seeing it again through their eyes. And around the corner, here's the color of the LCR [*Little Colorado River*] when it's blue. There's certain astounding things down there that I can't relive it again for myself, but showing people that, and feeling that feeling of seeing it with those new eyes again—that, to me, is pretty addicting, and in a way it's like a selfish thing. Those are the most fun trips that I have, when I have groups that are so appreciative of the canyon, and looking at how hard the crew is working. But I have a hard time with the people that have "been there, done that, what's the next place?" That, to me, they just suck the life out of me, those trips. I don't know how to change that part of it, but there's enough people that feel the *magic*. That first hike I did down there, Lew, what happened to me there, I feel like I want to show that to other people *some way*. And I know that adulation I'm getting off that river trip, it goes away in a second, because they remember the place, they remember the canyon, they don't remember their river guide.

Steiger: Well, I wouldn't even...I wouldn't say adulation, I'd say validation. You know? Maybe it's you—maybe they adulate *you!* (laughs) I never get that, I don't get adulation, but I at least get *validation*.

* * *

Steiger: Well, this has been pretty good, Sal...Do you have another story you want to tell me?

Gist: Okay. Well, it was 1981, and I was in Oregon, coming out to California to go back to school, and a friend [*Tim Davies—a skydiver/master rigger*] wanted to hitchhike with me, and be dropped off in L.A. We were driving out and he said, "You know what would be great? To stop off at Yosemite and jump off El Capitan." (laughs)

I looked at him and said, "Sure. Of course." What do you do when you're 22, 23 years old? So we drove into the park and we were getting some supplies. We had nothing: we didn't have a day pack, we didn't have anything to really do this—just our shoes and our desire—and our gear, of course. So we're looking around, thinking we need some snacks, and maybe dinner that night. And lo and behold, I ran into a group of skydivers I knew from my drop zone in California, and they were there to make... They were going to hike up that day, spend the night, and then jump off in the morning, because for a short time it was legal to jump off of El Cap in the eighties.

Yeah. But you had to have a permit and everything. So we hitched a ride with them to the trailhead. We were able to leave our car parked in a parking lot. It was kind of back before they cared that much about where you were. We left the Mustang parked off the side of the road, near this little valley, and we started up the trailhead with this group of folks, had an incredible...It was a great hike. I was hiking with Tim and about eight other people. An incredible thunder and lightning storm happened while we were up there, exposed on this granite rock, and we all had to run for it and take shelter. You know, it was that boom-crack of lightning. It was kind of one of those dry lightning storms, so it didn't get us wet, it was just trying to kill us. (laughs) So then we get to the top, and they are camping out, and they're going to spend the night, and then jump off first thing in the morning. So Tim and I go to the launch site. We sit and watch the sunset, and I'm looking across the valley. I'm thinking, "Ooo, I don't know about this. Are you sure this is the spot?" That was the biggest factor. He said, "Yeah, this is it." I'm going, "Yeah, this is pretty exciting." The view, when you're up there, is you're looking across and up the valley toward Half Dome.

Steiger: Had you ever done a base jump before?

Gist: No. But El Cap, the top is like 3,000 feet, so for a base jump, it was very safe. Plus, the launch rock is undercut, there's an overhang, so you don't have to work that hard to clear the wall, if you know what I mean.

So we go up to the top, and we're up there, and we head down. It's close to midnight, maybe eleven o'clock, and the full moon is coming up—it's a full-moon night. We're walking out to the launch spot, and there's three guys up there already. "What's going on?" "Well, we're gonna jump off." This guy soloed the nose of El Cap, and his climbing buddies brought up his skydiving gear so he could jump off, and then they were going to carry his climbing gear for him. Yeah. Randy Leavitt [*a pro climber, who was famous fro making some big wall ascents in Yosemite. He was solo climbing (with protection) the nose of El Capitan. It was a big deal back in 1981*]. So Randy's begging us to not jump right behind him, because they don't want to get caught. They don't want to have too many people.

Steiger: They might not see one or two, but they might see four?

Gist: He's got a walkie-talkie, he's got the whole setup with his ground crew, he's all taken care of. So we promise we'll give him a half an hour at least. He goes, "Okay, you promise!" He was really adamant. "Yeah, yeah, man, it's cool. We'll just hang up here until we know you've made your getaway." He said, "Okay, because those guys are really out to get me." So he and this other guy jump off, just disappear into the darkness. It looks like an abyss, because it's lit up on the top with the moonlight, and you're jumping off into blackness.

Steiger: Oh my God!

Gist: I'm waiting for them. As they disappear over the edge, I'm waiting for them to hit something. I know it's the wrong spot. All I hear from them is, "Beautiful!" clear as a bell.

Yeah. They jumped off, disappeared, and I heard, "Beautiful!" And then we wait up there, waited, and his buddies took off and started doing their, I guess, evening hike down the trail, and we waited for a long time. It was about midnight. Tim said, "Are you ready?" I said, "Yup, I'm ready." The moon by that time was right in front of us. He said...The launch looks like a diving board, only it's canted down about, I don't know, thirty degrees, so the tendency is to run off this rock and actually do a front loop, because you're going downhill. So it's really important, on this particular one, to really keep your chest up and your head up and go off extra vertical.

So he said, "Just keep looking at that moon, Sal, and we'll be okay. We'll just watch up and look at the moon." I did that, and it was a perfect launch. We were holding onto each other.

Steiger: You went together?

Gist: Yeah, so that we could get a kiss in freefall before we separated. So I've got ahold of the side of his rig, down by his hip, and he's got a side of mine. I said, "Ready. Set. Go." And we launched at the moon, and then just kind of started to pick up speed. I looked down just right about then as we were levelling off, and I could see the face of El Capitan, and it was the most...It's hard to describe. It was so lit up by the moonlight. We started off launching into this black, but as soon as I saw the face that was lit up by moonlight, it was all these colors—the black and the orange and the yellow, the stripes that the water has made on that rock.

Steiger: Whoa!

Gist: That color. And they started going by my face like this, and the speed and the color was picking up at the same time. (Whoosh!) like this, and I was staring at it. I mean, I couldn't take my eyes off it, because that's the first time you get that sense of speed in freefall, because everything else is relative, everybody's going the same speed.

Steiger: Well, you're out in the air, you're not going by anything.

Gist: Right. So I'm looking down, just staring at this. Tim starts shaking me, like, "Hey, hey!" I'm looking up, I say, "Oh

yeah! Mm-wah,” give him a big kiss. And then we break apart and open our parachutes. I opened my parachute a little bit low. I had a little trouble with my opening. I opened with an offheaded opening, so instead of opening and flying straight to the meadow, I was facing the wall. So I had to kind of do a turnaround. I made it into the meadow, but I remember thinking, “This is gonna be close.” I wound up having to pick my feet up to clear the tops of those pine trees, and kind of steering a little bit in between them. I landed first, and I looked over and watched Tim land. We ran towards each other and hugged each other and looked back. So we’re bathed in moonlight in this big open meadow, looking at the top of El Capitan and thinking, “We were just standing right *there*, and now we’re *here*.” It just seemed like a remarkable, weird, “Star Trek” transportation, “Beam me up, Scottie,” kind of moment.

Steiger: Wow!

Gist: So then we go ahead and we just kind of camp at large right by the Mustang, and in the morning our friends all jump off, and we’re cheering for them, and we hug and say goodbye, and I drive into L.A. and drop Tim off at some intersection in downtown L.A. off of I-10, and then say goodbye and thanks. He’s hitching a ride to I don’t even know where, but that’s where he wanted to go, and I went back to school. I read in a skydiving magazine several years later, that that whole deal with Randy Leavitt jumping off, they were busted, they got caught down there. The park was waiting for them. They had no idea any other people were jumping that night, but they caught him. I jumped off with \$250 in my pocket, because that was the bail money to get out of jail. (laughter) Just in case, if I get caught, I can get out of jail. And the whole deal was they were going to confiscate your skydiving gear, and you might or might not get it back. Anyway, so Randy had to go through all of that, and he was kind of one of those rock-climbing figures in Yosemite, and even all around all over the place. Yeah, they had his number. Somehow he got turned in and caught.

Steiger: That hurt their feelings.

Gist: I never knew about it. Everybody was gone when we did it. They were busy with him, I guess.

Steiger: Yeah, little did they know.

Gist: Right.

Steiger: Now, you drove out there in a Mustang?

Gist: Yeah.

Steiger: That’s how you got the name Mustang Sally? What was the deal there?

Gist: Do you want to see it?

Steiger: Yeah, and I want to hear about it, because, c’mon, you know.

Gist: It was my mom’s car. She got it new in ’65, and then they let me borrow it so I could go to school in California. And I’d come home and they’d look at it. It’s that typical kid thing. After a while, they just gave me the pink slip and said, “Well, you’ve been driving this longer than we have, so you can just keep it.”

Steiger: Oh-kay! Was it red?

Gist: (laughs) No, it’s actually just a regular—kind of one of the least collectible Mustangs you could ever get. (laughs) Not a convertible. It’s a coupe with six cylinders, honey-gold paint job.

Steiger: Those were cool cars, man.

Gist: I’m sorry, it means a lot because it’s the car I grew up with, and Mom bought it new, and I’ve kept it and restored it.

Steiger: You still have it?!

Gist: Yeah.

Steiger: Oh yeah!

Gist: It’s in the garage.

Steiger: And so they started calling you Mustang Sally on account of the car you were driving?

Gist: Yeah, I used to keep it in the parking lot, the fourteen-day lot, and then drive it. When I started working for GCE, I would just keep it out there, and drive it when we had to do ferry duty.

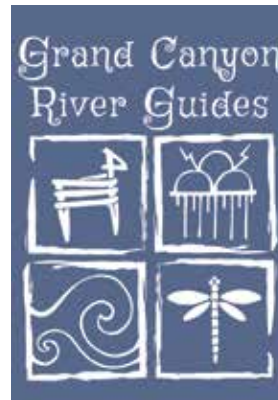
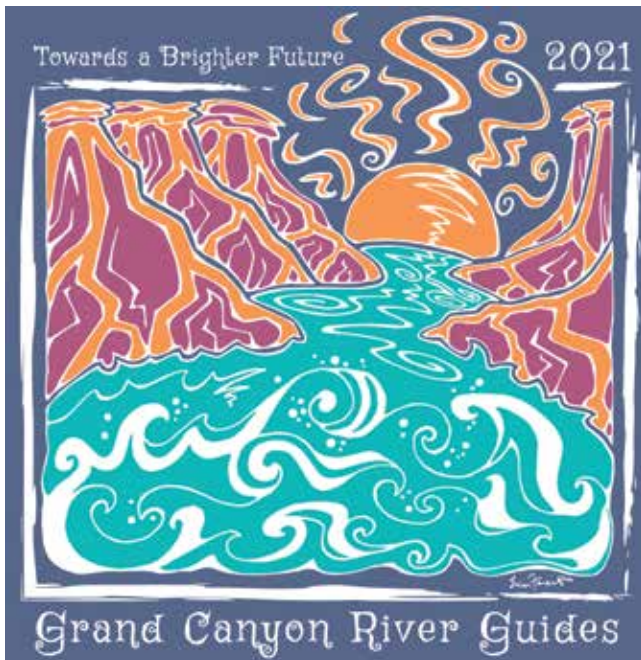
Steiger: (laughs) Because they didn’t have a ramp truck then?

Gist: Yeah, you were stuck there unless you could borrow somebody’s car, so I just kept it out there. And then I would leave it and park it up at Connie’s house.

Restored 1965 Mustang “Honey Babe,” by Lake LBJ, Horseshoe Bay, Texas.



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Front left chest of shirt.

Short and long sleeved shirts are indigo blue, and the hoodie is heather grey.



- \$20 Short-sleeved t-shirt size (S, M, L, XL, XXL) _____
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Back of shirt.

Erica Faerio, Artist | I have been a guide for Arizona River Runners since 1997 and I currently serve on the board for GCRG. My paintings (and the occasional t-shirt design!) are inspired by the magic and beauty I see in Grand Canyon and surrounding Colorado Plateau. I have come to realize that the cycles and seasons of the natural world can serve as a reflection for our own day to day living and relationships. I believe that nature can teach us how to more gracefully navigate the rapids of our own experience. After all, we are nature too! This is one of the many messages I attempt to convey through my art. I believe that art is a powerful tool that can be used for teaching, learning and for advocacy. Art can open our hearts and minds to different perspectives, ideas and emotions and help us to see that we and all living things are connected on a very fundamental level.

"Towards a Brighter Future" is the 2021 GTS and t-shirt design theme. This past 14 months has brought challenges of oh so many shapes and sizes that we have probably felt (or are still feeling) overwhelmed by. Whether we are grieving, dealing with relationship issues, or health or financial challenges, may we all have the insight to see that the storm will pass. The sun is always there, shining bright inside of us and it is only ever temporarily obscured by the clouds. Hang in there, everyone! Hopefully with a newly elected administration, schools back in session, vaccinations well on their way and a full river season ahead, life will resume a feeling of normalcy. Speaking for myself, it is during these difficult times that my gratitude only deepens for our loving and supportive Grand Canyon community. How very fortunate we are to have each other and the moments, days, weeks and years in Grand Canyon. So, chin up, take care of yourselves, think "rain!," have safe runs and know that something good is coming. www.ericafareio.com

Care To Join Us?

If you're not a member yet and would like to be, or if your membership has lapsed, get with the program! Your membership dues help fund many of the worthwhile projects we are pursuing. And you get this fine journal to boot. Do it today. We are a 501(c)(3) tax deductible non-profit organization, so send lots of money!

You can pay securely on the GCRG website at gcr.org or send a check to: Grand Canyon River Guides, PO Box 1934, Flagstaff, AZ 86002-1934. Note whether you're a guide member or general member.

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- \$350 Life membership
- \$500 Benefactor*
- \$1000 Patron (A grand, get it?)*

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

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boatman's quarterly review

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



Photo: Jake Skeen