The Confluence

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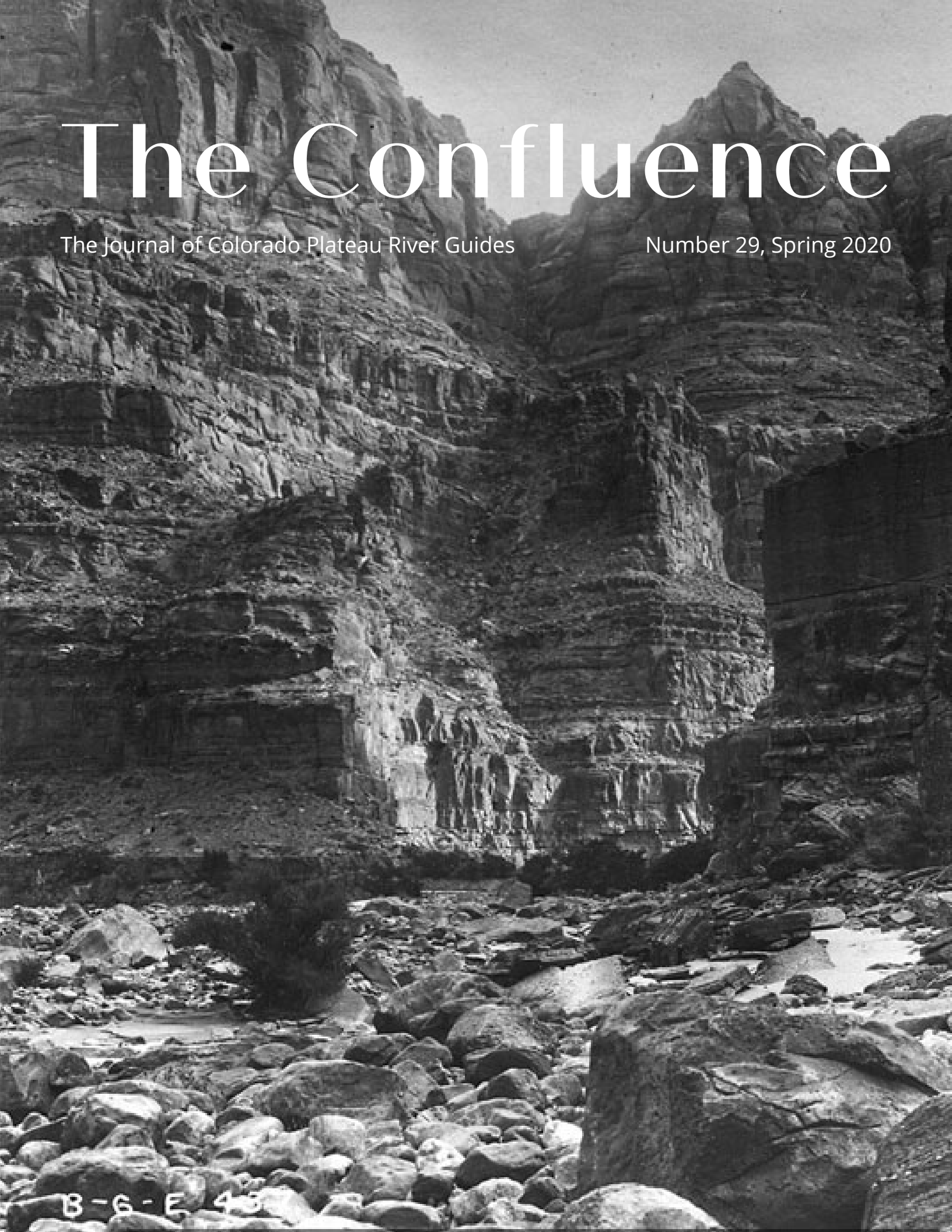

The Confluence

...wants to be the quarterly journal of Colorado Plateau River Guides. CPRG is a 501(c)(3) river and guide advocacy organization.

General Membership

Open to anyone who loves to work and/or play on the Colorado Plateau.

CPRG Board

A SPECIAL THANKS to our donors:

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We are always looking for member content!

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On The Cover

Dark Canyon entering Glen Canyon. Taken during the 1909 river expedition of Nathaniel Galloway and Julius Stone, accompanied by photographer Raymond Cogswell. Their three month journey took them from Green River, Wyoming to Needles, California. The expedition is generally considered by historians of the Colorado River to be the first that was undertaken purely for pleasure, similar to modern river runners.
Published by J. Willard Marriott Library, University of Utah

On The Back

Dark Canyon entering Glen Canyon. Taken on October 8, 2015 @~7,000 CFS.

The Prez Sezs

Friends,

Good news, The Confluence is back! (That's about all I've got in that category) Issue 29 arrives on our screens instead of our hands, in a strange and difficult time. As the streams started to thaw and we began to dust off our jeans and pliers, whoops, I mean our board shorts and pelican boxes, our community has been confronted with the reality and struggles of a global pandemic. There is little comfort we can find in this situation other than the fact that we are not alone in this experience. In the spirit of not being alone, we are proud to be able to share this work with you, and hope that it provides education, inspiration, memories, and comfort during a time when all of that is needed. With the exception of this publication, all of our 2020 projects have been either delayed or cancelled. We are shifting our focus as an organization to see how we can best provide assistance to our community during these trying times. Please stay tuned with us for updates, and read within as well. We have printed and distributed a hard copy to lifetime members and benefactors, we will also provide this in digital format. The Confluence will be for sale when events and projects come back online. The hard copy will be a well deserved nod to our lifetime members, and a welcoming gesture to our new readers. In 2017, a group of river enthusiasts got together to reignite the old Colorado Plateau River Guides organization. Israel Garcia, Lars Haar, Casey Montandon, Sarah Sidwell, and Laurel Hagan laid the foundation and did the grunt work for getting CPRG 501 C3 status.

We thank you for your dedication to the project and your trust in us carrying on your work. In the past, CPRG played an important role in the upper basin guiding community, offering resources for education, and tools for guiding such as interpretive trips and a journal of stories and information. We are proud to provide the latest issue of that journal. It is our intention to produce biannual publications of the Confluence as we get started. We are already looking ahead to issue 30, and we encourage you to get involved in the project. I would also like to sincerely thank Robert Tubbs for his contribution of the Black George Oral History found within this issue. We look forward to publishing more of your work and helping with this important historical documentation. A big thanks as well to John Weisheit for his continuing support and help with The Confluence journal and his good grace of letting continue everything that he started. Issue 29 seems like an appropriate place to introduce the new board members of CPRG. We are an all volunteer board, and I can't begin to thank everyone enough for their countless hours of meeting, brainstorming, and working towards making these projects a reality. Resford Rouzer is the marketing director at CFI. He is also a KZMU board member. Resford moonlights as the Secretary of the CPRG board and his knowledge of the non-profit world has been invaluable to the existence of CPRG.

Marianne Becnel is a medical assistant at the Moab Regional Health Center and a Moab City Planning Commissioner. She serves as the CPRG treasurer and is continuing to work with health care providers to make sure our guides have access to annual, free skin cancer screening as well as other resources (stay tuned!). Richard Rootes has been guiding on the Colorado Plateau for many years and we welcome his insight and dedication to our project and congratulate him for recently attaining the status of retired river guide. Richard happens to be a live interpretive information machine and I encourage anyone to hop on his boat during a training trip if the opportunity arrives. Richard spearheaded the river running book project with the Grand County Library. Jake Deslauries brings a wealth of professional knowledge about the functions of a non-profit organization. When he is not busy keeping us grounded in reality, Jake is the Project and Partnership Coordinator for the USU Conservation Corps. Marshall Dvorscak is a lifelong river runner turned local business owner. He owns and operates Moab Gear Trader, an outdoor gear store that sells new & used outdoor gear & clothing. His business acumen has played an important role in our reprisal of CPRG. Go buy our sticker at his shop, support the non profit, and legitimize your van, bike, or ammo can. Finally, a big thank you to Geddy Desmond, former river guide turned GM of the family-owned Real Green Clean, who has spearheaded the Confluence project. And whether he likes it or not is the editor in chief of this publication.

We are excited and proud to deliver this important journal to you again, and hope that you will become a contributor in the future. My name is Colin, and I like to do river stuff. Currently, I am a professional bozo at Tex's Riverways. We hope everyone remains safe and healthy, and we look forward to seeing you back on the river soon.

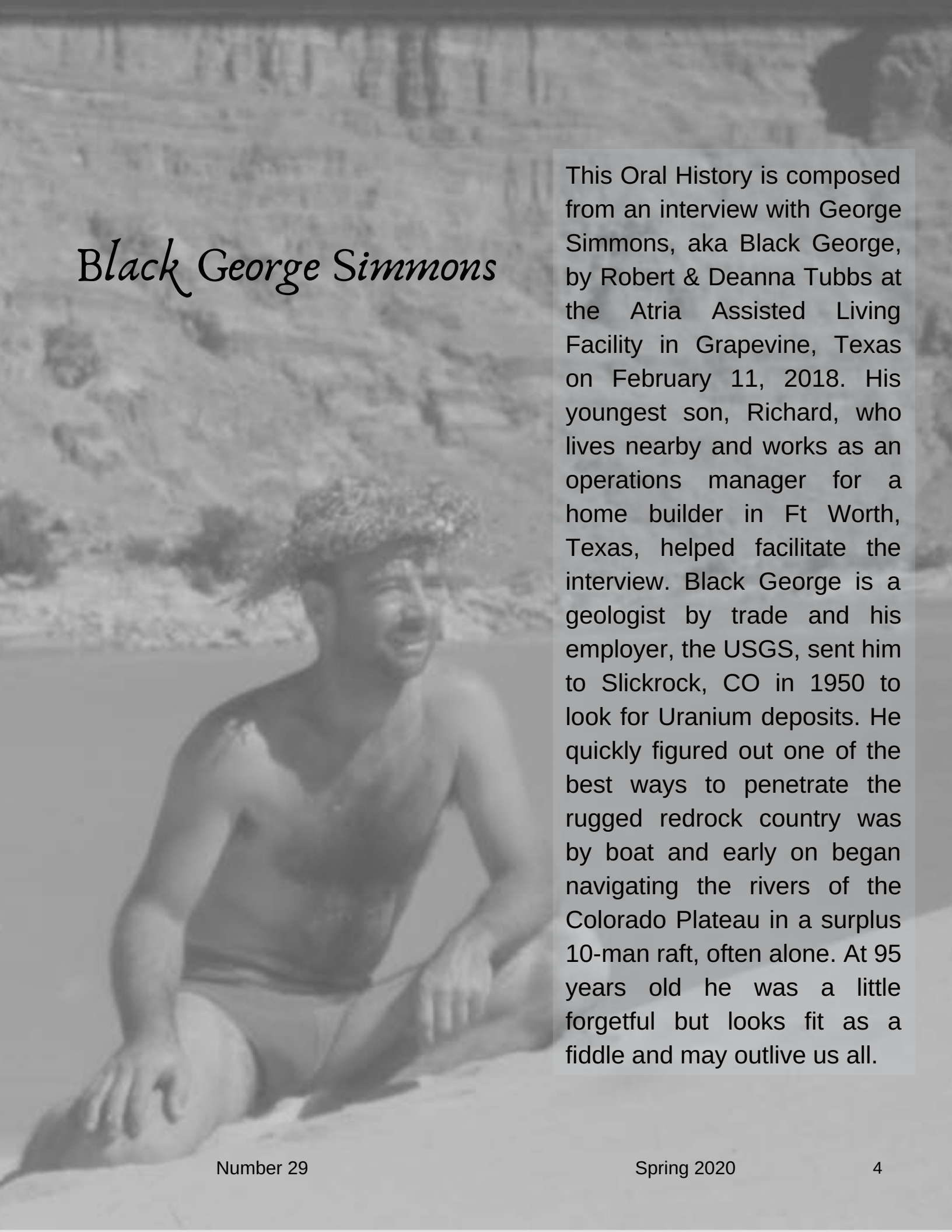
Lots of love,

Colin Evans, *Board Chair*

In This Issue

Millie Crag Bend, Galloway-Stone Expedition, 1909 Photographed by Raymond Cogswell

Black George Simmons



This Oral History is composed from an interview with George Simmons, aka Black George, by Robert & Deanna Tubbs at the Atria Assisted Living Facility in Grapevine, Texas on February 11, 2018. His youngest son, Richard, who lives nearby and works as an operations manager for a home builder in Ft Worth, Texas, helped facilitate the interview. Black George is a geologist by trade and his employer, the USGS, sent him to Slickrock, CO in 1950 to look for Uranium deposits. He quickly figured out one of the best ways to penetrate the rugged redrock country was by boat and early on began navigating the rivers of the Colorado Plateau in a surplus 10-man raft, often alone. At 95 years old he was a little forgetful but looks fit as a fiddle and may outlive us all.

Tubby: What brought you to the river?

Black George: Well, I have a good friend named David Gaskill and his wife Gudy Gaskill. I did a lot of mountain climbing, not really climbing just scrambling with them, and she started running rivers just to see what the country looked like.

Tubby: Where were you living at the time?
Black George: I think I was living in Salt Lake.

Tubby: And where'd you meet the Gaskills?

Black George: I met Dave Gaskill in 1942 at a summer field camp out of the University of Colorado which was up beyond Boulder, CO. I've been going with them since that time. Dave was actually...when I met him he was living in Kansas City.

Tubby: When was your first river trip?

Black George: My first raft trip was on the Yampa with Gudy Gaskill and a lady from Pennsylvania, a friend of hers – Helen Hartell. The three of us, and that was in September '49.

Tubby: That would be low water, September.

Black George: Yep.

Tubby: Where did you get your boats?

Black George: They were army surplus and I got them for nothing – sort of cheated for them. You could get them from the USGS. If they thought they were for government work, they'd give them to you.

Tubby: So you got a whole set of boats from the government?

Black George: They had a bunch. I think they called them, ten-man sized. They're about 14 feet long.

Tubby: So you just took them home...

Black George: ...inflatables. So we'd just take them, yeah. I had two or three of them.

Tubby: Did the Gaskills have their own boats?

Black George: Yeah.

Tubby: Same thing, ten-mans?

Black George: No, they had some other ones. They had some fives and sevens.

Tubby: Small.

Black George: Yeah, pretty small.

Tubby: How long was that first Yampa trip?

Black George: Not very long, seemed like about three days.

Tubby: Is that where you learned to row?

Black George: Oh, no. I learned to row when I was about eight years old. I lived in New Orleans. My father used to go fishing. They'd rent a cabin cruiser, and the guy who owned the cabin cruiser had a bunch of skiffs stashed out in the bayous. And we'd go out to where he had the skiffs and pick them up and go around to different places in the bayous to go fishing. So I used to row my father.

Tubby: Okay. He'd fish while you rowed?

Black George: Yeah.

Tubby: So when it was time to go down the river, you had no worries. You ...

Black George: No, I already knew how to row.

Tubby: Did you have to build your own rowing frame?

Black George: Yes, they were all made out of two by fours. We had two long ones like that (hand gestures), that would sit right on the sides of the boat. I can't remember the oar locks.

Tubby: Where did you get your oars?

Black George: Army surplus. My first trip started at Mantle Ranch. There was a way you could come in by a long back road ...didn't go up to the head of the canyon.

Tubby: Okay, so you put in at Mantle.

Black George: Yeah, the first trip.

Tubby: Okay, so you didn't put in up at Deer Lodge.

Black George: No, I went there on the second trip through.

Tubby: You did this Yampa trip and you must have liked it.

Black George: Oh, yeah!

Tubby: Then you said, “I want to go everywhere.”

Black George: Got right on to the USGS Exploration of the Colorado River, we’d use information off of those reports as to where we were going to go.

Tubby: And where were your next trips?

Black George: Let’s see...went down the Yampa first. Next trip was a solo trip through the Cataract Canyon.

Tubby: Solo, just you?

Tubby: When was that?

Black George: I guess it was 1950.

Tubby: And you were how old then?

Black George: Well I was born in ’23. {He was born September, 9, 1923 in Kansas City, Missouri}

Tubby: Okay, and you had no qualms about going down the river by yourself?

Black George: No.

Tubby: How long did you go - a week?

Black George: Let’s see, the one down the Colorado I think was eight days. It took me three days to get down to the confluence with the Green. The water was really low then. I put in at Moab.

Tubby: What time of year? In the fall?

Black George: Yep.

Tubby: What were the rapids like - pretty rocky?

Black George: I would say the rapids were much easier at low water. I would start in over at one bank and come in about one-third of the way across and break through; the river would be feeling like that; I would go in about there; take that hump over that wave and there was usually a back water there and kind of slack stuff next to the side. I tried to get into that so I wouldn’t ... I wasn’t taking the heavy stuff. Later on I would deliberately go into the heavy stuff. To start out I wasn’t sure what was going to happen! (laughter)

Boats from Black George's 1956 USGS trip. It seems entirely possible that these exact frames are still in commercial use today.

Tubby: Did you stop and look over the rapids?

Black George: Oh, yeah. Stopped and looked at everything.

Black George: I had the USGS river maps were made in 1923...5, I forget when. But I had good maps.

Tubby: You were using the plan and profile plus the maps?

Black George: Yeah.

Tubby: Yeah, those came out in the early twenties. Do you remember anything special about the rapids underneath Lake Powell like Gypsum or Dark Canyon Rapids?

Black George: Yeah.

Tubby: What were those like? Because you were one of the few guys who ever saw them.

Black George: I can remember both of those. Dark Canyon, that was pretty rough. I came way over on the left side. You get over on the right there and it really kind of funneled in and got pretty big, so I stayed on the left so I wouldn't hit the big water. When I did ride big water, I'd usually come in about a third of the way across and move over like that and you wouldn't get in the main trough but you get pretty close to it.

Tubby: Do you remember Gypsum Rapid?

Black George: Yes. Gypsum had a bad reputation but none of it was real bad in low water or I would have never made it!

Tubby: Do you remember any other rapids down there in the lower end other than Gypsum and Dark? I've heard there were rapids at Bowdie Canyon.

Black George: Yeah.

Tubby: Maybe Clearwater Canyon had a rapid, Rock Fall?

Black George: All of those I could cheat kind of.

Tubby: None of them were very hard?

Black George: No, they would be if you went down into the middle of them. I'd just get about a third of the way out and take whatever came.

Tubby: Do you remember Capsize - Number 15?

Black George: I remember the name of it, but I don't remember having any trouble there.

Tubby: That first trip down Cataract sounds pretty amazing by yourself.

Black George: I did most...I didn't live with anyone who did any boating. People I boated with were they started the boating. They would mostly go down Glen Canyon. They didn't do much of the rapid stuff. They'd do the Yampa and ...

Tubby: Any other rivers you did early on?

Black George: I did everything on the Green.

Tubby: Starting from where?

Black George: Well, I made one trip all the way from Green River.

At least 1 crew on Black George's 1956 Cataract Canyon trip opted to line their boat down the left side of Capsize.

Tubby: Utah or Wyoming?

Black George: Wyoming. I made one trip from there but there's nothing for about maybe 60 miles down to where you go into the Uinta [Mountains].

Tubby: Right. At Lodore?

Black George: No, Flaming Gorge.

Tubby: Uh-huh. So what year would that have been?

Black George: In 1953.

So this was a thing. Dave Arnold lashing boats together at Big Drop 3 on a trip with Black George in 1952

Tubby: You would have done Ashley Falls in Flaming Gorge.

Black George: Yeah, yeah.

Tubby: Do you remember that one?

Black George: Yeah, I thought Ashley Falls was overrated.

Tubby: Really! Why was that ...it was easy?

Black George: There was kind of a rock pile in the middle. You'd go down one side or the other and then come in...

Tubby: That was that? Huh. How about Lodore? When you went from Green River, Wyoming how far down river did you go?

Black George: Just to the mouth ...what's the name of that town to the north in Utah?

Tubby: Manila, UT?

Black George: Right after Flaming Gorge. I can't remember the name. We came out there near...I can't remember the name of the town in Utah.

Tubby: Okay. You passed the Yampa confluence.

Black George: Yep.

Tubby: And then you go through Split Mountain.

Black George: Yeah.

Tubby: And you come out near Jensen.

Black George: Jensen, yeah.

Tubby: So you took out at Jensen.

Black George: Yeah.

Tubby: Were you by yourself?

Black George: Yeah.

Tubby: In your good 'ole surplus ten-man.

Black George: Yeah.

Tubby: How long did that trip take?

Black George: That was eight days.

Tubby: You did a lot of rivers by yourself.

Black George: Yep.

Tubby: Mostly in the fall.

Black George: Yeah.

Tubby: Do you think Ashley Falls would have been harder in the spring?

Black George: Yeah (laughter). I did that stretch one spring.

Tubby: You did a spring trip?

Black George: There was a lot of cheating!

Tubby: That was in Flaming Gorge. You did it in the spring.

Black George: One spring, yeah.

Tubby: Wow, sometime later in the 1950s?

Black George: I can't remember. I was living in Salt Lake when I started running then I moved down to Carlsbad, New Mexico. So I made some trips from there, but they were always up on the Green somewhere. On those I'd be by myself.

Tubby: You were still with the USGS in Carlsbad?

Black George: Yeah.

Tubby: How did you do your vehicle shuttle when you were by yourself? Someone would drive you in?

Black George: Yeah.

Tubby: And they'd just meet you in a week or eight days at certain locations?

Black George: Yeah, one time I shuttled myself and hitchhiked back. Every river trip's a story.

Tubby: Did you ever get back to the Yampa after Warm Springs was formed?

Black George: Yeah, I've been down through it. I never did think much of Warm Springs. It was low water. I didn't think much of Warm Springs.

Tubby: Overrated, huh?

Black George: Yeah.

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Tubby: So, tell me where you grew up.

Black George: New Orleans. My father was a professor of journalism at Tulane University. We moved to New Orleans in 1924, so I grew up there. I was there until I was 18 years old. Then I went into the service for a couple of years. I came back and went to school at Tulane in New Orleans.

Tubby: Growing up did you spend a lot of time in the outdoors?

Black George: I liked the outdoors, but we lived right in the city of New Orleans, so the most outdoors I had was Audubon Park.

Tubby: What drew you to spend your life field mapping for the geologic survey?

Black George: I got interested in geology - I don't know when. The family used to travel in the summer time. I just liked it in the mountains in Colorado.

At Tulane I started out in geology. They did mostly oil work and I wanted to be outside. While at Tulane, I went to the University of Colorado's geologic field camp out past Golden, CO - about ten miles past Golden. I just liked the outdoors. I didn't want to be inside all the time.

Tubby: You were finishing your degree at Tulane, but you went to the University of Colorado's field camp?

Black George: Yeah. I graduated Tulane in 1948. Looking around I found a university that I thought had a good outdoor program at Washington State for graduate school, and I really started my career from up there. I had summer jobs with the Washington State Geological Survey.

Tubby: Doing mineral work?

Black George: Yeah, I was looking for mines and mineral deposits.

Tubby: Hard rock? Copper?

Black George: Hard rock...copper, lead, zinc.

Tubby: Maybe some gold?

Black George: Yeah, gold - silver: always interested in the precious metals.

Tubby How about the war? Did it get in the way? Did you serve in the war?

Black George: I was in the naval reserves there for about three and half years, but I didn't go overseas. It was all over the [east coast] - I was in an anti-submarine [unit]. I was a tail gunner on a dive bomber {the Douglas SBD Dauntless aircraft}.

Tubby: Where'd you fly out of?

Black George: Several places in Florida, also up in Rhode Island.

Tubby: So this was a few weeks a year?

Black George: No that was full time. Yeah, '43...I guess I went in full time in '43, but I got into the naval reserve in '41. I was going to school in Tulane, and they had a ROTC unit. That's where I started out.

Tubby: Where were you stationed when you were full time?

Black George: I was at three different bases in Florida. I was at Key West.

Tubby: That sounds nice!

Black George: Oh, that was great! I'd like to be down there around Christmas time. It was just great! I was there and I was at, let's see, Opa-Locka just outside of Miami about twenty miles. Then I was at Jacksonville for about three months. Then I was at Rhode Island at a place called Matunuck, that's where we pulled Liberty... but there's, ...a, ... can't remember the base in Rhode Island. Not at the big base; it was a small one. {He was stationed at a now decommissioned airfield located about 3 miles south of where Quonset Point Naval Air Station is today}

Tubby: Where did you go for Liberty? Did you go to New York?

Black George: It was a little far down there, but went to New York a couple of times. Mostly went down there... can't think of the name of town now... on the coast {Likely Providence, RI}.

Tubby: Okay, and then you were always a tail gunner?

Black George: Yeah.

Tubby: Was that fun?

Black George: Yeah, I liked it!

Tubby: Yeah, I would think so! But you never got to fly the plane?

Black George: Yeah, he'd give you the controls sometimes.

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Tubby: When did you start with the USGS?

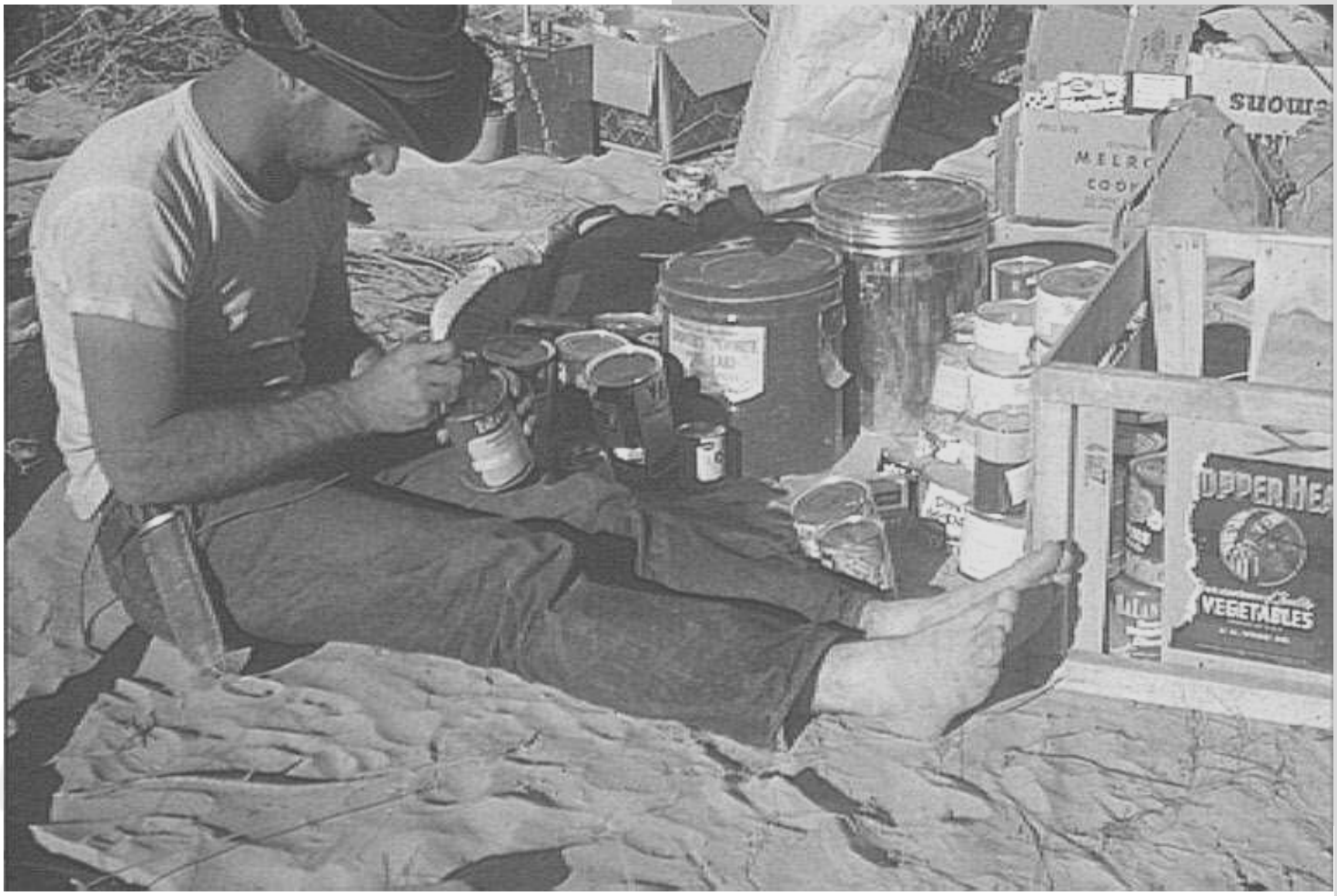
Black George: I guess I started with them in 1950. I was just out of school; getting a master's degree from Washington State.

Tubby: When you went to work for the Geologic Survey, did you know that you'd be field mapping? Was that the agreement?

Black George: Yeah. When I first started with them... I was living in Washington State and staying in Denver visiting all the oil companies trying to find a job, and then I got a call from Spokane USGS saying they could use me for fieldwork up in Montana. So I hitchhiked from Denver up to Boulder, Montana. After the summer was over, I guess they decided I was capable of doing geologic work, and so the USGS hired me and I moved on to SLC. I got a variety of experience there. I had a great job. I was working for the regional geologist. People would call in, write in, and ask questions about things, and I would go out and see if I could answer them, you know.

Tubby: That would be good work.

Black George and mother in South America



undated photo of...supplies

Black George: So that was a lot of fun! Then I got sent down to a real project. I worked there in Salt Lake for two years. Then I got sent down to Carlsbad [NM]. USGS had a long term project down there in connection with the potash mines. So I was there two years. Then the uranium boom started up, and I was moved out to a uranium camp in Western Colorado. That was Slickrock. I was with the USGS in a uranium exploration camp in Slickrock, CO in 1949 or maybe 1950 {more likely 1953 or 1954}. We were looking for ground that was favorable for deposits - thicker sandstones of the Morrison Formation especially those that were carbonaceous. That is where the bulk of the ore occurred. It was sort of a reconnaissance mission.

Tubby: How long did you stay out there?

Black George: I don't know...four years... three or four years. We had our main camp for looking for uranium there. The USGS and the Atomic Energy Commission both had teams of geologists and there then were lots of random people looking to get rich. (laughter)

Tubby: People like Charlie Steen.

Black George: Yeah.

Tubby: Did you ever meet him?

Black George: No. No, I don't think so, but I was out there when he made his big find.

Tubby: Did you ever do any trips on the Dolores River?

Black George: Yes.

Tubby: Where did you go there?

Black George: Well, you can go upstream... I made a geologic map of the Dolores mining district. I mapped the canyon wall all the way through the Slickrock district...out to Disappointment Valley. From way up where you cross going up to the Glades. I've run that from that crossing all the way down the river. I trashed a 10-man raft on the Dolores. There's a real shallow, rocky rapid and I went over there and I ripped the bottom off the boat. I was living just up the hill three miles at the time.

Tubby: You mapped by yourself?

Black George: Yeah. We had a camp of around 40 people. It was about three miles up towards Egnar from the [state hwy 141] bridge at Slickrock, CO. Those were good days. I sure liked living out there. The weather was good and there must have been three families with smaller children out there at one time; you could just turn them loose and let them go!

Tubby: That was you, you had small kids?

Black George: Yeah.

Tubby: I don't think there's anything there anymore.

Black George: No, there's nothing up there. I've been up there a bunch of times since and never seen anything.

Tubby: When you were working was there a post office in Slickrock?

Black George: Part of the time there was. I think when I first started there, but we would get our mail up...what's the name of that store up there ...Egnar.

Tubby: How about Nucla or Naturita? Were those big towns?

Black George: They were. They were busy but they were sort of a separate part of the world over there. We had a camp over there but [I'd] never go over there.

Tubby: You never went over that way.

Black George: No...cause the boundary of our district was that ridge between Disappointment Valley and ...I can't remember all the names.

Tubby: Was the mine in Uravan? Was that in operation?

Black George: Yeah, Uravan was sort of the main center for field operations. USGS had a big establishment there in Uravan.

USGS camp near Slickrock

Tubby: When was your first Grand Canyon trip?

Black George: I can't remember...let's see...I think '55.

Tubby: Who was with you?

Black George: I was by myself.

Tubby: You did Grand Canyon by yourself?

Black George: Yeah, I didn't do the whole thing. I got out at ...where you hike down?

Tubby: Phantom?

Black George: Yeah, first trip was just the upper part of Grand Canyon.

Tubby: And you left your boat at Phantom?

Black George: Yeah.

Tubby: Did you come back and get it the next year?

Black George: I'm trying to figure... a couple of years later... one trip I made I'd only been down there, I hadn't been down the Grand yet all the way through and there was a caving outfit from California and they were looking for a boatman. And that's how I got my boat down at Phantom Ranch, and I got them to pack it out for me. The horse brought it up to the South Rim and I was there to get it.

Tubby: Where did you go caving?

Black George: On the way down you come through Marble Gorge and there are quite a few caves, easy to get to. By the time you get to the Grand Canyon, they're pretty much inaccessible [except] from the river. Raymond DeSossier was in charge of it. He didn't know anything about boating; he was just the leader of the trip.

Tubby: So they went caving in Marble. Did they go into Vasey's?

Black George: Vasey's Paradise. Yeah, there's a lot of caves around there.

Tubby: Was that a long trip?

Black George: I think 10 or 11 days...

Tubby: When did you come back to Grand Canyon?

Black George: I think I've done four trips through the canyon.

Tubby: Your other trips down Grand Canyon, were they with friends or commercial?

Black George: They've been with friends. One of them was a trip with friends, but they belonged to a climbing group in Denver.

Tubby: Colorado Mountain Club?

Black George: Yeah.

Tubby: And that was also in the '50s, before the dam?

Black George: No, I think that was after the dam.

Tubby: That was after the dam. Did you notice any changes from your earlier trips from before the dam to the ones after?

Black George: No because most of my trips in the Grand were on low water. I don't know if you could tell what was low.

Tubby: How about the beaches? What were they like back in the day?

Black George: There were great beaches.

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Tubby: Did you ever go below Hite, go through Glen Canyon?

Black George: Yeah, I've been through... got to go through Glen Canyon before the dam.

Tubby: By yourself?

Black George: No, I went with some friends and we came down the San Juan until we hit Glen. And then followed Glen on down to where you got out...

Tubby: At Lee's Ferry.

Black George: Lee's Ferry.

Tubby: When was that?

Black George: 1957. I'm not sure about that.

Tubby: Did you hike to Rainbow Bridge.

Black George: Yeah. It was alright. We carried our water. There was enough water you could drink it out of the stream there.

Tubby: Do you remember when they built Glen Canyon Dam? Did you have any feelings about that?

Black George: I remember it, oh yeah. The people I boated with we were all against it. You see, Glen Canyon was really great. You could drive down a little ways and go up the side canyons. [They] were all beautiful - natural bridges.

Tubby: Being with the USGS, did you ever say anything about it?

Black George: The group I was with just was into mapping, and we didn't have anything to do with the dams.

Tubby: Your friends, did you ever meet any other parties while you were on the river or was it often you would see no one else?

Black George: No. On some trips you'd see nobody, and then there were a couple of commercial operators out of Salt Lake. Sometimes you'd see them in Glen Canyon.

Tubby: Do you remember who they were?

Black George: If I heard their name, I probably would.

Tubby: Jeez, who was running back then... well Georgie was doing trips. Georgie White.

Black George: Yes, uh.

Tubby: And then Jack Curry at Western would have been running in late 50s early 60s, I guess maybe Ken Sleight?

Black George: Yeah, Ken Sleight was pretty well known. I've seen his trips.

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Tubby: Tell me about the San Juan:

Black George: San Juan. Yes, my first trip on the San Juan was a solo. Where did I start?

Tubby: You could start at Bluff, Mexican Hat, or maybe Montezuma Creek.

Black George: That's where?

Tubby: Montezuma Creek? That is near Aneth oil field.

Black George: Yeah. We'd start just below Aneth and go all the way down.

Tubby: Were there any rapids?

Black George: Yeah, in high water there were a couple of formidable ones, but I never made a high water trip on the San Juan, so they were all easy stuff.

Tubby: I heard there was a pretty big one that's underneath Lake Powell. I don't remember the name of it. The USGS 1921 expedition where Bert Loper was the lead boatman [ran it]. That was supposedly challenging.

Black George: I run through there but there wasn't anything very formidable when I went through.

Tubby: Did you see other boats?

Black George: I had a...what we called a yellow man seven... that I ran most of the stuff in, but later on I ran in these black neoprene that we called ten-man rafts. Those were the two. Most of the stuff was done in the yellow boats.

Tubby: Were those government surplus?

Black George: Yeah.

Tubby: And they called them yellow sevens?

Black George: Yeah.

Tubby: So it was a yellow seven man.

Black George: Yeah, I've done a lot of rowing in yellow sevens.

Tubby: Did you take a yellow seven through Cataract?

Black George: Yeah. My first through there was a solo trip in a yellow seven.

Tubby: That was '52, maybe?

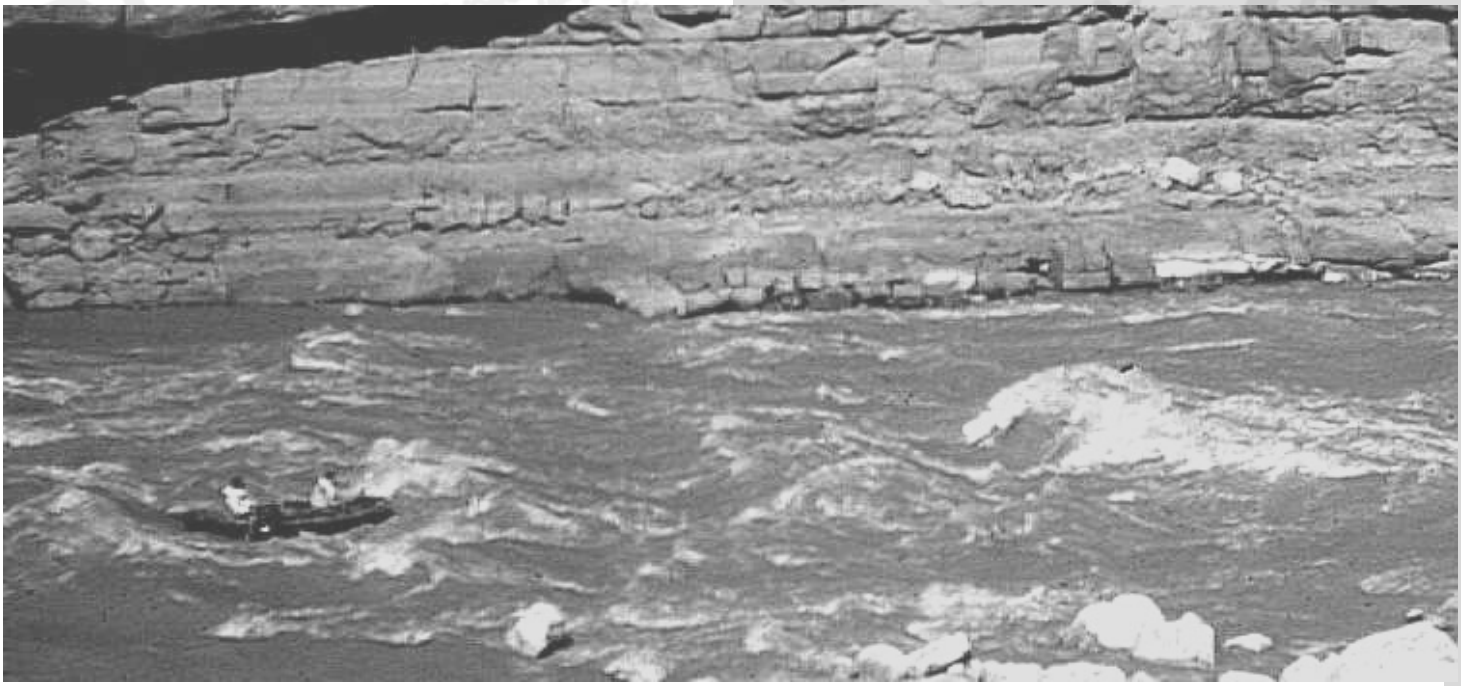
Black George: About then. '52.

Tubby: A friend of mine has your map from Cataract Canyon in 1952 where you've put a bunch of notes on it. He has a copy of that. Do you still have that map?

Black George: I don't know where any of my boating stuff is.

Tubby: And then there's also your journal from the 1956 trip? That is on the Canyonlands [National Park] website.

Black George: In 1956 I was working in Slickrock and in charge of mapping. We had two projects looking for uranium on both sides of the Colorado River, but they didn't have anybody with boating experience so they brought me in to sort of run their trip down the Colorado River from, let's see, we did Cataract Canyon. We ran that stretch from Moab down to Hite.



Undated photo of the San Juan River from the Black George Collection

Black George's USGS career took him to South America, Africa, Saudi Arabia, and all across the United States. Everywhere he went he took his raft to aid in his geologic field mapping efforts. In the jungle and areas with a humid climate, vegetation covers the rocks and the best outcrops are often along the rivers. During those years he also kept returning to the Colorado Plateau for river trips, usually with the Gaskill family.

Tubby: My understanding is you worked for the USGS overseas as well.

Black George: Went to Brazil. The uranium boom had kind of come to an end. They had enough to blow everybody in the world up! (laughter) They didn't need any more uranium. The uranium project folded up and the geologists were transferred to all kinds of different things. The USGS was trying to keep itself intact. They had a big organization they didn't want to give up. So my best chance was to go down ...foreign geology was one of the few places that the survey had money, and a lot of people didn't want to go overseas. I thought it was great, so I went down to Brazil.

Tubby: What did your wife think?

Black George: She didn't like the idea at first, but after she got down there, she really enjoyed it.

Tubby: Was your family with you?

Black George: Yeah. We were about 20 degrees south of the equator there. The youngest boy, Richard, was three when we were down there. Portuguese was really his first language. He grew up speaking English and Portuguese. He was fair headed, and boy, the Brazilians, they were crazy about him. They were dark skinned, dark haired. There was this little fair headed kid just speaking perfect Portuguese! (laughter)

Tubby: Right, right! A little out of place! Where'd they go to school?

Black George: There were a lot of Americans there and they had a community school. I forgot what they called it. There were a lot of government programs down there, and we had our fingers in all kinds of Brazilian pies at the time.

Tubby: Did you have a USGS camp where you were living with other Americans or were you on your own?

Black George: No, we had an office in Belo Horizante – Beautiful Horizon. Then we had field camps scattered all around. So I had a house in Belo Horizante. Brazil's got a lot of mineral deposits. There's one state called Minas Gerias - General Mines.

Tubby: And that's where your family stayed?

Black George: Yeah, they stayed there. They stayed in Belo Horizante. Where I worked was a field camp and I rented a house in a little town called Barao de Cocais. There had been a ... there's a lot of mining done nearby there. In older days there's a man from Austria, a Baron. The town was named for him – the Baron of Cochise. The Brazilians had made quite a bit of money out of the mining operation. Brazil had some of the biggest iron deposits in the world. They were developing some of those. I worked doing general geologic mapping in the area of iron deposits.

Tubby: And the geologists were Brazilian and American both?

Black George: Yes, but there were just a few Brazilians. They kept pretty much to themselves, and we had a big office in Belo Horizante, and our group, we had a big library with all kinds of stuff and [mineral] specimens there.

I was in Brazil for four years. I ran a few rivers there.

Tubby: You took your boat with you to Brazil?

Black George: Yeah.

Tubby: (laughter) You were thinking ahead!

Black George: There were a lot of rivers that nobody's ever run.

Tubby: What part? Were you over towards the mountains? Or were you in the Amazon?

Black George: Oh, well I was in the Amazon drainage but there's a big country out there! It's about the size of the United States, I guess, maybe a little bigger.

Tubby: Yeah. So tell me about those trips.

Black George: In those days I never really did anything difficult. It was really handy because I had a driver - he'd drive me in and take the vehicle around to where I was coming out and wait there a couple of days.

Tubby: Did you do those trips by yourself?

Black George: Yeah.

Tubby: Do you remember the rivers names?

Black George: The main was the Piracicaba, it is a main tributary to the Amazon.

Tubby: Were you in the Andes at elevation – was it more of a mountain trip?

Black George: There's kind of a step in topography there, and I was at about 3,000 feet.

Tubby: Do you remember the other rivers?

Black George: Yeah, let's see the Rio das Velhas - the River of Old Women.

Tubby: Well now, was that a good one?

Black George: Oh, yeah. There were lots of rapids!

Tubby: And all those trips were by yourself in a 10-man?

Black George: Yeah. Let's see...in the 1950s. I left Brazil in 1960. I'd say these trips were taken between 1957-1960.

Tubby: In western Brazil?

Black George: No, I would say interior. It was great climate - never got over 100 degrees and it never froze.

Tubby: Humid?

Black George: Seasonally

Tubby: Now when you did your river trips down there, was it for work or for fun?

Black George: Both.

Tubby: So you were mapping while you were boating?

Black George: Sometimes. The boating was not sponsored by the Brazilians. I did it all by myself, but I could bring in an assistant along to take samples and stuff like that. They shuttled my cars. It was pretty good.

Tubby: Did USGS give you some boats? Had a yellow seven or a ten man?

Black George: I used all my own stuff but I had all the support I needed. I could have anything I wanted.

Tubby: How'd you cook? Did you cook on a campfire?

Black George: No...carried a portable stove.

Tubby: Once you finished up in Brazil was there a big report or were you just in the middle of an ongoing project?

Black George: I might have a copy of that report here. Look around...yes, those are USGS professional paper on what I did in Brazil.

Tubby: You were doing mineral exploration?

Black George: Yes.

Tubby: Did you do a lot of drill holes or just field mapping?

Black George: No, I didn't do much drilling, mostly surface mapping.

Tubby: When you finished that up, you came back to the United States for awhile?

Black George: Yes, USGS had a mapping project in cooperation with the state of Kentucky, so when I came back from Brazil, I moved to Berea, Kentucky. There's a good little college there.

Tubby: Was Brazil your only overseas assignment?

Black George: No, I worked briefly on a UN project in Liberia a few years later. After our time in Kentucky we moved back to Denver for a few years before I went to Africa. The mineral deposits division I worked in had its headquarters in Denver. I just came back and started working from there. Whenever they needed property investigated, then go I'd out and...

Tubby: Did your family go with you to Liberia?

Black George: No, I was over there three months at a time. I did a lot of river boating, in fact, I used them for the work. Everything was covered by jungle. Most of the rock outcrops were along the rivers. We'd go down the rivers in low water - just before the rainy seasons.

Tubby: So you got more government boats?

Black George: Yep! I got practically everything done from the boats. I made numerous trips. I went over there one time on a two year assignment. Another time was just for three months.

Tubby: Your boys never went to Liberia with you?

Black George: Yeah they went with – when I was there on the two year assignment I had my family.

Tubby: That's something else.

Black George: Yeah.

Tubby: What language did they learn over there?

Black George: English. Yeah, the native languages - we never bothered with them.

Tubby: Oh, so what did you like better Brazil or Liberia?

Black George: Oh, Brazil was great. I liked Liberia - most people didn't. Everywhere you'd go they'd just ask you, "What are you going to do for me? What are you going to buy me for Christmas?"

Tubby: You were Santa!

Black George: Yeah, I liked Liberia but didn't care for the Liberian people.

Tubby: So that was in the late 1960s?

Black George: Some of it may have been in the 70s. I'm not sure. I'm looking around to see if I had that Liberian diary. I don't see it.

Tubby: Do you remember the names of the rivers you were on in Liberia?

Black George: Hummm...The Cavalla runs along the boundary of Liberia and the Ivory Coast. I ran about 120 miles on the Cavalla.

Tubby: Do you remember the rapids on the Cavalla River?

Black George: There were rapids here and there. There were some pretty good rapids! They'd usually be just below where a side stream came in ...usually a dry one.

Tubby: Were you the only boatman or were there other boatmen? Or was it some of the locals?

Black George: I always travelled with a local, kind of a guide. Sometimes they might row the boat, but I wasn't dependent on them.

Tubby: Did you run the rapids or portage?

Black George: Yeah, I liked to run them.

Tubby: That project, were you by yourself or with a team of geologists?

Black George: There was a long standing team over there. USGS had an office and there were several geologists working there. Most of their mapping would be in either mines or in roads cuts. Then the boats just gave us access to a lot more, but they didn't do boats until the end of the project.

Tubby: Was that your suggestion?

Black George: No, no. I was just part of the boat project.

Tubby: After that you came back to the United States, where were you living then?

Black George: Denver, working with the USGS office there.

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Tubby: When did you get married and raise your family?

Black George: I was married to Celia when I was still in the Navy. I think that was 1946.

Tubby: Where is your wife from?

Black George: Upstate New York – Penn Yan in the Finger Lakes region.

Tubby: How many children did you have?

Black George: I had three boys. One of them died in his thirties and my youngest, Richard, lives here in town. His oldest brother, Clarke, is four years older and lives in Arvada, CO.

Tubby: I'm sorry to hear that. Was your wife with you every time you moved?

Black George: Yeah, but she never got into boating.

Tubby: Do you remember when you got divorced?

Black George: I had been married about 25 years {= 1972}.

Tubby: How long before you got remarried?

Black George: About a year and a half, I think.

Tubby: Has she passed or...

Black George: No, my second wife has a writing career of her own. She lives in ... I think she's in Moab. I don't know. I haven't kept track.

Tubby: Did you divorce from her as well?

Black George: Yes.Deanna

Tubby: Did she write about you?

Black George: I don't think so. (laughter) She probably threw things at me!

Tubby: What's her name?

Black George: I'm not sure what she...she was writing under the name of her second husband. She called herself Virginia McConnell. I don't know what she calls herself now.

Tubby: When you came back from Liberia, were your boys in college by then?

Black George: Yeah. Let's see. I guess my oldest boy had started.

Tubby: So you left him behind here in the United States.

Black George: Partly came back here so they could go to school.

Tubby: Where did they go to college at? Did they become geologists?

Black George: No, I was hoping they would. The youngest one became a geologist, but he found out he could make much more money in real estate [and keep a steady job].

{Black George and his family lived in Berea, KY for 4 years in the early 1960's after returning from Brazil. His boys were in grade & middle school there. His oldest 2 boys Clarke & David went to university at Colorado St briefly in the 1970's. His youngest son, Richard, went to Western St College in Gunnison, CO for two years and finished up his bachelor's geology degree in 1977 at Ft Lewis College in Durango, CO}

Tubby: So what do your sons do now?

Black George: Well, let's see. One of them is home builder here in Fort Worth. I take dinner at his house every Sunday.

Tubby: Are you going there tonight?

Black George: Probably, what time is it? I'm surprised he hasn't been by now. I go at mid-day.

{George's oldest son, Clarke, worked in maintenance at Lutheran Medical Center in Wheatridge, CO and is now retired}

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Tubby: It must have been in the late 1970s that you were in Saudi Arabia?

Black George: Yeah, two years working on a surface mapping project. I had a place in Jeddah, but I was about half time in the city and about half the time out in the field at a desert camp.

Tubby: Was your family along?

Black George: No I was...this was much later. I was divorced and I was remarried. My second wife was with me part of the time I was in Arabia. Most of our hired help were Saudis, but we didn't do much with them socially. I had a driver. I drove myself over there for awhile, but they preferred for you to have somebody there in case something happened, they could take care of you.

Tubby: What were you mapping?

Black George: Just doing general geologic reconnaissance. We were slanted towards the minerals, but the country had never had any detailed mapping done.

Tubby: Did you get to name some formations? Did you name the Black George formation?

Black George: No, I didn't do that, they would frown on that. The USGS has a pretty strict way for naming the rock units. You wouldn't dare name anything for yourself. It's got to be named for some local [geographical] feature where the...supposed to be some local feature where the rock is well exposed and where it's been studied.

Tubby: Did you learn some Arabic there?

Black George: No, I learned a little, but I couldn't carry on a good conversation. You'd learn mostly greetings and things. They're pretty strong on their greetings.

Tubby: Was it unbearably hot?

Black George: I guess it was, but I was never bothered by the heat. I would just usually plan my work for a little later in the day if it was during the hot season.

Tubby: Did you meet many of the Bedouin in the desert?

Black George: Yeah you'd run into them from time to time, but they were kind of afraid of strangers and foreigners but extremely hospitable. If you're wandering across the desert, you are free to stop at any place that there's a camp, and he'll be expecting to give you water or what not. So you have refuge any place somebody's located.

Tubby: Did you get to see many camels?

Black George: Yeah. I got on one one time!

Dolores River Trip May 1956

Tubby: What was that like?

Black George: I had a helper, he was a man who would drive me around, and he was afraid something would happen to me, so he'd hold the reigns! (laughter)

Tubby: How far did you go?

Black George: Not very far. Just mostly to get on there, and then he'd take a picture of me.

Tubby: Have you ever gone back overseas to any of the places you worked?

Black George: No. It'd be pretty good - had a real good time in Brazil. The people were just a lot of fun... good sense of humor.

Tubby: Did you learn the language?

Black George: Yeah, I can still speak a little Portuguese - I think (laughter).

Tubby: We should take you back and find out.

Black George: Yeah, the last part of the time I was in Brazil, I was there by myself. I'd go for a month at a time without speaking English.

Tubby: After Saudi Arabia you came back to the USGS office in Denver?

Black George: Yeah, I was in Denver when I retired. I put in 31 years with them.

Tubby: Doing the math that would mean you retired from the USGS in about 1981.

Black George: Yes, I was doing summer field work in Michigan until I retired.

In retirement Black George embarked on a second "career" as a volunteer ranger at Bryce Canyon and Canyonlands National Parks in Utah through the 1980's & 1990's. He was on the winter ski patrol at Bryce for 3-4 seasons and also put in numerous years as a summer seasonal ranger in Canyonlands. At one point he put in 2 solid years at Canyonlands. He also spent time in the Big Bend country of Texas but not as a ranger.

Tubby: So, we have to sort out the origin of "Black" George before we go.

Black George: I don't know where it came from.

Tubby: It's a nickname though? It's not your given name?

Black George: Not a given name.

Tubby: Your son said you wanted to put Black George on your door here at the living facility and they wouldn't allow it. (laughter)

Black George: I don't know about that.

Tubby: You don't know where the nickname came from?

Black George: I can't remember - a long time ago. {His son Richard recalls he used to tell folks it came from dark days in his past when he played piano in a New Orleans bordello. Not true, but a good story.}

Tubby: When you were a little boy though, huh?

Black George: No.

Tubby: Later?

Black George: Somewhat later - about 30 years later, maybe forty.

Tubby: Okay, so it was during your USGS days.

Black George: Yeah, before they were over.

Tubby: So, when was your last river trip?

Black George: Maybe ten years ago.

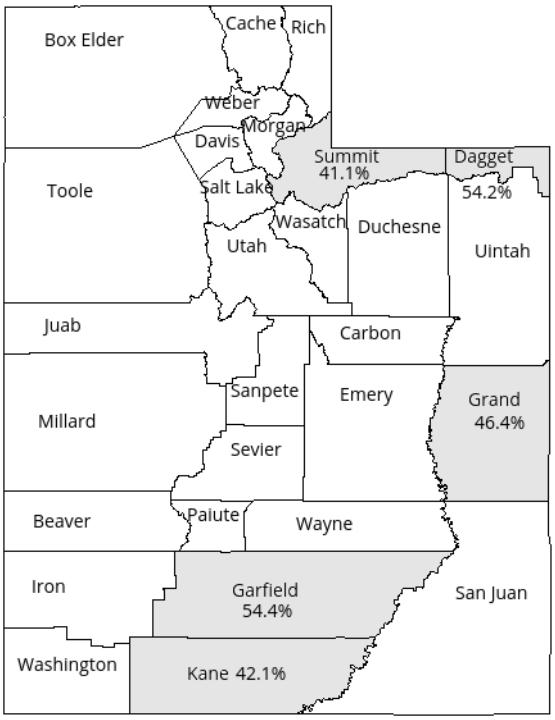
Deanna: Which river?

Black George: Grand Canyon. I was just a passenger on a private trip.

PUBLIC LANDS AND TOURISM IN RURAL UTAH

By Geddy Desmond

Many people outside the state associate two things with Utah; Outdoor recreation and the LDS Church. While both play an important role, the subject examined here is a bit more in depth. According to the World Travel and Tourism Council, tourism contributed $1.4 trillion to the U.S. economy in 2014. This industry is of crucial importance to Utah largely because so much of Utah's land is under the management of some federal agency (i.e., NPS, BLM, DoD). Tourists who come to Utah to take advantage of the federally managed lands spend money in Utah towns on leisure and hospitality, which is essentially the only way the state can benefit from the presence of federal land within its borders. Congressional Research Services indicates that 63 percent of the land in Utah is second only to Nevadas' 80 percent. However, Nevada has far fewer National Parks and ski resorts than Utah, which makes a big difference for rural regions of Utah. Direct economic benefit from the use of these lands (such as forestry and mining) is also removed from the state and local governments. Federal land usage under the management of the NPS is monopolized even further by limiting the ways the land can be used to recreation and tourism. The Utah Office of Tourism reported the share of total jobs in Utah in 2014 that fall under the category of Leisure and Hospitality only ranks 33rd, nationally, at 11.9 percent. This disparity between the percentage of federal land in the state relative to the percentage of jobs created by the federal government in Utah give clues about the challenges in creating diversity in rural Utah economies.



Private Leisure and Hospitality Jobs as a percentage of Private Employment, 2016

But federal land management in Utah doesn't necessarily explain the growth in tourism and the the outdoor industry in the rural parts of the state. Nor does it affect counties in Utah, uniformly. According to the Utah Department of Workforce Service, from 2012-2014 the top four counties in Utah for tourism based on the percentage of total jobs in Leisure and Hospitality are Daggett, Garfield, Grand, and Summit. Considering how these counties rank, comparing and contrasting recent major statistical changes across all four might better illustrate the degree of variation that exists in how each county and it's citizens are affected by federally managed lands and a general increase in tourism in the U.S. While some statistics are better at illustrating effects of tourism on an economy than others, one of the most basic statistics available is general population growth.

Simply put, do people want to live there and/or can they afford to? Not only do people want to live there but are there jobs available for them. The percentage of total jobs in Leisure and Hospitality is the best indicator of a county's reliance on tourism for its economic sustenance but may also suggest a less than stable year-round economy due to the nature of seasonal tourism in a mild climate like Utah.

Top 20 Direct Tourism Jobs in Utah, 2016

Sector	Direct Jobs
Foodservice	20,420
Accommodations	17,706
Amusement & recreation	8,941
Travel arrangement and reservation services	5,802
Air & rail transportation	5,271
Scenic and sightseeing transportation/support activities for transportation	4,631
Retail - general shopping	4,107
Local, state, and federal government employment	3,963
Promoters of performing arts and sports and agents for public figures	2,419
Retail - gas stations	1,856
Performing arts companies	1,519
Automotive repair and maintenance	1,493
Commercial sports except racing	1,370
Retail - grocery stores	1,329
Automotive equipment rental and leasing	1,155
Motion picture and video industries	717
Transit and ground passenger transportation	687
Independent artists, writers, and performers	506
Museums, historical sites, zoos, and parks	382
Real estate	298

Source: Kem C. Gardner Policy Institute analysis of U.S. Travel Association data

An important aspect of the jobs that are available is how well the jobs pay. Changes in median income might suggest whether or not jobs created or lost as a result of tourism correlate to an increase or decrease in income over the same time. Another important way tourism might affect local economies is in the value of real estate, which directly affects cost of living. Some of the other categories examined here look at changes in the difference between residents who own their homes versus those that rent and the changes in rental rates.

Changes in these percentages are also strong indicators as to whether or not the jobs and pay are stable or year-round. Changes in poverty will also be considered.

According to the University of Utah Policy Institute, Daggett County ranks number one in the state for percentage of jobs in tourism at 69.6 percent as of 2014. Reports from Utah State University show that 78 percent of the land in the county is under federal management (excluding percentage of land under water). Most of the land is National Forest which offers 700 campsites. The primary draw to the county is Flaming Gorge Reservoir, which is managed by the National Forest Service and the Bureau of Reclamation. Daggett County also happens to be the least populous county in the state, containing only the town of Manila. According to the U.S. Census information, Manila has a population of about 331 as of 2015 and a total county population that has hovered around 1100 since 2010, indicating little population growth. Poverty has remained below the state average of 12.8 percent, despite household income being much less ($47,100 per year) than the average of $59,800 per year. However, median income has increased here by more than 25 percent since 2010. The statewide increase has been much slower at roughly $1,000 per year. Interestingly, a 2016 economic study of the county performed by Headwaters Research revealed that most of the recent growth in this county came from an increase in proprietorship and education services beginning around 2008. One theory is that the recession of 2008 eliminated many jobs which led many of the newly unemployed to go into business for themselves from lack of available jobs. Perhaps a general boost in tourism has allowed the proprietors to thrive in guided services. Another interesting note about Daggett County; as of 2014, less than 24% of the homes in the county were occupied.

In 2010, U.S. Census Bureau figures show over 30% were occupied. This suggests an increasing number of second homes and short-term rentals as the number of homes built continues to increase. U.S. Census Bureau figures also reveal that long-term rental rates have also increased at double the rate of the state average since 2010 at about $50 per year. So far, it seems the net effect of tourism in Daggett County has been positive but relatively small for most, considering the increase in median income over the past few years, the already low rates of poverty, and the increase in tax revenue related to tourism. The lack of National Parks in the vicinity mitigate the unintended consequences of a large increase in traffic and the displacement of people and industry that seems to come with such a designation. The University of Utah Policy Institute ranks Garfield County second in Utah in the percentage of total jobs in tourism at 54.7% in 2014. U.S. Census Bureau figures show the population of this county declining from 5,172 people in 2010 to approximately 5,009 in 2015. About 89% of the land in the county is under federal management. Panguitch is the county seat and it's population has also recently been declining. This county contains portions of three National Parks, a National Monument, a State Park, National Forest, and BLM land. Bryce National Park is the single most visited attraction in the county and services can be provided to tourists visiting the National Parks in Panguitch or Tropic. According to the National Park Service, visitation has been increasing in Bryce N.P. since at least 2012. Median income in 2014 was a little over $44,000 per year which is what it was in 2010. Also in 2010, poverty in Garfield County was below the state average at 9.8%. Poverty had risen to 13.6% by 2014. U.S. Census Bureau figures show the only other growth in the county was in the Accommodation and Food Services industry which already happened to be the largest industry in the county.

Stagnant income combined with increasing poverty might suggest the growth in Accommodation and Food Services hasn't necessarily made living any better and may have actually decreased living conditions as workers struggle to keep up with even a small increase in cost of rent and property value. Grand County, Utah might be the most well-known example of an economy struggling with explosive tourist growth. 44.4% of all jobs in Grand County are in tourism. U.S.Census data shows the population has been increasing slowly but steadily since 2011. About 71.8% of the county is under federal management. Moab is the largest town in the county and provides a convenient location to stay or shop for those wishing to take advantage of Arches N.P., Canyonlands N.P., the Colorado River, the Green River, or many others. NPS figures show visitation in Arches N.P. alone grew 40% between 2010 and 2015, from about 1 million visitors to 1.4 million visitors. There has also been an increase in visitation related to non-NPS outdoor recreation such as off-roading, mountain biking, rafting, and rock climbing. The U.S. Census Bureau data gives us a lot of insight here, too. To begin with, rent in Grand County has been at or near the state average since at least 2009. Per capita income for 2014 was $44,239 and has seen some small growth but remains nearly 30% below the state average. However, the percentage of citizens living in poverty in Grand County has been increasing steadily since at least 2009 and had reached 16.3% by 2014, well above the state average of 12.8% which has been rising at the rate of about 0.5%, annually, since 2010. By contrast, poverty in Grand County has increased at double the rate over the same time. Looking closely at per capita income in the county might help explain the increase in income AND poverty. Per capita income includes labor and nonlabor earnings.

Here the 2016 Headwaters Economics data reveal that nonlabor earnings are nearly equal to earnings from labor and continue to grow. Most nonlabor earnings come from rent collected. Therefore, the per capita income for the county is higher than it might otherwise be if so much income wasn't coming from nonlabor income (rent). Growth has not necessarily meant better paying jobs but it has meant there has been an increase in the rental market. This means that those that can afford to buy rental property have benefited, whereas those that rely on labor for income have found more and more of their income going to pay for a place to live. This would explain the continued rise in the local poverty with median income so low relative to rental rates. These numbers suggest that Grand County is gentrifying as a result of the demand for National Park usage, what activities are offered in the vicinity, and the relative remoteness of it's location. Summit County ranks fourth on the list at 41% of total jobs in tourism. This is also the most populous county examined in this text at approximately 39,600 people. Only 41% of the land in Summit County is under federal management. Summit County illustrates the fact that just because a county might have a high percentage of jobs in tourism doesn't mean that the county is mostly federally managed land as all federally managed land was not created equal. The biggest attraction in this county is Park City, the town and ski resort. As matter of fact, this county has three ski resorts, Park City Mountain Resort being the largest in the U.S. according to Utah.com. Park City is also home to the popular Sundance Film Festival. The majority of the jobs in this county that are tourism related are associated with snow sports, some of which take place on private property. Growth here seems to have been generally healthy.

Census Bureau data show population, income, and property values have increased, moderately, while poverty has held relatively steady and was at 8.4% in 2014 and has stayed well below the state average at least as far back as 2009. Getting good information on housing in ski communities around Salt Lake City will always be a challenge because so many of the people who work in the tourism industry in ski communities such as Summit County actually live in Salt Lake City and commute to the resort for work. This might help to explain why the nature of such seasonal work doesn't reflect on the number of citizens living in poverty. The diversity of industry in the county also provides some healthy growth with better paying and more stable jobs.

Average Daily Room Rates by Top Travel and Tourism Counties

County	2015	2016	% Change
Garfield-San Juan-Wayne	$100.27	$107.70	7.4%
Grand	$131.58	$142.20	8.1%
Salt Lake	$104.63	$106.96	2.2%
Summit-Wasatch	$229.68	$241.80	5.3%
Washington	$104.16	$109.86	5.5%

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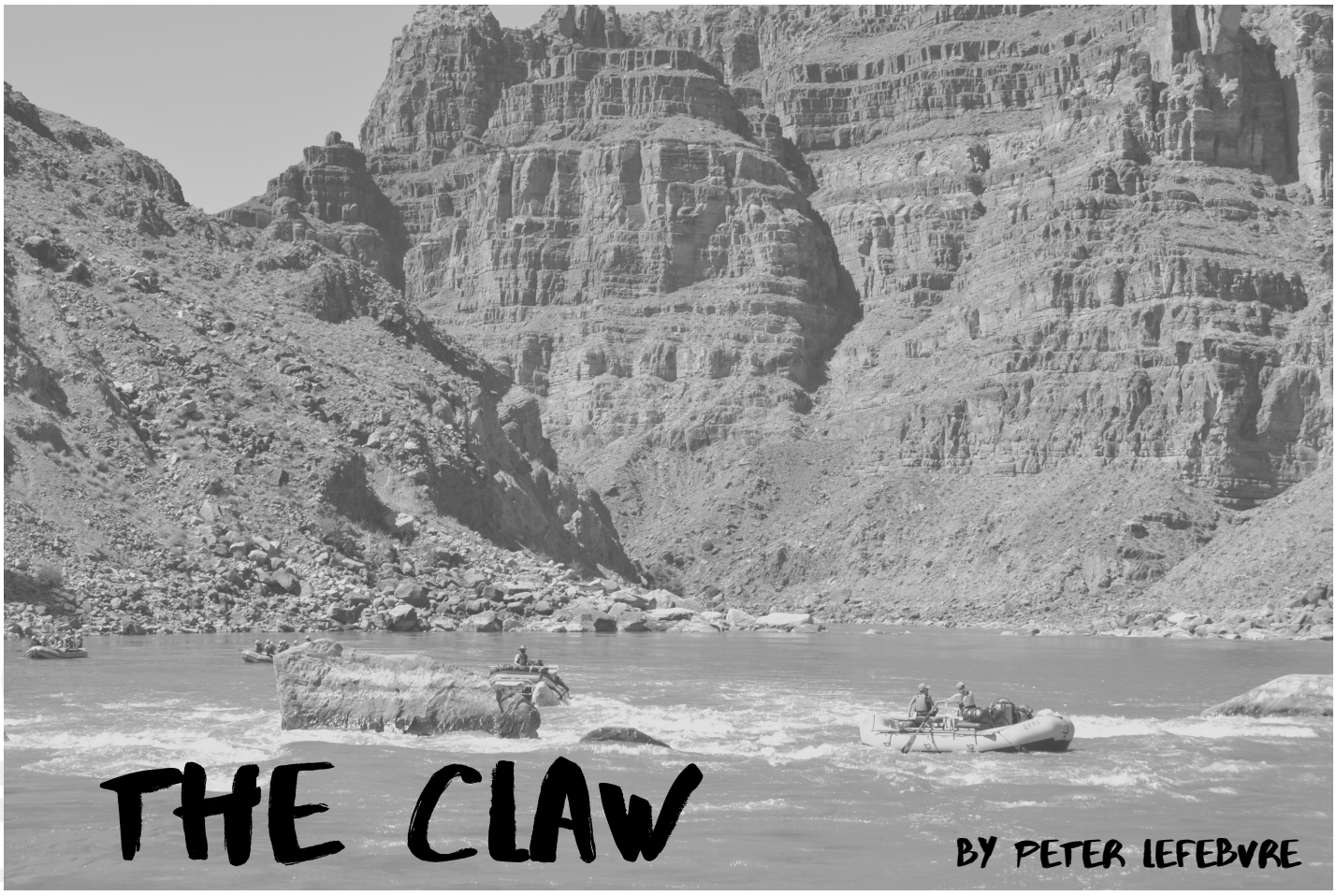
Looking at the top four counties in Utah in terms of percentage of jobs in tourism, what is clear is that the number of jobs in tourism alone doesn't explain socioeconomic growth patterns in rural parts of Utah. Industrial diversity and locational desirability go a long ways in determining the types of economic growth a rural area can have. At least in the examples reviewed here, the most holistic growth with the least negative effects of poverty in county's with disproportionate reliance on a tourist economy comes from areas with the most diverse economic industries that rely less on rental income.



(The Claw in low water 2012)- My wife Jamie sliding past The Claw Rock in the low water of 2012.

In the beginning, there was no claw...

just a few lil features called The Black Hole, Little Niagara, and Satan's Gut. Any boatmen that have rowed the mighty high water of Cataract Canyon, and look forward to rowing it again, can be haunted in the stills of winter by thoughts of the Big Drops. As the snowpack gets deeper, and spring returns, discussions of how high the water will get can start to surface at dinner parties and the local watering hole.

Many boatmen would agree that the Big Drops were hard enough. They had plenty of features that could flip whatever boat you were in, before the introduction of The Claw. The Drops were already "$&!# your pants" scary. Plenty of people, guests and guides, have broken out in a cold sweat scouting from "Poop Rock" on the long walk from Big Drop Beach. Then "the powers that be" decided to throw yet another curveball into the mix... In May of 2008 a large boulder dislodged from the crumbly walls above Big Drop II and crashed down into the churning waters below. I have not heard rumors of anyone being there when it happened, but what a sight it would have been!

Now, the name The Claw refers more to the wave created by the rock at certain levels, then the actual rock itself. All waves are created by a few factors: gradient, constriction, a rock, or a combination of all three. Some waves tend to be gentle and glassy, providing that weightless rollercoaster feeling causing you to giggle. Other waves have more “white” water that you crash into and out the other side. These can be real soakers, followed by audible laughter. Other waves are not really waves at all. We call them holes. This is when you ride water over the top of a rock, down the backside of it, and crash into a pile of recirculating water behind it. Holes can be rather violent features, easily flipping boats, and to be avoided at all costs! The Claw, being a combination of the latter two, was a crashing wave-hole with a nasty attitude. Starting around 20,000cfs (cubic feet/second) The Claw was a nasty pour-over/hole. As river levels rise The Claw would get into its prime. Anywhere from 30,000 to 60,000cfs it resembled a hand with claws curled forward ready to catch something. These claws would open and close, in a viscous cycle, as a wall of water would rise-up and crash back down with extreme force.

After the runoff subsided in 2016 (it peaked around 50,000cfs) and the water stabilized at the usual fall flow of around 7,000cfs, I remember thinking that The Claw Rock looked a bit lower in the water. Not easily judged as you’re floating by it, I decided to try to find some photos that had The Claw Rock in it, and recreate the same photo. I also decided on one trip to camp down at Kolb Camp and take a look at some of the new rocks that fell into the river in the early spring of 2016 (large rock-fall from the right wall).

(Deaner and the claw 2012)- Christen Dean at the helm of a snout with The Claw Rock behind him. 2012

So, the first picture is a view looking upstream at The Claw Rock with one of the new rocks that fell in early 2016.

(Claw 1)- Taken 3/29/2016, flow 6,500cfs. You can see The Claw Rock in its original position, with the fresh new triangle rock sticking up to the lookers left. Between the two of them is the pour-over rock that remains the same in all three photos.

The second picture is a similar view from the fall of 2016. You can tell the Claw is lower in the water, and the fresh new rock has also rolled over, and is just a pour-over.

(Claw 2)- Taken 8/24/2016, flow 6,200cfs. Here you can see the triangle rock has rolled, the pour-over remains the same, and The Claw Rock has shifted. It sits lower in the water, even at a slightly lower flow. It has way more green algae on it and it has a slightly different appearance.

The third photo was taken in the fall of 2017, and in that photo The Claw Rock is no longer visible above the waterline. One rock that stays the same in all three photos, and is very helpful as a constant, is the pour-over rock just viewers left of The Claw Rock. The water peaked around 50,000cfs in 2017 and it must have been enough force to roll that big ole boulder over, although I do know a guide that swears he knocked it over by running into it so many times!

(Claw 3)- Taken 11/13/2017, flow 6,700cfs. There's that pour-over rock, but The Claw Rock is fully covered with water. RIP

Like river guides, some rocks have long careers filled with excitement, standing the test of time and high water, sticking around year after year to see what the river brings. Others see a handful of high-water seasons and roll downstream into the retirement pond below. Such is the case with The Claw. In the grand scheme of things The Claw actually had a short run. I actually know a few boatmen that used to run Cataract, heard about The Claw, and never actually got to see it. Just shy of ten years The Claw was around from May of 2008, had an adjustment in 2016, and then finally rolled over in the runoff of 2017. I, for one, will not miss dodging that feature any more.

-Peter Lefebvre-

Really Big Water: An interview with Dr. Vic Baker exploring the 2,000-year history of floods along the Colorado River.

Since record keeping began in the 1920's, the record high water years along the upper Colorado River peaked around 100,000 cubic feet per second (cfs). That's a ton of water. But that's nothing, says hydrologist and geoscientist Dr. Vic Baker, compared to the paleo record of floods. Vic and his team from the University of Arizona have been exploring floods that passed through Moab over the last 2,000 years. The team documented 44 large flood events, two of which were over 300,000 cfs. Science Moab host Kristina Young sat down with Vic to talk about how he and his team measure these past floods and what they mean for how we manage the Colorado River today.

Kristina: How long have we been measuring floods along the Colorado River?

Vic: Flooding has been observed basically since people arrived. The recorded floods start when the European settlers came into the area. They started recording flood flows at Lee's Ferry in the 1920s. These floods were in the vein of the usual semi-annual flooding of the river, which got up to about 100,000 cfs below Lee's Ferry. In the normal flood regime of the Colorado River, you'd get a fairly large flow every year based on snowmelt. And this contributed to the morphology of the canyon floor. Basically, it removed coarse debris, maintained a sort of channel to the river. But of course, this water was not being used and it bothered people that wanted to use that water for purposes of development. I think Herbert Hoover famously said that every drop of water that flows to the sea is wasted. They talked about the ravages of the floods that occurred downstream in areas like Yuma. So the idea of putting dams in the river started and became really well developed in the 1930s. This meant that they needed more records of the flooding. And so more detailed recording of Colorado River floods started around that time.

Kristina: What does a flood of around 100,000 cfs look like for the river system and for areas along the river? How far would that water come up?

Vic: It would be generally confined to the channel. In Moab near the north end of the valleys where the river comes in, that water would come up to like the base of the bridge that goes over the river there. It would be around the margins of the uranium tailings pile and it would flood some of the low-lying areas to the north. They wouldn't get into the area of Moab proper. The concern was being voiced about the tailings pile, which was there from 1950s, 1960s, when uranium mining what happening. They evaluated what a larger flood would do, it's called a probable maximum flood. This probable maximum flood is calculated by engineers. It's really a fake flood because it's not something that ever happened. It is determined by experts and they try to think of the most extreme conditions that would be possible for nature, and then they do calculations to see where that would get to. That flood might have gotten in the Moab area to about 300,000 cfs, about three times as big as a semi typical Colorado River annual flood. And that would actually get into the boundaries of Moab and it would also have impinged against the uranium tailings pile, which was concerning.

When that problem of the uranium tailings pile was being addressed, it was thought that the probable maximum flood was the most extreme thing that nature would do, and it was sort of discounted as an unlikely hazard.

Kristina: A lot of your work has looked at paleo flood hydrology, and I'm wondering if you can explain what is meant by paleo floods?

Vic: Sure. Happy to. I invented the word.

Kristina: Well done!

Vic: The basic idea is that instead of us being so clever that we think we can say what floods will be, we let nature be the expert.

In other words, we look to see the evidence that nature has presented of the biggest floods that have really happened. Nature happens to be a very good recorder of the most extreme floods. When a really big spectacular flood happens, particularly in a high energy situation like a mountain canyon, the evidence is preserved for a long period of time.

So we started looking at these extreme events and we found that when you have a river in a narrow canyon, the water doesn't spread out widely. Instead, the water depth goes up very greatly with the increasing flow. Then the water is moving at much higher velocities and much more energy. So it carries very coarse sediment with it.

In areas that we call slack water, areas that develop at a high flow. These are zones where velocity drops rapidly, like at the mouth of a tributary valley. All that coarse sediment drops out and that sediment is a record of that extreme flood.

The flood also leaves erosional marks, it leaves gravel bars, it leaves a variety of kinds of evidence. So part of paleoflood hydrology is kind of like a detective at a crime scene.

You have evidence of this extreme happening and you put together the clues that tell you what actually occurred.The modern record of flood measurement is so short that it doesn't include rare events. And even when the rare events do occur, the measurement devices get destroyed. So we don't have decent records of extreme floods. The only way we can get those records is from nature. So if extreme floods are important, we have to use paleoflood hydrology to understand them.

Kristina: Can you, generally speaking, go into what these methods for measuring the flow and volume actually are that you're using for paleoflood hydrology?

Vic: Well, when the water rises in a stream, it goes to a level that we call the stage. In hydrology we're interested in the relationship of the stage to the quantity of water moving in a given period of time. That's called the discharge. So we have to develop a stage-discharge relationship. And in conventional measurement, you have flow in the stream and you use a meter to measure the velocity of that flow. If you know the average velocity in a channel and you multiply that by the cross-sectional area through which it moves, that'll give you the discharge.

For these paleo floods, we can find out the stage, because if we have a stable channel that is a bedrock channel like many of the streams around here, then the stage is basically what's evident on the landscape. So we could just go out and measure that. That gives us the area. And what we need is some way of determining the velocity.

We can see from multiple cross sections how the water surface has changed. And of course, it slopes on a downhill direction and that is a measure of the rate of energy given off by the water. And that rate of energy given off can then be related to the velocity. We use hydraulic relationships.

These are now computerized and those are the tools we use for determining the paleo flood magnitudes. The other important thing, though, besides the hydraulics is the advances we've made in it being able to determine the ages of the floods, measuring exactly when they happened. There is new technique that's come in the last decade or two, and this is a technique that relies upon the technology that basically makes the light in your cell phone. It is a technology related to quartz and luminescence. It allows you to date to the time when the court's grains were transported by the flood. The way it works is quantum mechanics. And of course, as Richard Feynman famously said, 'no one understands quantum mechanics'. So I'm not going to try to explain the process. It does work mathematically, though.

Kristina: Can you tell me about what these investigators and interpreters are finding out in nature? What was flooding like in the history that's still present on the landscape?

Vic: The general thing we find is that floods tend to cluster in time. That the big floods seem to occur in certain preferential conditions.

Floods in many cases have been very much larger than what our theoretical studies have shown. But there are cases where they have been smaller.A good example is the flooding being hypothesized in regards to the uranium tailings pile, which was being assessed with an estimated probable maximum flood of about 300,000 cubic feet per second.

The paleo flood study we did upstream of the northern entrance of the Colorado River into the basin where Moab is located, produced a 2000-year record of natural flooding. And in that 2000-year record, we had 44 large different paleofloods.

Nearly all of them exceeded the level that supposedly represented by what's called the hundred-year flood. And two of them exceeded the probable maximum flood.

In other words, in two thousand years, they were two floods that were larger than the probable maximum flood. So this engineer-calculated probable maximum flood was definitely not the largest probable maximum flood. And that was a big concern because the hydraulics that were done showed that that was the flood that spilled the nuclear waste. Our studies show that it's much more common flood than was being hypothesized.

Kristina: How big were these two floods that have exceeded this probable maximum flood event?

Vic: That maximum was about 300,000 cubic feet per second and these were a little bit bigger than that. But as I said, this is only a 2000-year record. That site does not go back further than that. So we don't really know about other large flood events that could have happened earlier.

Kristina: What conditions made it so that these very large flood events happened?

Vic: We can't answer that question by just looking at that flood event. You solve that by looking at the whole context. You look for corroboration. You look for other things that were going on at the same time. You eliminate possibilities. You think about how things might come together. There's much more research to do to see how and why those things came about.

We are beginning to do that. We're trying to develop new techniques to look at other ways of understanding the environment at the time these floods occurred, because we know when they occurred.

We have other evidence of what the environment was like from evidence like tree rings, which tell us what growth conditions were like for trees. These are going to be related to climatic conditions that promoted the tree growth. And we can try to relate the time period in which these extreme floods occurred to these other factors. Then if in the future such combinations of factors were to occur, we could suspect that maybe we'd have a chance to get these kinds of conditions.

The role of science, in my view, is to provide a reliable source of wisdom that comes from understanding the natural world. And this wisdom can inform decisions, because you always have to take into account what could happen.

Kristina: Because the river is so altered now, and not just the river but the landscapes around the river, is it reasonable to say that what happened in the past is still possible?

Vic: Most of the country in the Colorado River Basin has not been modified in terms of the landscapes related to extreme flooding. Tremendous amount of areas of landscape are National Forest, National Parks. That's were a lot of the snowmelt is being generated. The extreme floods override a lot of the human disturbance of the surface, particularly over a large area.

Now, of course, dams do interfere with the process. Dams are operated in certain ways, for certain purposes. One of the issues with dams is that people are often told that the dam is going to provide flood protection. What people aren't told is the full story.

Now, of course, dams do interfere with the process. Dams are operated in certain ways, for certain purposes. One of the issues with dams is that people are often told that the dam is going to provide flood protection. What people aren't told is the full story.

The Colorado River dams, the overriding importance of those dams is holding water for supply and secondary use is hydropower generation. And then they are used for recreation. All of those work best if the dams are full. If the dams are used for flood control, they should be empty. Because then there's the capacity to hold that water. So you have a conflict. Let's say we are worried about a drought and want to have a ready water supply for California and everywhere else, so we'll fill our reservoirs as an insurance policy.

Well, then what happens if a really big flood happens and the reservoirs are full? And you aren't able to empty them fast enough? Which is an issue. Then the dam could fail and you will have a flood far worse than nature could ever have generated on that river. At least until the next ice age, when maybe you could have a situation that could produce such a big flood.

The main point here, though, is that the scientists who do paleoflood hydrology are interpreting things that are being presented to us by evidence. So it's not like they are just creating what nature is supposed to do.

So this is very different than trying to simulate the future with a model which depends on the assumptions that people make with that model. I'm not saying that that's wrong to do. I'm just saying that if you have the possibility to use nature to check that, you would be very foolish not to use the nature part as a check.

Science Moab is an organization dedicated to engaging people with the science happening around Moab and the greater Colorado Plateau. Learn more about our organization at sciencemoab.org.

This interview was made possible through a partnership with the Center for Colorado River Studies. Parts of the original interview have been edited for clarity. You can listen to the entire interview with Vic Baker at sciencemoab.org/radio. Funding for this interview was provided by the BYU Charles Red Center for Western Studies and the show was produced by Peggy Hodgkins and KZMU.

The interviewer, Kristina Young, and Science Moab on Tap host Natalie Day on the, definitely not flooded, Daily. Photo by: John Caldwell

Dr. Vic Baker from Arizona State University. Photo by: Science Moab