

The Confluence

The Journal of Colorado Plateau River Guides

Number 26, December 2002

Comments from the Board

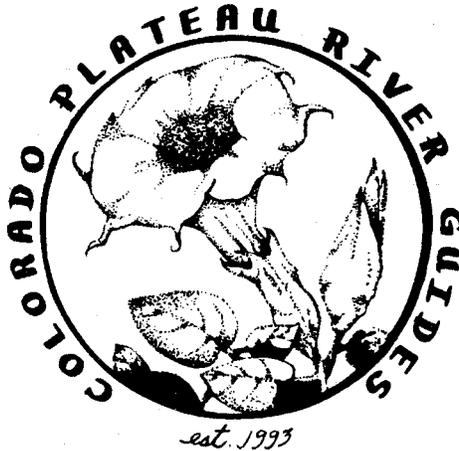
Grazing Issues at Dinosaur

A Story and a Poem

New San Juan River Guide

River Bed Testimony

Charles Spencer



Jim Knipmeyer

Labyrinth Canyon

Motors and Grand Canyon

River Ethics

Otis Marston & Sportyaks

and more



Steamboat pilot Harry T. Yokey of Elgin, Utah

The Confluence

wants to be the quarterly journal of Colorado Plateau River Guides. CPRG has a fiscal sponsor, LIVING RIVERS, a 501(c)(3) river advocacy organization that promotes river restoration.

CPRG is dedicated to:

- Protecting and restoring the rivers of the Colorado Plateau
- Setting the highest standards for the river guiding profession
- Providing the best possible river experience
- Celebrating the unique spirit of the river community

Guide Membership is open to anyone who works, or has worked, in the river industry of the Colorado Plateau

General Membership is open to those who love the Colorado Plateau

Membership dues

\$20 per year
\$100 for six years
\$295 for life
\$495 as a benefactor

General meetings and board meetings will be announced

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We need articles, artwork, poetry, and photos. We use PC and MacIntosh computers and can translate most formats. We also accept text that is typewritten. Please include photos, charts, diagrams and artwork with your submission. There really is no deadline, but the beginning of each quarter works best.

Managing editor	John Weisheit
Editor this issue	John Weisheit
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Disclaimer: The opinions and statements made within the pages of *The Confluence* are those of the author and do not necessarily represent the position of the guide membership, the board of the Colorado Plateau River Guides, nor our fiscal sponsor. This forum is open with no restrictions at the present time. If you have an opposing viewpoint, please send your comments to CPRG.

A Special Thanks to CNHA: Canyonlands Natural History Association has been the fiscal sponsor of Colorado Plateau River Guides since 1995. We thank CNHA staff for their generous assistance and support through the years. CPRG would especially like to acknowledge the grateful assistance of Sue Axtell.

A Special Thanks to 2002 Donors: CPRG would like to give thanks to those who provided generous financial support for our River Education Seminar (RES), which include the National Park Service, Southeast Utah Group; Bureau of Land Management, Grand Resource Area; Utah Guides and Outfitters; Utah State Parks and Recreation; Headwaters Institute; Demarree Inflatable Boats; Maravia Corporation; and Smith Foods.

CPRG Web Page: Volunteers are presently working on designing a web page for CPRG. The home page will emerge soon and will include links to the articles and graphics of *The Confluence*; a search engine feature will also be provided.

CPRG Membership Renewal: For those who need to renew their membership to CPRG, you should find the necessary form included in this issue. Thank you for your continued support!



CPRG Spring Meeting in Fruita, Colorado

Top Row: John Weisheit, Dan Phillips, Michael Smith, Herm Hoops, Tom Emanuel.

Bottom Row: Marty Shelp, Susette DeCoster, Annie Payne and Joe Keys

Message from the Prez

by Annie Tueller-Payne

Welcome to the 2002, end of season edition of *The Confluence*. I could have written volumes about the water conditions, or lack thereof. *Holy cow*, was it low or what? I would like to assert my special admiration to everybody who was out there getting trips done safely and lending a helping hand when necessary.

The CPRG interpretive river trips and events went very well this year. As for the river trips, the Cataract and Westwater programs were both heavily attended. The Yampa River trip was sponsored by the National Park Service and also went well.

The River Education Seminar, which primarily focused on a special request program of river rescue, was a big hit too. We had over 60 people in attendance on Saturday. I think all that attended learned something new and were properly introduced to the senior guiding community. This program was also augmented by two evening presentations by river historians. The decision to conduct a river rescue course was prompted by popular demand from the membership, which we were glad to accommodate. We decided that CPRG needs to be flexible and responsive to the needs of the membership from time-to-time.

This upcoming spring seminar will return to a traditional theme pertaining to natural and human history. The coordinator for the upcoming River Education Seminar will be Dan Murphy, who had an outstanding career with the National Park Service. Dan is a lifetime member of CPRG and has donated his time and skills to CPRG many times in the past.

CPRG would like to take this time to thank all of the contributors to this years River Education Seminar: Kirk Livingstone, Michelle Hill, Molly Taylor, Nancy Allemand, Bego Gerhart, Dave Dawson, Kyler Carpenter, Roy Webb, John Weisheit, Ranger Trevor, Tim Payne, Marty Shelp, Aimee Mullock, the Adventure Bound team, Fat City Smoke House and all the fiscal and in kind contributors.

CPRG would also like to thank this years outfitters: Hatch, Western and World Wide who sponsored the interpretive river trips. A big thanks to Western's guides Wes, Leslie, John & Nudy, who worked their tails off for the event. CPRG would also like to thank the presenters for the interpretive trips, John Weisheit, Kent Frost, Homer Bosserman, RJ Johnson, T-berry, Trevor and all those who I am inadvertently forgetting right now.

Finally, the "Boatman's Bash" was held at Rimrock Adventures along the shore of the Colorado River at Fruita. Thanks Travis! We have plenty of projects coming up this summer. If you would like to help, please write me at <ptannie@qwest.net> or call me at (801) 580-5621.

Message from the Veep

by Dave Focardi

I have been out in the Mojave counting desert tortoises, so anything that happened while I was gone can be blamed on me.

In April, I was privileged to give a presentation as a representative of CPRG for an event that was sponsored by Living Rivers and held at the Moab Arts and Recreation Center (MARC). Other speakers included Philmer Bluehouse, a Diné medicineman, and John Weisheit gave a history program on the Green River. I thought you all might want to know what your officers are saying in your name. If you agree with this, go out and spread the word. If you don't, *The Confluence* publishes ANYTHING short of libel. Also, its very easy to get involved: if you have something you want done, get it going and we'll support you. Also, now is a good time for all of you to get one more person to join CPRG. Still a bargain at only \$20 a year.

Now back to my presentation at the MARC. I used to think it was only the crusty old guides who whined about the reservoir. But the more time I spent down there, the more I realized that either they were right, or I was becoming a crusty old guide. What irked me was: I'd be on this perfectly good river trip, and we'd just be getting into the flow of things and—wham!—we weren't on a river anymore. We are on this dead reservoir with crummy camping spots and silted-in hikes.

Instead of being on a great beach of sand, we were on a tammy-choked mudflat. Instead of having another day or two of a river trip, were trying to get off the reservoir in the most painless way possible. I learned to hate the reservoir and the long, tedious motor run to get off it.

The only problem with having personal reasons for getting rid of a dam is they don't fly very well in the face of people who like central airconditioning, swimming pools, golf courses, and throw their money away on consumptive reservoir hobbies. The way to get rid of a dam is to use knowledge and facts. So get your facts right! Even though the clean-up will be a heavy burden to U.S. taxpayers, when sediment build-up eventually forces dam decommissioning, typical Americans still think dams generate huge economic benefits and provide millions of user days for recreation.

If the regulating agencies wait till the last possible minute, as we know they will try and do, then the costs of decommissioning and cleanup will be far more exorbitant than they would be if we act now. The longer we wait, the MORE silt there will be. By the time the regulating agencies are ready to deal with it, there won't be any power generation to offset the cost of clean up. Who will bear the cost? I will, you will, and all taxpaying citizens will. I haven't done the math, but judging from what has been said concerning the cost to clean up the Moab tailings pile, I would guess the cost of dealing with the reservoir sediment will be far more than the power earnings have been to date.

Grazing Issues at Dinosaur

Hydropower is very seductive: it looks clean but in reality it destroys huge amounts of habitat and the organic material that decomposes in the sediment layers emits greenhouse gases. But later, as dams are decommissioned for reasons of safety, the cost and energy associated to mitigate these sediment problems will be an astronomical burden to society. Be forewarned, they don't want to decommission Glen Canyon Dam. They will want to build others to hold the silt back just like they built Glen Canyon Dam to save Lake Mead reservoir. This will only save one generation of policy makers from the pain of dealing with the mess coming down the road.

I won't go very far into the issue that most of the water is being used to feed cows in a market that can't even begin to compete with the mid-western grain belt where, by the way, they have plenty of WATER. It's enough to raise your blood pressure and cause illness.

Speaking for Colorado Plateau River Guides, at a 1996 board meeting at Ray's Tavern in Green River, we voted unanimously to support draining the reservoir. One absent board member would have voted to study it and not to just drain it. Never-the-less we went for the whole enchilada. We KNEW the lake was a bad thing and that studying can be a delaying tactic used by both sides of an issue to prevent a victory by one side or the other; studying stops progress. So what does the CPRG vote accomplish? Not much on just face value, but it was a start. Now draining the reservoir is a real issue being discussed by policy makers at the highest level. As guides who appreciate what a river IS—and here comes a cliched statement so bear with me—we are in a unique position to inform the voting public about yet another issue. Instead of just educating our guests about natural history, we can educate them about this political issue. Make no mistake, it will take political will to remove the dam. So guides—get your facts—educate yourself so you can educate your guests. Read Philip Fradkin's *A River No More*, Marc Reisner's *Cadillac Desert*, Russell Martin's *A Story That Stands Like a Dam* and High Country New's *Western Water Made Simple*." Get the background on these issues. Get involved with Living Rivers and stay informed about what's happening. When you talk to your guests don't just speak from emotions, speak from knowledge.

The reservoir sediment is going to kill the river trip business here in southeast Utah. Cataract Canyon is the premier selling trip and what's happening at the end of the San Juan River is going to happen to the Colorado River. Its time to do something before its too late, although mankind has been pretty lax about realizing when the backyard is full of filth. Time and again shortsightedness for near term revenue generation result in higher costs for cleanup later. Industry gets the revenue, we taxpayers bear the cleanup costs. Its going to happen at the White Mesa mill down the road, its happening right here at the Atlas tailings pile, and its going to happen with Lake Powell reservoir unless we do something as soon as possible.

The following letter of May 11, 2002 was submitted on behalf of CPRG as public comment concerning grazing in Dinosaur National Monument. CPRG was not aware that Dinosaur was taking public comments until the day before the comment period closed. The CPRG board was not able to vote on this issue until after the letter was drafted and mailed; there was one opposing vote.

Dear Superintendent Cartwright:

Colorado Plateau River Guides (CPRG) wishes to have this letter included as comments for the Environmental Impact Statement concerning the Livestock Management Plan (LMP) in Dinosaur National Monument (DNM).

CPRG is currently disappointed with the current LMP proposal for three reasons:

1) Last fall CPRG contacted staff at DNM requesting that all information requiring public comment from the DNM be sent to the CPRG office. CPRG was not informed of the upcoming new management plan concerning livestock. CPRG was not alerted to this issue until today and subsequently feel that we were not allowed to participate in this process properly from the beginning. We also do not feel that we have adequate time to respond properly in whatever time remains.

2) Upon visiting the DNM website, CPRG was disappointed that a PDF of the EIS is not available for review.

3) CPRG is also disappointed that a full-range of alternatives is not included in the EIS. We believe strongly that a no grazing alternative should be a part of the management plan. CPRG does not feel that the current alternatives adequately address the problems and subsequent solutions to the land and river damage happening in DNM due to livestock grazing.

Colorado Plateau River Guides would also like to make the following suggestions:

1) CPRG would like to be included on the DNM mailing list for all matters concerning public participation.

2) CPRG insists that DNM include an alternative that includes the elimination of all grazing in DNM and the purchasing of the Mantle Ranch.

After completing my first Yampa River trip of year 2002, I reported back to the DNM river office that there were 30 dead cows along the riverside between Mather's Hole and Tiger Wall. The DNM river office called to confirm my citing. Two months latter, I noticed that the cows are still there and there does not seem to be any plan of action to deal with problem. River runners find the cows both offensive and a health hazard as our guests and guides swim, wash and perform kitchen duties down stream of the cows.

CPRG feels that by eliminating all grazing in the future will save Dinosaur National Monument money and resources in the future. Dead livestock along the rivers is not atypical, it happens annually. CPRG feels that by allowing cattle to decompose along the river without resources and finances set aside to alleviate these problems leaves the Monument open to litigation and costly laws suits.

CPRG also believes that grazing in a national monument is not an appropriate use of resources. We believe that resource protection and enhancement should be the result of implementing a Livestock Management Plan.

CPRG understands the livestock issue and grazing issue. Most of our constituents were raised in the Western United States. Some in our community were raised in ranching and farming families. We do not want any more subsidies or tax dollars spent on the notion of preserving the "ranching lifestyle." Many of our former ranching constituents would rather see the tax dollars spent on quality career education so as to enjoy a better long-term career. We find nothing patriotic about destroying places like DNM to sell subsidized beef. In fact we find the whole notion of grazing in any resource area protected by the National Park Service to be demoralizing and environmentally offensive.

CPRG further feels that the National Park Service should fully acquire the Mantle Ranch. We feel that eliminating grazing in DNM will save enough money in the long-term to finance, acquire and incorporate the Mantle Ranch into the monument. CPRG would like to caution the Park Service to act carefully in the Mantle Ranch issue. Allowing private developers to buy and subdivide the area would create an enormous resource and economic loss for the American public.

CPRG would like written correspondence from your office confirming that you have read our requests and confirm that this letter will be incorporated into the final EIS.

Thank you for your time on this issue.

Sincerely,

Annie T. Payne, President CPRG

The Water People

by John Weisheit

There is more reason to look at decommissioning dams on the Colorado River than for reasons that would satisfy the perspective of our dominate society. We happen to share this region with others that have natural laws much older than ours and, thankfully, still very much in effect. The indigenous peoples are what I speak of.

The Navajo call the fish of the Colorado River "The Water People." Like the indigenous people of the Colorado Plateau, our native fish populations are hanging on to their heritage as best they can under the current dominate society.

The Bureau of Reclamation (BuRec) is engaged in several Environmental Impact Statements to save the endangered species of the Colorado River. The decommissioning of Flaming Gorge and Navajo Dams have also been identified by river activists as a solution to recover these incredible native fish species.

So which dam should be decommissioned first? In interviewing aquatic ecologists I learned that spawning habitat is not as diminished as is nursery habitat. Spawning is occurring on the Green, Colorado and San Juan Rivers, but as the juvenile fish naturally migrate downstream, they end up in Lake Powell to be consumed by that dominate exotic fish population. What is needed more than upstream spawning habitat is downstream nursery habitat and a way for the endangered fish to migrate in and out of these three arteries of the Colorado River system that all converge into Lake Powell reservoir. The other gain in habitat restoration includes the Grand Canyon reach. That's a lot of habitat diversity for the decommissioning of just one dam.



River Rescue Participants at Ida Gulch during the 2002 River Education Seminar

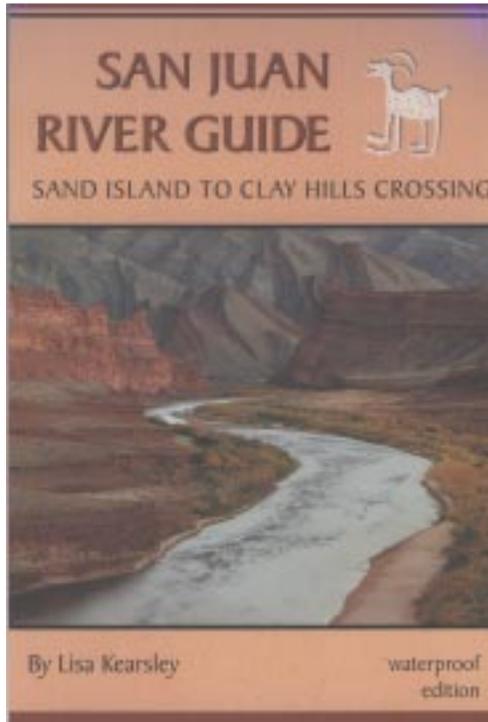
River Rescue Seminar, 2002

The River Rescue Seminar was a big success. This event was the first time CPRG actually attempted an "in the water" seminar. The seminar hosted over sixty students. Roy Webb and John Weisheit provided the two evening programs that focused on river history and river geomorphology. Dan Murphy will be the River Education Seminar coordinator for the 2003 seminar and will focus on the natural and human history of the Colorado Plateau.

New San Juan River Guide

A new guidebook has hit the streets, the “San Juan River Guide,” by Lisa Kearsley. It is a well illustrated, comprehensive guidebook that gives people a great overview of the area.

One of the book’s best features is its river map from Sand Island to Clay Hills Crossing. The map is updated, it faces downstream, it is detailed with 100-foot contour intervals, and it has site-specific information boxes with page references to the text for those who want to learn more about what they’re passing. It also starts at the back of the book so is easy to find and follow.



The book’s other sections include a San Juan River overview that gives the reader a feel for the entire river. Logistics and safety goes over the nuts and bolts of different aspects of San Juan trips. Human history spans from the Paleo-Indians to the environmental movement. It includes informative charts showing ceramic development and rock art types. Geology, written by Wayne Ranney, provides a forum for understanding the dynamic geologic processes in the region. And finally, the biology section not only discusses present-day challenges, but provides a background for how the plants and animals arrived at their present state, and where they’re heading. The book also has a mini field guide with illustrations and interesting facts about the most noticeable plants and animals on the San Juan. High quality illustrations and maps are found throughout the book.

Anyone who reads this guidebook will have a more thorough understanding of and deeper appreciation for the San Juan River and the challenges it faces. The book is available in regional bookstores and on the web at www.shivapress.com.

A Short Story

by Sarah Clinger

I am sitting on a beach, a beach of a desert river. I undo my wet sandals, with their sand-caked rinds, as if I was undoing a bandage, slowly and gently. I drop them to my side and curl my toes, sinking them below the surface of the sand into the cool layers, which feel like pollen. There are small tides of water which splash in and out of the rocks near my feet. Every second or so a new layer of sand is thrust along the wet line and abandoned, something like the ocean. It is evening at the bottom of the Grand Canyon, and I am painting in my sketchbook, trying to catch the fleeting light. The dusting of halflight disappears in a glance. I give up and begin to turn the pages; these scraps of places and times illuminating in my mind like the quiet light of the evening revisited.

Early in the book there is a picture of the San Juan River from the boat launch of Sand Island. This is a pencil sketch, yet I remember the colors. The complexities of the bluffs hemming the river at Sand Island are like no other place on earth. Here all of the dramatic colors of the landscape are softened, as if this were the underbelly of the desert. At the time I was just learning to row a raft, not too sure of my abilities, even for the placid San Juan River. I was alone, having just arrived, and wasn’t to meet the rest of my group until the next morning. Across the top of the sky I had written:

7/19/93 - Looking upstream at sand island. As I drove in this evening, I saw a big white towncar manned by teenagers, doing donuts at the boat ramp. From a distance it looked like some giant white fish, scooped from the river and left thrashing on the shore.

I smile at the thought that almost three years later I am once again sitting by myself on a riverbank. I set the sketchbook to my side and stretch. Cool air is rolling off the water, and I set out for a pair of long pants and a cup of tea. I light the burner of the propane stove and survey the scene of our camp. The kitchen nestles in the shelter of some overgrown Tamarisk. A half-circle of chairs, now empty, sprawl and recline as if visiting with one another. Earlier, our group had settled comfortably there for dinner, facing the river and the view I had been trying to paint. We had sat, cradling our steaming plates in our laps, cold beers at our feet; a few acquaintances who have come together as family for this short time. The river is swelling in its banks because of the dam releases upstream, and the once tautly tethered rafts now tussle and nudge one another like large rubber puppies. I fill my cup with scalding water, stop to tighten the lines, and begin to gather my book, paints and chair. I notice that my book has fallen open to a new page.

Desolation Canyon - September 8, 1994. Another river trip, this time a friend and I had brought along two nine year old girls. The Cottonwoods were liquid yellow, and the four of us were like children in an abandoned playground. During lunch that afternoon the girls had cut flowering Tamarisk and fashioned grass skirts, tiaras, and necklaces for themselves. They had played imaginary games of being princesses on a deserted island, oblivious of their audience. I remember being amazed at this confidence of youth. This page of my book was drawn by Carly Heyrend, age nine. There is a picture of a tree, and in the branches is her list of all the animals we had seen so far:

*Cotton tail rabbits, coity, two hawks
Great Blue Harrins, Jumping fish, Lizard
Big Mystery animal groling in night.*

*Wind River Mountains, Wyoming. NOLS Instructors Course 8/13/95
to
9/7/96*



At the thought of mystery animals growling in the night, I pick up my sketchbook, fold my chair, and head for my sleeping bag. Once I've become something of a human larva, covered from head to toe in blue nylon and synthetic down, I flick on my headlamp and again reach for the sketchbook. It is showing its wear like a favorite toy. The binding is tearing loose and threads hang from it like moss. All of the corners are bashed in and there is a large stain, coffee I think, on the front cover. A third of the pages have a wavy topography from water damage. This book is usually crammed into a pocket of a backpack, passenger's seat of the truck, or the drybox of a raft, and has the scuffs to show for it. I let it fall open in my hands and this time the picture is not of a riverscape, but a snowscape.

8/19/95 - At the toe of Grasshopper Glacier, Wind River Mountains, Wyoming." We had been traveling on glaciers for eight days. This silent and frigid landscape had the same stark beauty and loneliness of the desert, only more so. This was a place where one was constantly confronted with their smallness in the world. It seemed as if I was on the moon, or in a black and white movie. The sky was enormous, a cobalt shell over all of that ice and rock. I kept noticing these iridescent green beetles melted into the snow, blown up there by some crazy wind. I felt as out of my element as those insects. After eight days of being continually roped to my companions like a dog, eight days of that intense light and all of that ice and silence, I was ready to descend into a world made more for man. I wanted to smell a tree and walk on dirt. I was lonely for other living things.

I let the sketchbook fall closed and look up into the stars. I begin to slip off toward sleep thinking that there are as many pages to one's life as there are stars in a clear moonless sky of the Grand Canyon. It is all of those days of hope or boredom or loneliness, insecurity or confidence, or those days that we are like the sand, thrust along the wet line and abandoned; which shape us into who we are.

Colorado River Bed Case

Transcribed by John Weisheit

Two separate testimonies have been transcribed for this issue of The Confluence. These oral histories, by Kenneth Sawyer and Harry T. Yokey, will help readers to understand pioneering river navigation in shallow water using engines, both steam- and gasoline-powered. Also the work assigned to the U.S. Reclamation Service for the proposed dam construction below the confluence of the Green and Colorado Rivers.

The Testimony of Kenneth Sawyer Salt Lake City in 1929, Volume 11

He resides at Yuma, Arizona; is forty-three years old, and his present occupation is that of city engineer for Yuma.

He has been engaged in surveying and engineering work ever since he has been grown. He was formerly connected with the United States Reclamation Service, and worked for them for a number of years.

In 1914 he was on the Green River, from Greenriver, Utah, down to the junction of the Green and the Grand [Colorado River] and up the Colorado to Moab. He was sent into this country by the Reclamation Service, with a party under the direction of Mr. John F. Richardson, to make a reconnaissance and survey for reservoir and dam sites, along that stretch of the river.

During the course of his work he investigated three different dam sites.

The first one surveyed, and where they also carried on some diamond drill borings at the site itself, was the junction of the Green and the Grand rivers.

The second was just below Flaming Gorge, on the Green River, in what is known as Horseshoe Canyon.

The third was on the Yampa River, a tributary of the Green River, at what is known as Juniper Canyon.

In connections with his operations at the dam site, at the junction of the Grand and the Green Rivers, it was necessary to have certain machinery and equipment. This material was shipped on the railroad to Greenriver, Utah, and consisted of a light, horizontal boiler and drill engine [Sullivan type H drill engine], necessary casings and drill tools, drill rods, and so forth.

He was not present at the Greenriver when this equipment was received, as he was down in the canyon on a survey at the time.

He got back from the survey down the river while the machinery was being loaded on the boats. This took place about twenty-five miles below Greenriver, near what is known as Wimmer's Ranch [also known as Wheeler Ranch and Ruby Ranch]. To carry the boiler and engine, casing and drill rods, Mr. Richardson had built two scows; approximately six by twenty-four feet. The two scows were operated about five feet apart, and were decked over, so they were practically one boat. The boiler and the engine were mounted on the two scows to give a little motor power.

He didn't see this machinery hauled down to Wimmer's Ranch. He states that the boat with the paddle wheel, is Mr. Wimmer's boat *The Marguerite*. He believes that the scows and *The Marguerite* both drew, loaded, about eight inches. In addition to the scows and *The Marguerite*, he had three small row boats, and two small motor boats; about fourteen or sixteen feet long. The whole expedition moved down together; the scows with the machinery, and *The Marguerite* leading the outfit.

BY THE SPECIAL MASTER: You ran two scows and a paddle wheel boat and three row boats and two motor boats?

A: Yes, sir.

Q: Who was the Admiral?

A: I was the Admiral, and Captain Yokey was the captain of the expedition, of this expedition—Mr. Wimmer was the admiral—I beg your pardon.

BY MR. BLACKMAR: Just describe the progress of the flotilla down the river.

A: The scows, being the most awkward of the bunch, we led those off, and our trip I think, took three or four days, somewhere in that neighborhood. We grounded many times on sandbars, the channels being a little difficult to pick out.

One instance, I remember, we were forced to pull scows off of sandbars with block and tackle that we had on board, but ordinarily by piling our freight and shoving and reversing the paddle wheel on the *Marguerite* we were able to get free and proceed.

We had more difficulty several times below; the wide shallow places in the river, the bars would usually choke the water off and shoot it over against the bank at a bend, and there were occasionally rock banks there from twenty to fifty feet high, and it took a little work to get around those and fend the outfit off from the rocks.

But we would gather all hands with all the poles and oars and things we would gather, and we would all place these things against the rocks and shove, and walk along the boat and got by these places.

I think there were two such places that I distinctly remember.

Exhibit No. 264 clearly represents one of the operations in getting off a sand bar; and was the boat *Betsy Ann*, which was a little barge, used on the survey. He believes it was the latter part of August, 1914.

He knows that all of the boats of the expedition grounded frequently.

Q: What method did they adopt to get off?

A: We had plenty of help, and we just dropped overboard in the shallow water and pushed the boat back into deeper water and proceeded.

When the expedition arrived at the mouth of the river they tied up and made camp on the right hand bank of the Green; approximately one-half to three-quarters of a mile above where he intended to drill; and the next day he moved the drill scows down to the position of the first hole, and anchored them. This was about five hundred feet below the confluence of the two rivers.

Q: What means did you adopt to anchor the drilling outfit there?

A: Mr. Richardson, while I was down on the survey trip, had had a local blacksmith in Greenriver make two iron anchors similar to the ship's anchors, and we used two of those for our front anchors.

We had this catamaran; we had an anchor consisting of an inch rope at each corner.

Q: What do you mean by a catamaran?

A: That is the drill barge, the two barges with the five-foot space between them, decked over with planking.

Q: As I understand, you passed two lines to the shore?

A: We had the location of the holes fairly well in mind, and these anchors, the two front anchors already to drop, and as we got the barge a few feet from where we wanted to stop, we shove these two iron anchors overboard and stopped the progress of the boat approximately within a few feet of where we wanted to start operations.

Then later on we anchored the lower anchors, consisting of rocks weighing four or five hundred pounds, tied with a bite of this cable rope.

The purpose of this drilling operation was to see if there was suitable foundation for a dam there at this point, but they were not able to locate bedrock, and their deepest hole was one hundred and twenty-five feet. These holes were down through sand and an occasional boulder.

Q: How long a period were you there?

A: We started drilling in the first part of September, and came out again in the first part of November.

Q: What was the occasion of the ceasing drilling down there?

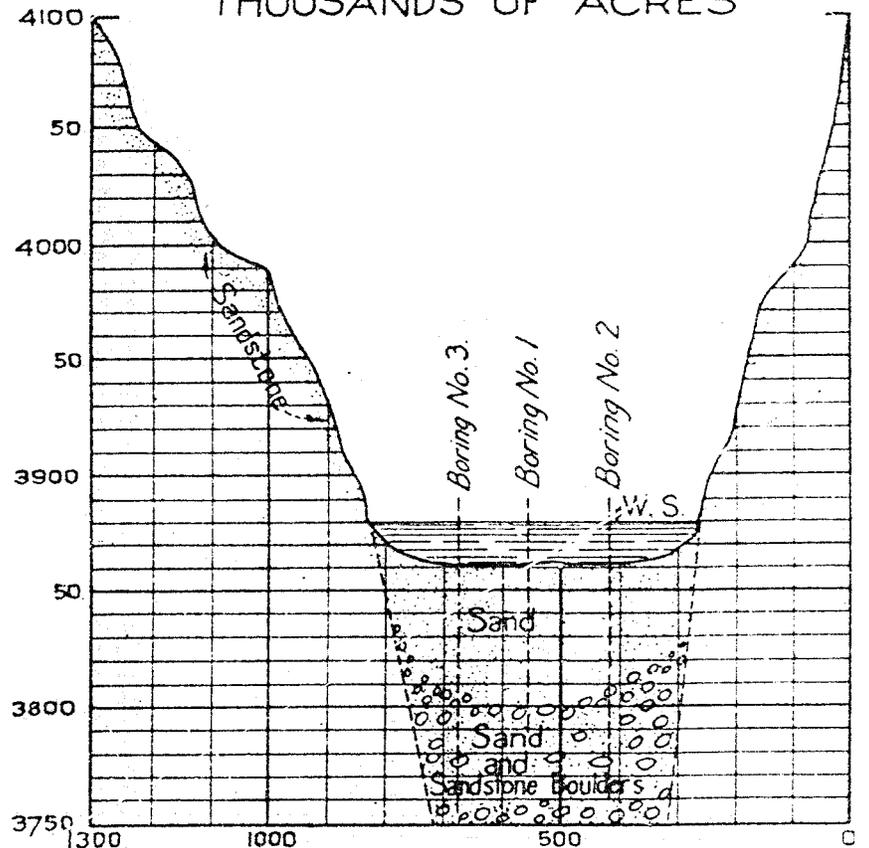
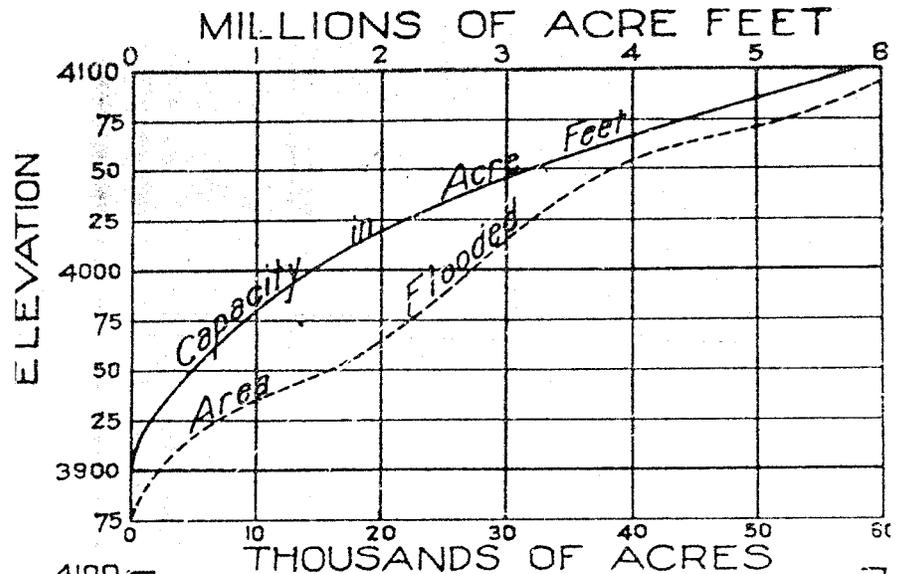
A: Why, one Sunday morning, while there were just a few of us in camp, we had about an eight foot rise, a sudden rise in the Grand, accompanied by immense quantities of driftwood; this driftwood came down so thick a chicken could nearly walk across the river dry shod.

We had difficulties in getting over to the barge, the drill barge, in a row boat, but by lots of action we got ahead of the driftwood a little and came in below it and got up to the barge.

This driftwood accumulated on the anchor ropes of the barge so rapidly we couldn't keep them clean, and it was about to sink the barge, so I got a shore line, an inch line ashore around a tree and cut the two front anchor lines with an axe, and as we swung around and hit the shore I had a second man with another line ready; it snapped the first shore line; the second one held long enough to swing us around to a projecting rock there which shunted the

driftwood down, otherwise I imagine the outfit would have been carried over the rapids, which were about a mile or a mile and a half below us [3 miles], the first rapids of Cataract Canyon.

I made arrangements for Mr. Hiser, the drill foreman, to line the outfit back up over the hole; we had lost about ninety feet of drill rods and casing that we wanted to re-



PROFILE OF DAMSITE
SECTION AND CURVE
JUNCTION DAMSITE
COLORADO RIVER
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UTAH
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cover if possible in order to resume operations, and I went up to Moab on the Grand River and wired the conditions to Mr. Richardson.

I got a wire back calling the outfit out; I think his wire said, "Take no more chances with life or limb," or something of that kind; so I brought the outfit out.

Acting on the telegram, which he received from Mr. Richardson, he took the outfit out.

As he recalls they started to take the outfit out about October 25.

After the flood subsided he went up the Grand River, in a motor boat.

He hired a Ford, and drove overland to Greenriver, where he bought an old paddle wheel that one was using.

He also got the gears and chains that he thought would be necessary to fix up the *Betsy Ann*, and Mr. Wimmer hauled this material down to the junction. They placed the small horizontal boiler and the engine on the *Betsy Ann*. The drill engine had a chuck that turns the drill rods, and they connected this to the paddle wheel and had a steam boat.

They loaded up with coal and left piles of it at intervals along the bank and stuck a pole at each pile with a flag on it, so they wouldn't run by it.

When they arrived at the junction he believes they had six hundred pounds of coal left. That was also loaded on the *Betsy Ann*, and the boat propelled itself up the stream.

They had taken the catamaran and lightened it in every way possible, *The Marguerite* pushed one of the scows, and the two motor boats pushed the other one. He loaded on what of the outfit he could, and cached the rest at the junction, and proceeded up stream.

BY THE SPECIAL MASTER: How did you get this stuff down with Mr. Wimmer from Greenriver to the junction that you brought down to fit up your *Betsy Ann*?

A: We brought it down in Mr. Wimmer's supply boat, *The Marguerite*.

Q: *The Marguerite* had gone down originally—

A: Yes, and then come back.

They made a trip every two weeks back and forth from Greenriver and it was on the last trip up. He went down the river on his first trip with Mr. Wimmer.

Q: Tell me the progress of this expedition up stream.

A: Why, on account of the steam boat of ours being a sort of home-made affair, untried, and the difficulties we had encountered along the river, we took things very slowly and cautiously. We had some difficulty in getting around a place, a

sharp bend where the river was throw against the cliffs, about two miles above the junction; the water was quite swift there; that was the only channel open, and we were hung up there for ten or fifteen minutes; we couldn't see whether we were moving or not; finally we would gain a foot or so; finally got the whole outfit past that point; and of course we had our daily round of grounding on sandbars; pick out the wrong channels amongst the sandbars and have to back up and push off and start again.

Q: Was Mr. Wimmer with you?

A: Yes.

Q: Was he in charge of the navigation?

A: I think he had the contract for the freighting of the outfit out of there.

It took the four of five days to come out with the outfit, to Wimmer's Ranch; which is located about twenty-five miles below Greenriver, Utah. They stopped there for the reason between that point and Greenriver, Utah, there are a series of gravel bars which are shallow, fast water, and wasn't possible to bring the outfit up over these bars.

The drill, and the other equipment was then unloaded at Wimmer's Ranch, and it was transported by wagon to Greenriver, Utah, and shipped by rail to Green River, Wyoming.

All the boats that went down the river came back up, with the exception of one row boat, which was lost at the junction. The row boats were fastened to the barge, and towed up; and were simply used for transportation back and forth across the river.

The two scows were pushed up the river, and the *Betsy Ann* came up under her own power.

Prior to the drilling operations he was in charge of the survey party, and this survey was started at Greenriver, Utah, and included the portion of the country above Greenriver for a few miles. As soon as the brought the survey down past Greenriver far enough, they had the *Betsy Ann*, two motor boats, and three row boats, and with this outfit he shoved on down to the junction.

This started in the middle of July, 1914; and was just prior to the drilling operations.

Exhibit No. 10 are the survey maps that were made at that time.

Above Greenriver he used oars and went on foot, and didn't use the river at all, and he didn't use the river for any of the surveys above Wimmer's Ranch, or just immediately below it.

After he started using the river it was necessary to get out of the boat frequently. Captain Yokey had charge of the operations of the motor boats, and the navigating. The motor boats were fourteen or sixteen feet long, and possibly for or five feet wide, and he doesn't believe they drew over seven of eight inches. [More discussion about getting stuck on sandbars.]

Between Greenriver, Utah, and the junction, he had made two trips with the survey party, one with the diamond-drilling outfit, and three or four trips while the drilling operation was going on. He believes he took two trips up the Grand River; and one with Mr. Eugene LaRue, on Mr. Wimmer's boat, up the Green River to the Wimmer's

John Richardson at the Junction Dam site, 1914



Ranch. [More discussion about getting stuck on sandbars.]

The Mr. Wimmer he mentioned in his testimony, is Mr. T. G. Wimmer, who is sitting in the courtroom. He has had no conference with Mr. Wimmer; and he doesn't know whether or not Captain Yokey was in Denver [courtroom].

Testimony of Harry T. Yokey Denver in 1929, Volume 15

Harry T. Yokey testified for complainant on direct examination as follows:

I have lived at Elgin, across the river from the town of Green River, since the fall of 1903. There are about a half dozen houses at Elgin. I have built and operated so many boats on the Green River that I have forgotten how many I have operated.

My first experience was in the fall of 1903 with a row boat, when I went down to the Cataracts, about one hundred and twenty-five miles below Green River bridge. This was a hunting trip in October in a boat about fifteen-feet long and a three and a half foot beam. With two men and our bedding and provisions for thirty days, the boat drew six or seven inches. We rowed and towed the boat back upstream. When we got tired of rowing we would tow. When we came to the riffles we would have to tow. For two or three years I made these hunting trips every fall.

I helped launch the *City of Moab*, installed the engines in that boat and was its chief engineer. We started down the river in July, having plenty of water, and the boat drawing three feet or more. It had two tunnels twelve-feet long and a twenty-eight inch wheel. We went down to the confluence of the Green and Colorado and then up to the Slide, a place where there has been a slide that has dammed two-thirds of the way across the river channel. The water was at flood stage and couldn't make it up through the Slide.

Then we turned around and started back for Green River and left the boat tied up at a point within ten miles of the town of Green River at Halverson's Ranch. We only had one hub left on the propeller on the port side and one blade on the stern, so it was time to quit.

On our upstream trip we hit a sand bar a few times but went on over them. We were gone on this trip approximately ten days from the time we started until we tied the boat up. We made side trips being bound for Moab and were unable to get through the Slide at that flood stage of water, whereas in ordinary low water the Slide did not amount to anything. At high water it takes a good craft to go up the Slide. We left the boat at Halverson's ranch for about three or four months.

The owner having concluded to take off the upper works, removed the tunnels, extended the boat ten feet longer so as to make it a sixty-one foot boat, and then put in the steam power. After these alterations were made the boat was named the *Cliff Dweller*, and I was again chief engineer.

When we made the trip in that boat at which time it was called the *City of Moab* it was equipped with two gasoline, four-cylinder engines, rated at twenty-five horsepower. After alteration two stern wheel engines rated at twenty-five

horsepower each were installed. Going down the Green River with the *Cliff Dweller* after these alterations had been made, we had a very good voyage and went on down to Valentine's Bottom, located about one hundred miles below the town of Greenriver. This trip was made in the latter part of July.

Returning back upstream we did better than we did going down with the *Cliff Dweller*, Once in a while we would run on a sand bar. We tried to keep away from sand bars. I didn't keep any count of the number of sandbars we hit coming upstream, and I do not think the men who kept our log kept track of them. We came clear back up to the town of Green River in the *Cliff Dweller*. The boat was a little long for going over the riffles; the bow would jerk around and the stern came up and lift the wheel out of the water; then we would drop back, take a line ashore, and one man would get her off in twenty or thirty feet so we could get in the water and go on.

The boat was equipped with a six-spike capstan. On the upstream trip we used the capstan at Fort Bottom, where we ran on to a sand bar without putting off until evening; had to take the anchor out in deep water and take a few turns around the capstan and pull ourselves off into deep water.

At one place going down, called Hell's Hole, stuck about two o'clock in the afternoon. We there threw the anchor overboard and next morning the boat was floating free. That was at a point thirty or forty miles below the Denver and Rio Grande bridge and about fifteen miles below the San Rafael. We used a common old fluke anchor weighing one hundred and fifty pounds.

When the boat was as the *City of Moab* it did not carry a capstan. When operating the *City of Moab* we only ran lines to shore on one occasion, which was on the down trip at a point two miles above Horseshoe Canyon. We carried no freight on those trips, but the owner of the boat had two guests.

Our trouble at the Slide on the *City of Moab* trip was because of the flood stage of water. At low water and at minimum stage of water it was no trouble to go through the Slide; but at high stage I don't think a craft can go through there. Fort Bottom was figured to be about eighty miles below the town of Greenriver and Wimmer's ranch is twenty-five miles below Green River. A place called Brigham's Aleck is where we got stuck on the bar and got off with the capstan and anchor. On the upstream trip we stopped at Wimmer's ranch, which used to be Wolverton's camp, and raised our engines because the paddle struck a little below the bottom of the boat and we wanted to raise them so they would be in the clear. I think it took us two days to raise the engines.

The owner, Mr. Lunsden, sold a half interest in the *Cliff Dweller* to Mr. Seigmuller and they sawed the boat in two and shipped it overland to Salt Lake where it was used as an excursion boat. It only made the one long trip on the Green River. We made two little side excursions.

Exhibit 473, identified by the witness as a log, was offered in evidence, whereupon the witness was examined concerning the log by counsel for defendant and testified as follows:

We had no typewriter on the boat and the typewriting on Exhibit 473 must have been done in Cincinnati. I didn't know anything about any log being kept until about five years after the trip. Of course we hit a few sand bars, but the man who sent me this log was a chef with a rather lively sense of humor who liked to josh a great deal. I didn't count the sandbars and I don't think he kept a very accurate count of them. I can't identify the handwriting on Exhibit 473, but the exhibit was sent to me by Mr. Wise.

That portion of the so-called log down to the word "Notes" received in evidence and is set forth at length on pages 3409-3410 of the record and indicates that the *Cliff Dweller* left the town of Green River at 9 A.M. on August 6, 1906, arrived at Valentine's Bottom on August 9; arrived at Riverside on the morning of August 12 and engaged in the work of raising the engines and overhauling the boat until August 15, when the journey upstream to Green River was resumed and the boat arrived at Green River at 3 P.M. on August 16.

Resuming his direct examination Mr. Yokey testified:

After my trip in the *Cliff Dweller* I built a boat called the *Black Eagle* that was about forty feet long, with a six foot beam, and a draft of seven or eight inches. It had a semi-tunnel, half in the boat and half outside, and was equipped with a water tube boiler and a twenty horsepower compound vertical marine engine. It burned coal but we mostly depended on driftwood for fuel. I built this boat one, two or three years after the *Cliff Dweller* was sold and taken to Salt Lake, and launched it in the spring of the year. A month or two later I made a trip with the *Black Eagle* down to a point within ten miles of Valentine's Bottom, where the water tube got full of mud and blew up. I think the boat is still down there. I came back upstream with Mr. Wolverton on the *Wilmont*. He and a man named Woodruff had been prospecting around below there. I had been figuring on rowing back upstream and had a light boat along but I on back on the *Wilmont* with Wolverton and Woodruff. When I left the *Black Eagle* there I took out the boiler and engine and put them on shore with the cable. A year later I went back there and found the cable stretched out, one end of it on a tree, and I suppose the boat was on the other end, although I didn't see it. I later built another launch and went down the river and got my boiler and engines that had been in the *Black Eagle* and brought them back up to the town of Green River.

I do not remember a boat called the *Betsy Ann* [see Sawyer's testimony in this issue].

After asking examining counsel whether the *Wilmont* is the boat that was sunk up near the Denver and Rio Grande bridge and upon receiving a negative answer, the witness continued his testimony: I think the *Wilmont* was right below Wolverton's house. I saw what I judged to be the boat sticking up there.

I didn't give any name to my next boat but made it lighter so that it would run easier. That boat is now down at Tickaboo Rapid near Cass Hite's place. I sold it to Messrs. Fletcher and Butler and they took it overland via Hanksville and lost it at Hite. That boat was about twenty-eight feet

long with a draft empty of about eight inches. It was powered with a double cylinder Northwestern engine of ten horsepower. After they launched the boat I went down to that section of the Colorado River and spent thirty days working on a gold bar. The boat was there when I left, tied up just below Tickaboo Rapids, which they couldn't make with the boat and it was tied up there. I never operated the boat down there.

I was engaged in the work of taking some machinery down the river for use on a government survey being employed by John F. Richardson of the Reclamation Service. I had a fourteen by four foot boat, with a six horsepower engine, and took Mr. Richardson down to the head of the Cataracts in that boat.

Mr. Richardson told me he had a party of twelve men coming in with ten tons of supplies to be taken down and wanted to know how I would get it there. I told him to make a barge and take it down, and I built a barge thirty-two feet long by eight foot wide in ten days. I didn't name that barge.

We put five hundred or a thousand pounds of supplies in it at the Green River bridge and Richardson's field man, Mr. Sawyer, went down and also a man named Joe Ross. Meanwhile I got another launch that I had used at Halverson's ranch ten miles below. I used two sweeps on the end of the barge and tied it up at Halverson's ranch, where supplies had been hauled in from Green River, and we loaded the barge at that point. I didn't load all of the supplies on the barge at Green River because I was a little leery about a place called the Auger, where the river takes a short turn. I am afraid I couldn't make without landing on the ledge. I had no difficulty in going down to Wimmer's ranch.

After we completed loading the barge at Halverson's ranch located ten miles below Green River, took it on to the mouth of the Green River. In connection with my launch which was equipped with a six horsepower engine. We lashed the barge to this launch. One of the launches would take care of the upper contour of the river and the other would take care of the lower level. The barge was finally sold at auction for or five dollars and is now down there on a sand bar. One of the launches belonged to me and the other to Mr. Anderson. My launch is not at the bottom of the river, I think, and I don't know what became of Anderson's launch, but it is not on the Green River now and there are no power boats except at Moab that I know of. I live within one hundred feet of the Green River.

Exhibit 474 is a picture of the *City of Moab* under construction at the Denver and Rio Grande pump house. Exhibit 475 is a picture of the *Undine*, which was brought into the country before I came there. Exhibit 476 is a picture of the *Cliff Dweller*, rebuilt from the *City of Moab*. That picture was taken within a day or two of the first date appearing in the log (August 6; 1906). (The three last mentioned exhibits were received in evidence.)

Harry T. Yokey testified on cross examination as follows:

After our one hundred mile trip down the river, we came back up to the town of Green River in the *Cliff Dweller*. Mr. Lumsdon told me and his foreman, Mr. Anderson, that we

could go ahead and operate the *Cliff Dweller* during the next season if we would stand all the expenses. Anderson and I started in good faith, but when Lumsdon made the sale of the boat we released him from his agreement.

Anderson and I merely had a verbal agreement with the owner of the boat, pursuant to which he gave us the privilege of fitting it up; we thought some changes should be made and we were going to be allowed to keep all we could make out of the boat during the coming season. When the owner received a cash offer for his boat we released him from the contract. The *Cliff Dweller* had a draft of sixteen or eighteen inches, and I am sure that when we started down the river with seven tons of coal on board and it had a draft of about twenty inches,

A boat with an eighteen inch draft would require two feet or more of water, and where the river splits up into two or more channels and at a real low stage of water, you wouldn't find that depth, although there is no time in the year except at really low water when there would not be such a channel in the Green River between the town of Green River down to the mouth of the stream.

I have lost count of the number of times I have been down to the mouth of the Green River. Some years I have made that trip three or four or five times; other years not more than once or twice. If a party came along I was always ready to take them down. Some years there are spots between the town of Green River and the mouth of the Green River where you couldn't find, at low water, a channel for a twenty to twenty-four foot boat a foot of water, on account of the river being up into two or more channels; if you had all the water in one channel, you would have sufficient water.

I don't know exactly how much water the *Wilmont* drew; it was a side-wheeler and would draw less water than a propeller boat. Mr. Wolverton did most of his running down the canyon with that boat. We met with our troubles up on these riffles. He would know more than I would as to whether there is any stage of water that boat could go up and down the Green River. I wouldn't care to express an opinion as to whether the *Wilmont* would experience trouble at any stage of water in going up and down that stretch of the Green River between the San Rafael and the mouth of the Green.

Three years ago I was unable to get my boat that didn't draw over a foot of water up the river at Little Valley. That is the only occasion in my experience when I could not get up and down the Green River with a boat having a draft of one foot, and therefore I "always came back to the home port." Up until then I had always been able to find a channel sufficient to permit a boat drawing a foot of water to travel through.

At Barrier Creek, Valentine's Bottom and Fort Bottom the river spreads out; and when I was taking the barge down for the Reclamation Service, I ran through the same channel; we covered the river four or five times a trip, taking the bars out at that point and cutting a channel. I came back there with the launches and only hit one bar. If we had not been traveling back and forth I probably would have gotten stuck. As a general thing, even at these shallow places such as I have just described, there is no diffi-

culty in finding a deeper channel, but sometimes it is pretty hard to find. If you keep turning you will finally get through. Even though you may be hung up for a little time by running on some bar, you are always able to reach your destination.

When I was carrying supplies for the Reclamation Service survey party, we didn't have occasion to go up and down the river with an interval of only a few days between trips; there ran a launch covering each end of the survey. During that time we did not have any occasion to leave the barge and come to Green River, although we took the launches to meet the barge at Wimmer's ranch and came to the town of Green River with both of the launches.

When the river rises if you go through and agitate the sand, it cuts a channel. When you come over that same route a day or two or three days later, it is my experience that the channel is enlarged and the current will go into one channel instead of spreading out into two or more. From my experience on the river I would say that the effect of making frequent trips along the river would not be noticeable through that stretch lying thirty miles below Green River bridge; but from there on down the river frequent trips would cause a channel to and be of benefit in navigating the river and would keep the channel open. During the first thirty miles where frequent travel would have no effect, you encounter gravel, and from there down you find sand. The shallow places that I spoke of below the mouth of the San Rafael are points at which there is sand but no gravel.

On the occasion when I left the *Black Eagle* downstream and came up with Mr. Wolverton on the *Wilmont*, we hit a sand bar a couple of times, but had no trouble and got off within a short time. During a year like this when there have been no boat run to stir up the sand below the mouth of the San Rafael and the mouth of the Green River, I wouldn't care to accept a contract to deliver freight and merchandise and passengers to points up and down the river along that stretch after the middle of July. I would wish to start in when the river was going down and then agitate the sand and cut out the channel after it has settled. At this time of the year I wouldn't take a contract. I took my contract with the government about July 1 and have never had any contract later in the year. I have gone down where boats had not run during the year and I have been stuck a good many times where the river divides into three or four channels and there had been no boat there but me to make a channel. It is desirable to go on the river at a minimum stage when the river is dropping.

I recall coming up to your office, but I don't recall telling you that the Green River always had a channel if you know where to find it. I did tell you that there was no difficulty in going up and down the Green River after you made a channel. If I go downstream when the river is falling and make a channel, in making a trip after that I have no hesitation about coming back; I know where I am all the time and come right on through. I have done it and can do it again.

If you hit a sand bar at this time of the year going at good speed it will feel as if you had struck a rock. You may find two or three hundred feet where the river is spread out, with maybe three or four channels. There are a few

places where you would strike hard. Right today, if I knew that a boat had not been down the Green River this year, and if somebody wanted me to take two thousand pounds of supplies down the Green River, I would tackle the job if there was compensation enough and I would reach my destination in the course of time; and after that trip if some one else should come along and wanted me to repeat it, I wouldn't have nearly as much hesitation about taking on that job. I would feel that after the first trip had been taken the later trip would be easier.

[Comment: There are times in low water when travel across sandbars is impossible for boats that draft as much water as described by Yokey. Modern inflatable pontoon boats with outboard motors draft little water in comparison and can float over such sections as described by Yokey. Jet boats are able to navigate over these low points when on full plane. In a severe and sustained drought, however, it is possible that all navigation could cease.]

H. T. Yokey testified on redirect examination as follows:

The channel cuts most when the water is falling. There is always a current where the most water is running and it will collect there and commence to cut. When the water is rising there will be crossing bars in different places on the inside of the bends; when the water falls it cuts and spreads out and deposits maybe a few hundred yards or a half mile further down. Then is when you should be running your boats to make a channel.

In the trips that I have made down the river I have general found the channel and the deepest water pretty near in the same location. You always find plenty of water on the outside of a bend. [Comment: This is absolutely not true and I am disappointed that Yokey even uses the word "always" in his vocabulary.] It is when you cross from one bend to the other that you have trouble in locating the channel. When you come into a bar you feel the pull of the rudders easing up and edge along and come to deep water; by the sense of touch you can wind on through and find the channel; otherwise, if you hold your rudder stiff you would run aground. I have no shallow draft boat at the present time; my boat draws, I should judge about twenty inches.

Harry T. Yokey testified on recross examination as follows:

The open season for hunting deer in this state is about October 10, and my hunting trips in 1903, 1904, and 1905 were always in October with a row boat. Row boats don't draw nearly as much water as a power boats. It is a great deal easier to find a channel coming upstream than going down, and because coming against the current you have plenty of time to pick out your course. Going downstream you have trouble because you come on to it suddenly.

H. T. Yokey, in response to questions propounded by the Special Master testified as follows:

The barge that we built to take down supplies to the government expedition carried a load estimated at ten tons down to the junction of the Green and Colorado Rivers; where it was cached for government party. That was after

they had made their survey for the proposed dam.

H. T. Yokey testified on further recross examination as follows:

I have a twenty-two foot cruiser made fourteen-gauge iron and wire. It has a beam of five feet. I think it will be launched in the Green River some of these days. It has an eighteen inch propeller and the skag below is over ten inches. It draws too much water and I am figuring on putting on a stern wheel. It is my intention to put this boat in the Green River and to operate it there, and I expect to go down to the junction and around up to Moab in that boat if I am not prevented by Mr. Hoover and Mr. McDonald from building the boat.

End of testimony.



Close-up of Charlie Spencer taken in the spring of 1909 during his attempt to mine gold from the Wingate sandstone along the San Juan River.

Charlie Spencer's Mining Operations, 1908-1909 San Juan River, Utah

by Robert Sorgenfrei, Librarian/Archivist
Colorado School Of Mines, Arthur Lakes Library
Russell L. & Lyn Wood Mining History Archive

In 1883, gold was discovered not far from the San Juan in Glen Canyon on the Colorado River and a minor gold rush began in the region. This paved the way for gold discoveries along the San Juan River in 1892, and by the end of the year the San Juan region was full of gold seekers. The Gabel Mining District along the San Juan River was organized on November 28, 1892. The district boundaries extended from the Utah-Arizona border to a point 50 miles north of the San Juan River between 110 degrees and 112 degrees west longitude. Lengthy rules and regulations for the mining district were drawn up and are on file at the Recorder's Office in Monticello, county seat of San Juan County, Utah. In 1892, *The Salt Lake Tribune* carried numerous articles about the San Juan Country that fueled the gold rush to the region. For a while in 1892, more than 200 men a day were coming into the region. However, this was a short-lived gold rush. The gold to be found was mainly flour gold, so fine that it defeated the efforts of most miners to recover it in sufficient quantity to justify the effort. By the end of January 1893, the boom was over and men started to head for more promising areas in Glen Canyon and in the Henry Mountains. After the 1892 gold rush, mining continued along the San Juan on a small scale. By the early 20th century, most mining activity was confined to a 20-mile stretch of the river below Clay Hill Cross-

ing and as far as the great bend of the San Juan River. At this time, there were two prominent mining operations in the San Juan Canyon. The first was owned and operated by the Otto Zahn family of Los Angeles at a place called Zahn's Camp. They bought the placer claims at the camp in 1902 and off and on conducted mining operations there at least until 1915.

A few miles away from Zahn's Camp, there was a second mining operation run by a person that would be associated with ambitious mining schemes for over 50 years. Charles H. Spencer, known to all who knew him simply as Charlie, was born in Walsenburg, Colorado in 1872. Later he became teamster delivering freight by wagon in the Durango area. He was first drawn to the San Juan Country in 1892 when his freighting firm was engaged to haul supplies to miners during the short-lived gold rush. Later he claimed that he celebrated his twentieth birthday by driving a wagon and team of oxen over country in the San Juan Region that had never seen a wagon wheel. He was an expert bullwhacker, a special brand to teamster who could get a team of oxen to go places few other drivers could. Spencer started to pick up knowledge of mining by watching and conversing with miners along the San Juan River as he delivered freight. Although he had little formal schooling, he was a quick learner and was very personable. As he learned about mining, he became adept at using mining terms and jargon in ways that impressed would-be investors. Spencer soon got a sales pitch down that he used for years to entice money out of would be investors.

Albert Jones, who worked for Spencer wrote of him: *"His Western manners and the magnitude of his projects and their fabulous possibilities seemed to have an irresistible appeal to the small investor, and when one operation failed or was inconclusive, he always managed to raise more money and try again."*



Spencer freighting in supplies to his camp along the San Juan. Charlie Spencer was famous for getting an oxen drawn wagon over terrain that few other bullwhackers could.



Spencer Camp or Camp Ibex, as Spencer called in the winter of 1908-09. The camp was located at about mile 37 above the confluence of the San Juan with the Colorado River.

When he made what he thought was a discovery while prospecting, he spent little time with scientific testing. Since he truly believed everything he claimed, and was a born salesman, he was a real threat to the pocket book of any naïve investor. Yet Spencer was not a fraud. He believed everything he told investors. He was also a hard-worker, not afraid of doing his share of manual labor in camp.

After Spencer started prospecting along the San Juan, he developed a theory that the gold along the San Juan River came from the Wingate Sandstone located along the river. He had tested for gold in gravel bars along the river and found nothing, but he did find gold in eighteen-inch layers of red sand that ran through the gravel bars. This red sand came from the Wingate Sandstone. Spencer believed he had discovered the source of the gold in the San Juan. With this “discovery,” he became convinced he had the answer to recovering the gold that had eluded other miners along the San Juan River. Why get it from placers where the river has ground it down to flour when you can get it from the source, he reasoned. There are vast amounts of Wingate Sandstone right along the river in great piles that did not have to be mined, but simply crushed and chemically amalgamated in order to get the gold out. To Spencer the Wingate Formation was an unlimited source of “ore at hand.” All Spencer had to do was convince others of his theory and vision for gold mining on the San Juan and get them to finance it.

By 1908 Spencer had amassed enough capital from investors in Chicago to set up an operation along the San Juan River at about mile 37 above its confluence with the Colorado. The place along the San Juan River where Spencer ran his mining operation, he called Camp Ibex, because as he put it, “only a mountain goat would attempt to reach the place.” However, it was commonly referred to as Spencer Camp, and most maps that show its location use that name. In the camp itself, three rock walled structures covered with canvas tenting were erected. Two of the build-

ings served as bunkhouses and the other was a cookhouse. Camp Ibex or Spencer Camp operation launched Spencer’s career of promoting ambitious but ill-advised mining projects that spanned more than fifty years.

In November 1908, Spencer was able to recruit the services of John H. Marks, a mining engineer and his assistant, Albert H. Jones, a civil engineer. Both worked out of Denver and came out to the San Juan Country to survey and mark Spencer’s claims for him. They worked for about three months doing this survey work while Spencer was away purchasing machinery to bring into the camp. He returned in mid-February and told them a road would have to be constructed to get the machinery down to the camp along the river. With Marks and Jones marking out the route, Spencer employed a pick and shovel force of Na-

vajos and Paiutes to construct the road. A 1000-foot rise from Nakai Creek to the rim at the top of the San Juan River Canyon had to be traversed before the road could be built down to the river. In places grades ran as high as 25% on the road. In March 1909, the road was completed. Spencer Camp was about as far away from a railhead, as one could be in the early twentieth century continental United States. Gallup, New Mexico and Mancos, Colorado were the nearest railheads, and both about 200 miles away. With the road built, Spencer was able to get heavy machinery such as crushers, boilers, amalgamating tables, and a large gasoline Otto engine to his camp by wagons drawn by as many as five teams of oxen at a time. Hauling this machinery 200 miles from Gallup was a major feat and a tribute to Charlie’s bullwhacking skills. The only other place to get supplies was at Oljato Trading Post on the Arizona Utah border near Monument Valley, but supplies were expensive there and Spencer preferred to get them in Gallup and haul them in.

By the time Spencer got his road built and the machinery hauled in and put in place, he was almost out of money and operations had to be suspended. This was around the end of March 1909. In order to try to get more money out of his investors, Spencer hired Marks to write a mine report on his San Juan Mining Operation that he could use to attract investors. After this report was written, Spencer took it and his sales pitch back East and was able to squeeze more money out of his investors. He returned to his camp in June 1909 but this time a mining engineer from Chicago with assaying knowledge came along. After about a week of making tests and assays, the mining engineer from Chicago became convinced that the operation was of no commercial value and the operation was closed down.

Spencer then went to Chicago again and tried with all of his powers of persuasion to convince his investors to let him keep trying. But investors refused. However, just before he was ready to call it quits and come back west, he

met Dr. Herbert Parkyn, a psychologist and mine promoter in his own right who had written a pamphlet entitled *How to Get Back The Money You Lost in Mining*. Spencer found a kindred spirit in Parkyn who in turn found a new group of investors willing to back the operation.

The investors sent out from Chicago, W. H. Bradley, a mining engineer to observe the operation, take samples and make tests. Bradley soon became convinced from his test results that the operation had no commercial value and the camp was shut down. However while at Spencer's Camp, Bradley had tested the shale deposits from the Chinle Formation, known locally as "San Juan silts" and found some promising results from the tests. Just after this happened, two prospectors passing thru camp told Spencer and Bradley that the Chinle formation ran right along the river at Lee's Ferry, Arizona. The idea of recovering gold from Chinle shale appealed to Spencer since it did not have to be crushed, and was sluicable with high pressure hoses. At a site like Lee's Ferry, shale could be hydraulically mined right along the river with pumps powered by coal found upriver, and supplies could be brought in easier. Therefore it was decided to shift the mining operation to Lee's Ferry. This operation too ended in failure when it was discovered that an unknown substance clogged the amalgamator, allowing gold to be passed out with the tailings. Years later it was learned that this substance was rhenium. Before the operation folded, the one event that Spencer is most known for occurred: the steamboat, *Charles H. Spencer* was built at Lee's Ferry and abandoned at the river's edge where it remains today.

Charlie Spencer was undaunted by every set back he encountered with his mining schemes and went on promoting bigger and better things that somehow in the end never seemed to quite pan out. In early 1960's while in his nineties, he tried to mine the rhenium at Lee's Ferry that had forced him to abandon his gold mining operation fifty years before.



A view of the San Juan looking downriver from Spencer Camp. This area is now silted in and unsuitable for rafting.

However in the end he mined far more money from investors than he ever made from the ground. Spencer died in 1968, living to see Glen Canyon Dam built, and his mining camp on the San Juan that launched his mine promoting career drownd by the waters of Lake Powell. Before his death, he expressed doubt the sandstone and shale formations that Glen Canyon Dam is built on would ever support such a structure in the long term. Charlie knew a great deal about the rock formations along the river that denied him the gold he sought after; perhaps more than the civil engineers that designed the dam. In 1983, after a period of heavy rain and runoff from snowmelt the spillways of the dam came close to failure. Perhaps Spencer may yet have the last word about the sandstone and shale formations he knew so well: the dam has yet to experience a 100-year flood.



Charlie Spencer and crew at Oljato Trading Post in 1909.

AN EARLY TRIP DOWN THE GREEN AND COLORADO RIVERS?

by Jim Knipmeyer

In an article entitled "Henry Fraeb, Mountain Man" that appeared in the June 1985 issue of *Frontier Times* magazine, the author, Dale T. Schoenberger, made an intriguing statement. He said that, "In the fall of 1833 Fraeb and a score of trappers descended the Green River to its junction with the Colorado in Utah. Fraeb's party then descended the Colorado into northern Arizona."

The author is clearly implying that this trip was made by water, which if true would have been one of the earliest descents of the Green and Colorado rivers on record. Unfortunately, no footnotes or endnotes accompanied the article to indicate just where Mr. Schoenberger got his information. However, it proved easy enough to trace the story back to its original sources.

The only detailed biography of Henry Fraeb is that by western historian and author LeRoy R. Hafen, and which is included in his ten-volume series *The Mountain Men and the Fur Trade of the Far West*. In it Mr. Hafen states that, "For the fall 1833 trapping Fraeb took a party of twenty men down the Green River and the Colorado, with Bill Williams as guide. Early next spring, according to Joe Meek, they were visited on Bill Williams Fork of the Colorado in Arizona by some of Joe Walker's men returning from California."

Fortunately, Mr. Hafen's biography did give the primary sources for the statements contained in the above two sentences. The first came from a letter written by Thomas Fitzpatrick to Milton Sublette on November 13, 1833. The other was contained in the biography of Joe Meek, *The River of the West*, by Frances Fuller Victor.

Fitzpatrick's letter simply said, "Fraeb with about 20 men is gone down the Seedkeedee with Bill Williams for pilot and intends not to return before March 1st." The "Seedkeedee" was one variation of the trappers' spelling of the Indian name for the Green River. Meek, in relating his life story to Mrs. Victor many years later (the book was published in 1870), provided the additional information concerning Fraeb's trip. He said, "1834. In February the trappers (Walker's group)...ascended the Colorado once more, to Williams Fork, and up the latter stream to some distance, when they fell in with a company of sixty men under Frapp (*sic*) and Jervais...."

In neither account is the actual route of Fraeb's party given. Mr. Schoenberger knew Fraeb's starting point on Ham's Fork of the Green River in present-day southwestern Wyoming and his end point on Bill Williams Fork of the Colorado River in today's western Arizona. Therefore, in his *Frontier Times* article, he evidently assumed that Fraeb and his companions descended the two rivers and so stated it thus in his article.

What the author apparently did not take into account was the geography of the region between Ham's Fork and Bill Williams Fork. A river route between those two points traverses some of the deepest can-

yons and roughest whitewater rapids on the continent. These include Disaster Falls and Hell's Half-mile in the Canyon of Lodore, Mile-long Rapid and the Big Drops in Cataract Canyon, and numerous major rapids in Marble Gorge and the Grand Canyon. Even Fitzpatrick's "20 men," much less Meek's sixty, would have been a number that precluded a voyage by boats. A journey made by water, therefore, would have been most impractical and very unlikely.

However, one of the statements in Joe Meek's account does provide an alternative possibility. As given above, Meek says that he and his party met that of Fraeb "up the latter stream (Bill Williams Fork) to some distance...." A well-known trail used by fur trappers and traders since the decade of the 1820s connected the Green River basin of southwestern Wyoming with the Mexican settlements in New Mexico by way of western Colorado. A branch of this trail threaded the Uinta Mountains separating the Green River basin from the Uinta basin of northeastern Utah, traversed the Tavaputs Plateau, forded the Colorado River near present-day Moab, Utah, and continued on south into Arizona and the headwaters of Bill Williams Fork.

It is, therefore, much more likely that Fraeb and his twenty fellow trappers (or sixty) followed this overland route and *not* the Green and Colorado rivers themselves.

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Jim Knipmeyer, in association with University of Utah Press, have produced a new book called *Butch Cassidy Was Here: Historic Inscriptions of the Colorado Plateau*. ISBN 0-87480-736-0



LABYRINTH CANYON

A Case Study in State and Federal Cooperation for Administration and Management of Recreation on a Navigable River

by David Dawson, Dennis Willis and Pam Swanson

Presented at "Incredible Rivers and Incredible Demands" Sixth Biennial Symposium on River Management and Planning. Boise, Idaho, May 1-4, 2002

There is an exquisite charm in our ride down this beautiful canyon. We are all in fine spirits. We whistle or shout or discharge a pistol to listen to the reverberations among the cliffs. We name this Labyrinth Canyon. John Wesley Powell, 1869

Introduction

The allure of this beautiful canyon, noted by John Wesley Powell in his diary entry of July 15, 1869, has, in the last decade, begun attracting fairly heavy recreational use. Along with the increased visitation have come increases in the usual impacts—popular campsites have seen a proliferation of fire rings, vegetation stripped for firewood, toilet paper flowers sprouting from behind any vestige of concealment and many sites taking on the pungent aroma of a frat house backyard the morning after a kegger. To say the least the allure has become slightly tarnished.

Labyrinth Canyon is a sixty-four mile long segment of the Green River in southeastern Utah (fig 1.) Powell named it for its many intricate twists and turns. It may just as well have been named for the maze of conflicting Federal and State jurisdictions that have since been overlaid on this canyon. The river has been adjudicated by the Federal

Courts as navigable and thus managed by the State of Utah to serve the public trust. Two BLM field offices manage public lands above the high water mark. Recreation use on the river had been relatively unregulated. Both the State and Federal agencies had adopted special rules for the area. However, rules from the two sovereigns were not consistent and neither agency did enforcement due to concerns over jurisdiction. While the jurisdiction issues were being debated by the agencies, visitor use, impacts and incidents of noncompliance were increasing. Natural and cultural resources were being damaged or placed at risk. Visitor impact and conflicts reached such a level, the commercial guiding community demanded effective action be taken. The agencies have embarked on a cooperative effort to create a seamless permit system, adopt one set of regulations for the area and to improve enforcement efforts.

Jurisdictional Issues

Under the Equal Footing Doctrine submerged lands beneath navigable bodies of water belong to the state in which they are located unless the federal government explicitly reserved those submerged lands for some other purpose prior to statehood. Originally these lands were set aside to ensure unimpeded use of the river for transportation of commerce, much like modern-day highway easements. To date in Utah, only those river sections that could be used or were used for this original intent were adjudicated as navigable. The stretch of the Green River from the end of Swasey's rapid, just upstream of the town of Green River, to the confluence with the Colorado River through Labyrinth and Stillwater Canyons has been determined to be navigable (United States v. Utah, Civil No. C-201-62, Utah District Court, Central Division, January 9, 1965). Utah Division of Forestry, Fire and State Lands (FF&SL) is the managing agency for these lands.

In 1964 Congress created Canyonlands National Park of federal lands previously managed by BLM and in 1976 acquired all State lands within the Park boundaries including the riverbeds of both the Green and Colorado Rivers (State Exchange 96, filed Feb.24, 1972. Completed April 29, 1976). The northern Park boundary is roughly three miles downstream of Mineral Bottom on the Green River.

Lands upstream of the Park boundary and above the mean high water mark, with the exception of a handful of private inholdings, are federal lands managed by the Bureau of Land Management. The Green is also the boundary between two BLM office areas—lands to the East of the river are managed out of the Moab Field Office and lands to the West of the river are managed out of the Price Field Office.

The exact boundary between sovereign State and Federal lands is defined as the "ordinary high water mark" at the time of statehood, July 4, 1896. This is a difficult line to define. Since statehood, there have been numerous upstream dams and diversions and the invasion of tamarisk have caused narrowing of the channel. The river is also very active and carries a high sediment load. The channel moves about, cutting, depositing and generally rearrang-

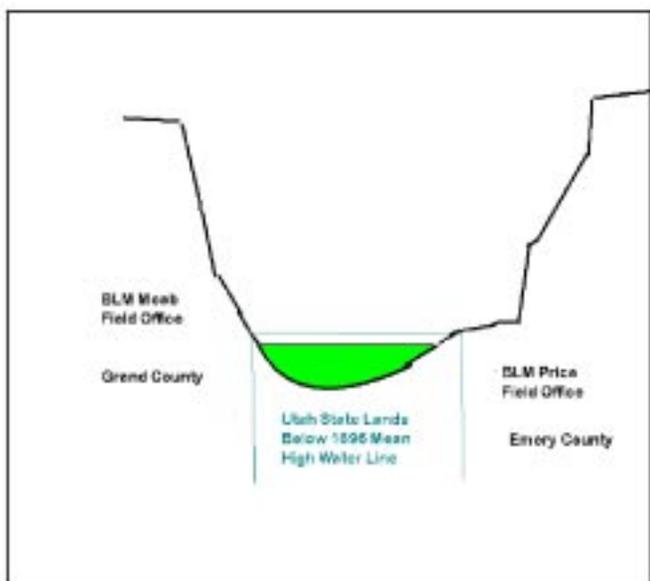


Figure 1. Labyrinth Canyon on the Green River

ing the bottomland. Thus FF&SL and BLM have described this line with a very broad brush.

BLM's authority to regulate recreational and commercial use of the Green River is rooted in the 1976 Federal Lands Policy and Management Act (FLPMA). The statute requires the Secretary Of The Interior to "manage the public lands under principles of multiple use and sustained yield" 43 U.S.C. § 1732 (a). Managing public lands for multiple use is defined to "meet the present and future needs of the American people," and must avoid "permanent impairment of the productivity of the land and the quality of the environment" 43 U.S.C. § 1702 (c). Further, the Secretary is given the power, to "regulate through...permits...the use, occupancy, and development of the public lands" 43 U.S.C. § 1732 (b). Because the typical river trip length involves several nights camping, and extended off river hikes, there are impacts on BLM lands associated with river running, especially during annual spring high water flows when camping on sand bars is not possible. Additionally there is the Horseshoe Canyon North WSA (Wilderness Study Area) extending 22 miles down the west bank of the river from river mile 81 to mile 59 (mileage is measured upstream from the confluence of the Green and Colorado Rivers, with the confluence being mile 0).

In 1993, BLM adopted rules for Labyrinth consistent with rules developed for river recreation in the rest of Utah's BLM managed river corridors. Group size is limited to 25 persons, use of fire pans and portable toilets is required, only driftwood may be collected for firewood.

FF&SL however had no special rules related to river recreation. Prior to 1994 the Division managed all State lands including State Institutional Trust Lands which are those sections set aside at statehood (in Utah typically four sections per township) to help fund public education through the lease or sale of said lands. Most State recreation/resource protection ruling were developed for these lands and pertained primarily to OHV recreation. River recreation and impacts to the sovereign lands in Labyrinth were simply not on the Division's radar screen.

The BLM and the Division of Forestry Fire and State Lands have acknowledged each other's sovereignty since the navigability adjudication of 1965. However with no parity in rules for the Labyrinth corridor and in the absence of clear delineation of State and Federal lands, enforcement of BLM's rules would risk a jurisdictional battle.

What seems to have resulted from defining the sovereignty of the two agencies was a Mexican standoff. BLM while enacting rules did little to enforce them and FF&SL seemed unaware that impacts to sovereign land were mounting. Thus the requirements of fire-pans and removal of fire ash and the use of portable toilets and limits to group size found on most other Western rivers seemed overlooked in the dual-agency management of Labyrinth. To add to the complications, there are three commonly used launch points for entering Labyrinth Canyon. Green River State Park, is located in Green River and administered by State Parks and Recreation, a sister agency of FF&SL under the Department of Natural Resources. Ruby Ranch is privately owned with the landowner making contact with boaters and charging a fee for the launch. Crystal Geyser

is owned by the City of Green River and is not staffed or supervised.

Management Challenges

During the 1992 season the Price BLM Field Office placed volunteer, Alan Jackson, at the Mineral Bottom ramp to monitor use. Mineral Bottom is an hour and a half from the nearest town of Moab. The ramp lies at the bottom of a remarkable set of switchbacks that descend roughly eight hundred feet through a natural break in the otherwise vertical Wingate sandstone. Jackson set up residence in a camp trailer at the remote ramp and kept tabs on folks launching from and taking out at the ramp. He also began to discreetly note the number of trips that were not using portable toilets. The Price office initiated a voluntary river trip registration. The registration included BLM regulations and general information and requested contact information for the group conducting the river trip. If a group failed to carry a portable toilet or fire pan a letter would be sent from the Price BLM office informing the people of the requirements. Alan has returned every season since and an interesting user profile of the typical Labyrinth trip has emerged.

Each year, 6,000 to 8,000 people float the river through Labyrinth Canyon. About 15% of the use is associated with commercially outfitted trips. Eighty-five percent of all users are on self-outfitted trips. Canoes are the vessel of choice for 65% of the visitors. The average trip length is 4.7 days. Slightly over one third of the trips do not comply with the human waste carry out requirements. Nearly all of the trips running without toilets launched from Green River State Park. Use seems to correlate with flows, high water years yield more river trips and more mosquitoes. High water campsites are limited in number and generally do not see flushing flows. The result is that in high water years, more people are concentrating on the limited number of camps, concentrating use on sites that are not very resistant to disturbance.

In 1999, Utah State University conducted a user survey on nine river segments managed by the BLM (Reiter and Blahna, 2001). This study shed further light on the management challenges and specifically the difficulty of communicating with users. Seventy-five percent of visitors reside outside of the State of Utah. This indicates our practice of issuing news releases though statewide outlets is not very effective. Eighty-four percent are on their first Labyrinth trip and 60% are on their first Utah river trip. Over a third rated their skill level as, "beginner." This lack of experience with the river segment and river running in general was more evident in Labyrinth than on any of the other study segments. When asked where they obtained their information about the river, 44% got it from friends as compared with 2% who obtained information from a government agency.

Against this backdrop of remarkable natural resources and serious management problems, the two sovereigns were engaged in a dispute over jurisdiction. The dispute resulted in both agencies abdicating their responsibilities to take care of the public trust. It took realization that re-

ardless of where the boundary line was drawn, both agencies had similar management responsibilities.

Resolution of the Problem

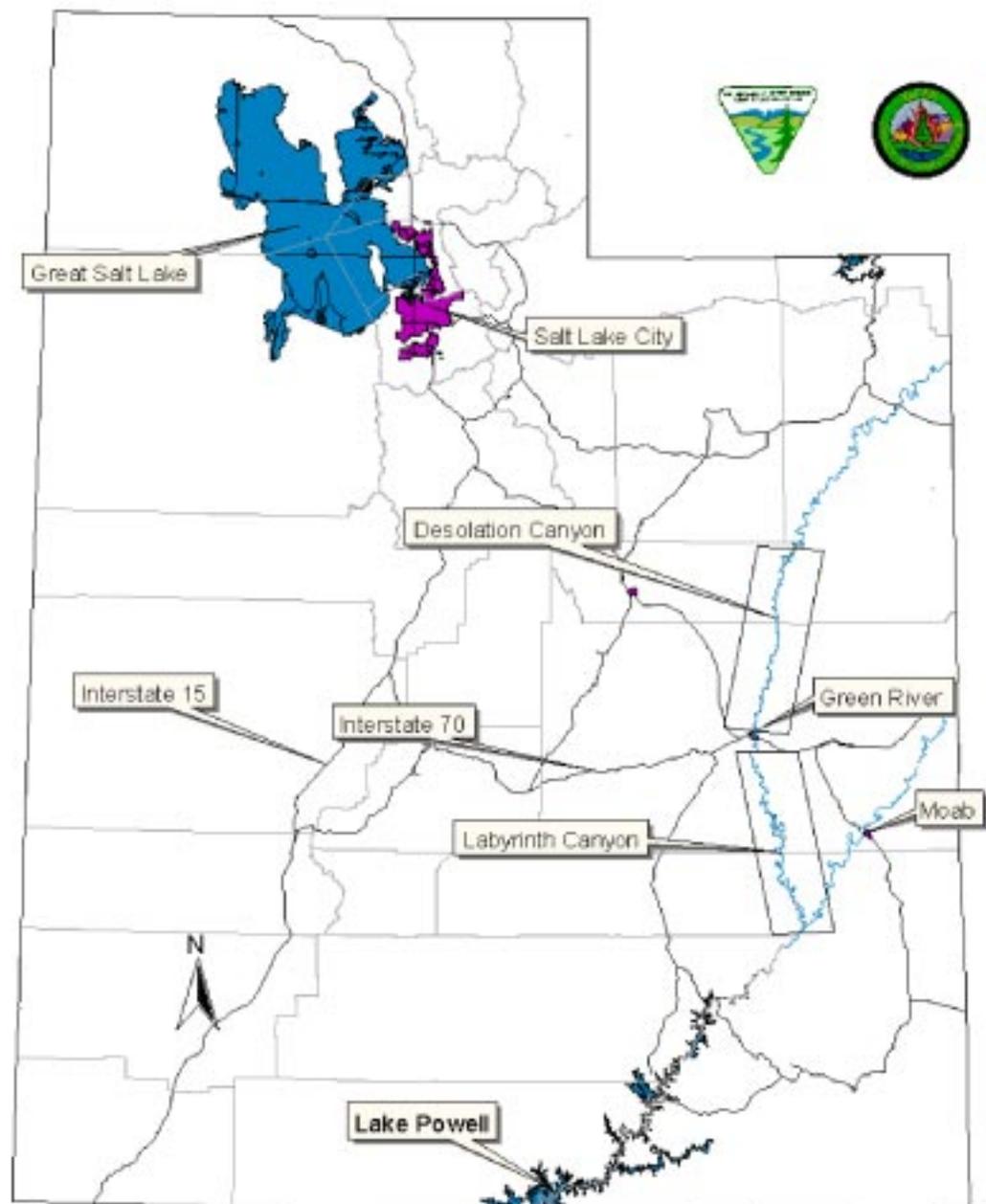
The impacts of the 1998 river season (a high-water year) were very observable and comment from both outfitters and private boaters finally reached the FF&SL folks. In response FF&SL erected signs at the Green River State Park put-in suggesting the use of portable toilets and fire pans. Rule making, requiring fire pans and human waste carry out was not pursued until the Spring of 2000 and it was not until the annual Agency/Outfitter meeting in the Fall of 2000 that FF&SL let it be known they had adopted rules on river recreation in parity with existing BLM regulations, i.e. carriage of fire pans and portable toilets is required. This unfortunately came to light in response to the outfitters' behest that some management action be taken to address the deterioration of the Labyrinth resource.

One of the major concerns was a series of fires caused by river runners allowing their campfires to escape. A fire at mouth of Horseshoe Canyon erupted under high winds from a boaters' camp and spread across the large bottom consuming mature cottonwoods, hackberry, and of course dense stands of tamarisk. Access to the common archeology stop at this bottom is now through the charred landscape. Fortunately the archeological site itself was unaffected. In another tragic case, 80 acres of river bottom were burned and the man responsible and his young daughter suffered serious burns. Since both sovereigns have a fire suppression mission, the fires were a good wake up call.

After the Fall Outfitter's meeting and the discovery that FF&SL had run resource protection rules through their rule making process, the dilemma became how to disseminate the new laws to the boating public.

On 12/14/2000 a facilitated meeting of outfitters and agency folks was held at the John Wesley Powell Museum in Green River, Utah. Sixteen folks participated, half agency people representing BLM, FF&SL, and State Parks and half outfitters. Rosann Fillmore, Director of Emery County Economic Development, facilitated the meeting. Problems with user's treatment of the resource were thrown out then solutions were proposed, the upshot being a permit sys-

Labyrinth Canyon



tem was decided to be the most effective way of getting information directly into the hands of people using the resource.

In order for FF&SL to enter into a permit system, a rule making process was undertaken which required passage by their board of directors then a sixty-day public comment period. Essentially the new rule makes mandatory under state law that any private party launching a multi-day Labyrinth Canyon trip must have in their possession a permit for that trip. This is the first time FF&SL has required a use permit on not-for-profit, public use/access to State sovereign lands. FF&SL determined that the permit must be free, for to charge a permitting fee would be a violation of their edict to hold the land in trust for the people of Utah.

Following the rule making process, a cooperative management agreement was drafted, reviewed by legal council, and adopted. The agreement defined the geographic boundaries of the cooperative river management area (CRMA) as the section of river from Green River State Park to the Mineral Bottom take-out. The agreement also acknowledged the legal authorities of the partners as pertaining to their roles in the management of the CRMA. Responsibilities of the partner agencies and the roles of each office involved are laid out. The BLM Price field office was designated the home office and repository for permits, a natural as commercial permits for Labyrinth are handled through this office. There is also a Labyrinth Canyon information web site and the Price office is the administrator with links from the other agencies. The BLM Moab Field Office has produced permitting information for the river user bulletin boards at Green River S.P., Crystal Geyser and Ruby Ranch put-ins and the Mineral bottom take-out, and is a permitting outlet. State Parks committed to increased presence on the Green River S.P. boat ramp and additional boating patrols and the park is also an outlet for permits. FF&SL committed to helping fund a three-month seasonal position contacting groups at the put-ins and their Moab office is also an outlet for the permit.

One of the beauties of a non-fee permit system is the lack of accounting concerns allows creative distribution. We have attempted to make the permit eminently available by having every point that a river trip might come into contact with in their planning or shuttle phase up to the point that they actually launch, be a permitting outlet. Thus permits are also available at the Moab Information Center (open 7 days a week 8:00 am – 10:00 pm, downtown Moab), Canyonlands National Park permitting office(permits trips entering the park, Moab), John Wesley Powell Museum (open 8:00 am – 6:00 pm 7 days a week, Green River), and Ruby Ranch (private ranch on the Green river and common launch site, 23 miles downstream of Green River S.P.). Permits are also available from canoe and raft livery services located in Moab and Green River

A press release regarding the new permit was issued late in February and between the two BLM offices, the FF&SL Moab office, and Green River State Park, a number of related calls have been fielded and roughly 30 permits issued.

Currently, administration of the permit is an economic

burden born primarily by the Desolation Canyon permit system and it is unlikely to ever become a self-supporting fee system. FF&SL has a fairly clear directive to maintain free access to sovereign lands and as there is no tractable method of distinguishing lands in the river corridor managed by BLM from those managed by FF&SL, the lowest common denominator of a no fee system will hold sway for at least the foreseeable future.

We are confident that an increased presence on the river and on the ramps coupled with information provided directly to the user through the permit system will encourage an improved land use ethic. The staff at Green River State Park has been receptive and is making the effort to contact and educate as many parties as they can. FF&SL have come forward with funding for a three-month seasonal position. The position is based out of Green River State Park and is supervised by the Assistant Manager of the Park.

From an enforcement perspective the State and the Federal agencies involved are at long last singing from the same sheet of music. Additionally, the permit is a sort of contract with the implicit understanding that if some aspect is broken that penalties may be imposed. Both BLM and State Parks Rangers now have a clear and consistent directive to work from and the boating public will be receiving the same message from any official contact regardless of uniform.

We look forward to reporting on a successful season come October.

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Reiter, Doug, and, Dale Blanhna. 2001 Recreational Use, Value and Experience of Boaters on Rivers Managed by the BLM in Utah. Utah State University. BLM Task Order #25, Agreement #D910A30310.

Appendices (not included)

- A. Cooperative Agreement
- B. Labyrinth Canyon Permit
- C. Permit Stipulations

About the Authors: David Dawson is a ranger for Utah State Parks based in Moab, Utah. He is specifically assigned duties as river ranger for the Southeast Region. Dennis Willis is an outdoor recreation planner for the Price Field Office of the BLM. He administers the river recreation program in Desolation, Gray and Labyrinth Canyons of the Green River. Pam Swanson is an outdoor recreation planner in the Salt Lake Field Office of the BLM. Prior to moving to Salt Lake, Pam was the recreation technician for the river programs in the Price Field Office.

Foot Care For Guides!

by Herm Hoops

Do your feet crack and dry during the river season? Most of us spend the summer wearing open footwear, like Chaco's or Tevas. Wearing open footgear in the wet and dry climate along Utah's rivers has some drawbacks. Although going barefoot in sand helps sluff off dead skin from the soles of your feet, the dry, hot sand sucks moisture from them.

Most common river footgear creates a zone of moisture between your foot and the surface of the sandal. The way we work on the rivers is conducive to formation of thick calluses. The constant change from being extremely wet, to becoming very dry causes calluses to crack, often in a very painful way. It is best to care for your feet on a regular basis. Here are some items to consider using if you develop foot problems:

- Antibacterial soap; make sure it contains "Triclosan" or some other bacterial agent.
- Pumice stones: fake ones available at mass-market stores work well
- Toe nail clipper: a straight edge is better for toenails, curved toenails have a tendency to become ingrown; curved fingernail clippers are fine for smaller toes.
- Foot lotion: containing an ingredient like *Dimethicone* which helps heal cracked calluses.
- Callous remover: a frightening looking tool with a curved razor blade on a handle, used to shave calluses.
- Socks to wear at night to help your feet absorb lotion. Cotton/lycra/spandex blends are best.
- Small nail brush

The process of foot care starts with washing. If you can, use warm water because it helps soften your skin. Scrub away dead skin, and while still lathered work at the dry or calloused areas with a pumice stone. Always work the stone in one direction, don't brush it back and forth like a scrub brush! After rinsing and drying you can lightly drag the callous remover over callouses. Don't cut into the callous; just lightly drag the cutter across the surface—like you were slicing off a delicate piece of cheese! Don't try to remove all of the calloused or dry skin at one sitting. Finish up by trimming nails while they are still moist.

Finally apply several generous portions of foot lotion. Repeat the lotion before bed and put on the socks. Your body heat and the lotion will create a small sauna of sorts for your feet.

CPRG Position Regarding Deerlodge Boat Ramp

by CPRG Vernal Director

The Colorado Plateau River Guides (CPRG), an organization of over 300 commercial river guides, supports National Park Service modification of the Deerlodge boat ramp on the Yampa River. The CPRG position is based on safety concerns, environmental protection and efficient launching of river craft. In support of modification to the Deerlodge site we strongly urge the consideration of the following:

1. CPRG support is contingent upon having a campground adjacent to the launch ramp. The availability of an adjacent campground for safety and efficiency reasons is critical to CPRG support of boat ramp improvement. The CPRG position on camping within sight distance of the launch ramp allows guides and private boaters to monitor their equipment while performing other duties. It also allows easy loading of camping and cooking equipment used at the launch site.

2. CPRG is concerned with over-development of the site. There is little conflict between river users and other campers, thus we do not feel that separation of these differing groups of users is necessary.

We do not support formalization of camping or campground design beyond the current situation at Deerlodge. The Deerlodge site is in use for river launches approximately three months a year. Campground use is light for the balance of the year and CPRG feels that the light "informal" camping at the site is appropriate, with an appropriate amount of infrastructure support from the NPS. We support the approach of a light hand upon the land, especially given the short season of use at the site. For example there is no need to add or develop electricity, running water, construct additional buildings, delineate sites, develop trails or pave roads. The importance of informal sites, and the related social values should not be overlooked by the managing agency. At the current site, groups intermingle and develop relationships that often prove helpful on the river in the following days. We urge the National Park Service to maintain a few sites, like Deerlodge, that retain that "less formal" style, with the associated values.

3. CPRG would support relocation of the boat ramp to the "old" boat ramp site at the end of the paved Deerlodge Road CONTINGENT UPON the availability of an adjacent campground and our other concerns.

4. CPRG prefers flexible development that is not costly to maintain, easy to replace, and helpful to river users. CPRG supports development of a ramp that has a less steep gradient, with a gravel surface. Our concerns are primarily the width of the ramp, adjacent temporary parking and access for packing river craft. Again we prefer not to see a huge, paved, overwhelming development—especially given the short nature of use at the Deerlodge site. Our suggestion is to go slow, with an initial development with the same size as the current launch site. If that site proves inadequate, future expansion would be relatively easy. The only additional infrastructure necessary at the site would be wooden posts to secure river craft.

5. The current restroom facilities are appropriate to the site, although the National Park Service should assure that they are maintained on a regular basis. This is a simple

process and should be able to be accomplished by the duty ranger stationed at Deerlodge. The bulletin board is appropriate to the site, but again could be maintained better. A few temporary extra parking spaces (about 5) for vehicles with trailers spaces could be added. There is a need for about 15 additional parking spaces at the Deerlodge Road parking area. Again this development should be simple. Consideration should be made of natural landscaping of the site to avoid the appearance of an area of pavement likened to a supermarket shopping center.

Colorado Plateau Climate Change

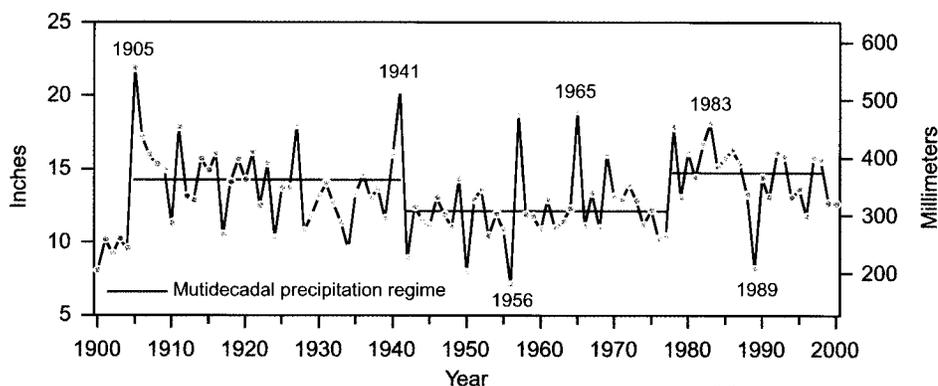
Excerpt from "Precipitation History of the Colorado Plateau Region, 1900 - 2000" by Richard Hereford, Robert H. Webb, and Scott Graham. <<http://climchange.cr.usgs.gov/info/sw/>>

Recent trends in Colorado Plateau precipitation and the Pacific Decadal Oscillation (PDO) suggest that the climate of the region may become drier for the next 2 to 3 decades in a pattern that could resemble the drought of 1942 - 1977 (see chart below). Although there are many uncertainties and assumptions, including using a single index (PDO) to predict multi-decadal climate variability, it is important to consider the potential affects of climate variation on the human and natural resources of the region. Water resources were heavily affected during the early part of the 1942-1977 drought. The population of the region has increased fourfold since the mid-1950s, substantially increasing the demand for water in the region without abundant supplies and creating a possibility of severe or catastrophic consequences if such a drought were repeated.

The work of USGS and other scientists is leading to a better understanding of the past and probable future climate of the Colorado Plateau. This work is only part of USGS efforts to provide information crucial to sound planning policies for land use and energy and other resource management. These efforts are also helping to protect lives and property from drought, landslides, and other hazards.

FOR MORE INFORMATION ON WEATHER AND CLIMATE CHANGE check out this new book:

Floods, Droughts and Climate Change by Michael Collier and Robert H. Webb. University of Arizona Press. 2002. ISBN 0-8165-2250-2



Notes from the Fall Meeting

CPRG conducted their fall general membership meeting at Park City on November 2, 2002. We had a productive meeting and have new information to share with the membership.

New officers:

Mark Sundeen, Vice President
Mike Lewis, Green River Director
Vacant, Moab Director

Finances:

Assets - \$3760
Liabilities - none

Interpretive river trips:

April 28 - May 1, 2003 in Cataract Canyon. Hosted by Sheri Griffith Expeditions/A&K, and organized by Mike Lewis. Presenters to be announced.

May 8 - 12, 2003 in Desolation Canyon. Hosted by Holiday Expeditions and organized by Annie Payne. Instructors are Rich Valdez (aquatic ecologist), Jack Schmidt (fluvial geomorphologist), Roy Webb (river historian) and John Weisheit (natural history).

October 11 - 13, 2003 in San Juan Canyon from Bluff to Mexican Hat. Hosted by Wild Rivers Expeditions and organized by Daniel Murphy. Presenters to be announced.

River Education Seminar:

May 16 - 18, 2003 on the Colorado River. A combination of the Moab and Uintah Basin Seminars, hosted by Redrock Adventures near Grand Junction, and organized by Daniel Murphy. Curriculum will be geology, anthropology, botany, biological soils, wildlife and Leave No Trace.

An Issue:

A debate, at the level of the CPRG executive committee (ExCom), was brought to the attention of the general members at this meeting. A member of the ExCom desired that CPRG write a comment letter to the planners of the Colorado River Management Plan at Grand Canyon National Park. It was proposed that this letter show support for river wilderness that included the use of outboard motors. Another CPRG ExCom member opposed the position because it would compromise the intent of the Wilderness Act. In discussing the matter together as a body, it was decided to table the matter. It was also decided that the it would be beneficial, in the meantime, to educate the membership on the issue through the pages of *The Confluence*. CPRG did not send a comment letter to Grand Canyon National Park.

Two Opinions about Outboard Motors

River Management Plan Grand Canyon

To Motor or Not to Motor (that is the question)

The outboard motor controversy in the Grand Canyon river corridor has been successfully distilled down to a choice between maximizing protection for an ecosystem and maximizing outfitter profits and consumer access.

As far as human interests go, we have plenty of access for recreation, and many opportunities to acquire and spend the money that is available to us. But as far as the Colorado River in Grand Canyon goes, we have only the one and I think it is more important to place the ecosystem above the issues of human economics and access.

In the outfitter industry, we all have described our affinity for the Grand Canyon in our professional client relationships, confirming that this place is one of the most sublime and deserves our efforts to give it the best protection available by law. That degree of protection comes in the form of the Wilderness Act and tiered into the National Park's Organic Act. Some of us in the industry are unwilling to ask Congress for that kind of protection because the use of outboard motors in the Canyon would come to an end. Myself and others are happy to advocate for this protection because we want society to be responsive to the needs of the Grand Canyon.

Despite the grandeur of the Grand Canyon, the Colorado River entrenched within has been reduced to a pathetic and sickly green thing that is devoid of any warmth, driftwood or sediment. I find absolutely nothing to be proud of here and everything to be ashamed of. In any case, standing still and thinking that protection and restoration for the Grand Canyon is for another time will achieve nothing more than continued extirpation and the possible loss of what natural and cultural heritage yet remains.

I think it is important to consider that there are a lot of people who will never see the Grand Canyon but want to be a part of the growing national movement to protect the Grand Canyon. This movement includes restoring the Grand Canyon ecosystem by decommissioning Glen Canyon Dam. In so doing we also provide incipient protection for our canyon ecosystems upstream.

In the meantime, the river community needs to be as credible as possible in the eyes of the spectator public. We need to prove to the world that even if they will never see the Grand Canyon, at least it will be there for those who will.

John Weisheit

In October the Waterkeeper Alliance designated John as the Colorado Riverkeeper. For more information please visit the following web page.

<www.livingrivers.net/media/article.cfm?NewsID=382>

For this writer it is exactly that, a choice. There has been a lot written and spoken about the use of motors within and outside of the guiding community. Throw in the concept of wilderness with its inherent language excluding mechanized intrusions, and the question starts to encompass livelihood, access, quality of experience, noise and water pollution, safety, and the list goes on. As does the spectrum of opinion on the use of motors. Here is one more opinion.

Usually we as individuals choose whether or not to utilize motors. I choose mechanized travel to haul myself and my boating gear to the river and back. However, in the case of where motors are not allowed (hard to think of those), we've decided as a group to prohibit their use. Generally this is in the pursuit of that elusive quality called "wilderness." One of the more contentious places being considered for wilderness is the Grand Canyon. Contentious because there is a relatively (in the post-industrial sense) long history of motor use in the Grand Canyon, with accompanying reasons of why it should remain.

So why use motors? For convenience, speed, power, access (assuming one's not able to self-ambulate). Why not use motors? Now that's a bit more ethereal. I contend that one of the best reasons is because we don't "have to" when running rivers. There are other options. Options that do not impact one's fellow wilderness traveler, or the environment, with your choice of locomotion. We as a society choose, often passively by not choosing, mechanization to make our lives easier, more comfortable, more expedient, more efficient. The outcome is not always what the intent was. However, on the whole this is the modern world we live in. As such, what has come to be viewed as a more precious commodity due to its increasing rarity, are wild places. Places that embody elements of the non-mechanized world. Places that are quiet, areas uninhabited and uncultivated (by man), places that are relative untouched by our hand, and our machines.

So what about areas that aren't quite wilderness, that have already been and continue to be impacted by man? Do we choose to continue these impacts, such as the use of motors, or not? Choosing to not use them may not alleviate the impacts already sustained. But nature has a way of reclaiming its own given time. Could places like the Grand Canyon become more of a true wilderness, with those qualities we so earnestly seek in escaping our mechanized lives? I believe it can, and it all lies in a choice. To motor or not to motor. I choose not.

Tim Thomas

Least we forget, Tim was the first CPRG VP.

Utah Guides and Outfitters Upper Plateau River Ethics

Your behavior in the outdoors should always be influenced by the realization that everyone has the same right as you to the most enjoyable outdoor experience possible. Everyone, whether on a private adventure or an outfitted one, should strive to tread lightly on the natural experience of others by providing the best possible example of proper backcountry etiquette. In addition to a backcountry etiquette, as beneficiaries of the natural resource, we should strive to practice Aldo Leopold's 'Land Ethic': "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

Respect other user's space, privacy, and solitude when encountering groups on the river, in camp, on hikes and at attraction sites.

- Groups should run together as one group. The more vessels in your group, the more critical this becomes. The tighter our group, the less impact it has on other people. Some areas require your group to stay together.
- We should all avoid pulling out into the middle of another passing party (another reason to not have your group spread out while floating down the river).
- We should all yield on the river where appropriate. Long contacts with other groups should be avoided while floating. If other groups are going faster, allow their boats to pass when they begin to crowd or push. If you are going faster than the group in front of you, be sure your boats are grouped together before passing.
- We should group our boats and equipment, leaving room for others at put-ins, take-outs, and attraction sites. Expect another group to arrive. If possible, avoid lunches at attraction sites or at least move off to the side of the trailhead or docking area. The more crowded the area is at the time, the more important this is.
- Motor-boaters should throttle down to reduce noise when passing groups that are on shore or in mid-stream. Planing boats can maintain a plane at half or two thirds throttle. Non-motorized boaters need to allow motor-boaters the deeper water and folks floating in life preservers should stay next to their mother boat for safety reasons.
- Abstain from water fights with other groups.
- Radios and tapes should be turned off within ear shot of another group. You might consider headsets.
- Noise and loud partying is inconsiderate when within ear shot of another group.
- Lewd conduct and obscene language can be objectionable to others.
- Explosives and fireworks ruin the natural quiet and solitude of the backcountry and are illegal in the national park sections of river.

- Firearms are not needed or appreciated outside the hunting season on the Colorado River system. They are illegal in our national parks and monuments.

Think of the environment and courtesy to other groups while camping.

- Unless you are in an area where camps are assigned, campsites are available on a first-come, first-served basis.
- When encountering other groups on the same schedule - communicate.
- If your group is small, consider smaller, more pristine camps, leaving larger, more impacted camps for large groups when the canyon is 'busy'.
- When choosing camps and lunch spots, consider those nearest the river. Human activity produces less long term impact below the high water line. In high water, try to choose pre-impacted sites or sites on durable surfaces. Avoid pioneering new campsites if possible.
- Layover camps should not be made at the most popular camps on the trip.
- When choosing a sleeping area, or place for a tent or toilet, try to choose pre-impacted sites or sites on durable surfaces (un-vegetated silt or sand, gravels, rock, etc.) Avoid making new trails in the vegetation as well as digging holes or trenches in soils. Any new disturbances in soils is an invitation for non-native plants to move in. Be aware that you and I can be carrying in the non-native seed from home or last night's camp by way of our tent, sleeping bag or clothes. Everything should be checked and/or cleaned before the next trip!
- Rocks should be left in their natural place. If we need to use a rock to hold our tent down, pick one that is not partially in the ground providing habitat for small wildlife.
- Let's build our fires away from vegetation, boulders and cliffs. Smoke and heat destroys the natural colors of the rocks. When practical build fires near the river.
- Fire blankets and elevated fire pans work well for not scorching sand or soils.
- Wood for fires should be driftwood or firewood brought in and should be small or well split in order to keep fires small, clean and hot. This makes for easy cleanup, conserves firewood, and creates less smoke and odors to impact the group camped downwind. Consider starting fires the 'old fashioned way' or by using your butane stove or blaster since liquid fire starter is toxic to lungs and air as well as is an obnoxious impact to others downwind.

Pack it in - Pack it out

- Separate and save recyclables.
- Haul all garbage out. Consider our impacts on the local "food economy". Carry out all food scraps to avoid bears, skunks, racoons, ringtails, flies, ants, mice, and other animals from congregating. Plan meals to avoid messy, smelly garbage and unnecessary leftovers.

- Leave no charcoal
- Watch out for micro-trash such as cigarette butts, twist ties, strings off fabrics, dental floss, gum and candy wrappers, etc. A tarp under garbage containers and/or tables can be helpful.
- Solids from dishwater, soups, coffee, etc. should be strained and hauled out.
- Liquid waste such as left over beer, pop, juices, coffee, etc. should be diluted in the river or into your grey-water container. Deposit gray-water into the river or broadcast across the land.
- Grease from cooking must be hauled out.

Naturalize your campsite before leaving.

- Help erase the evidence of less sensitive users.
- As already stated, avoid digging holes or trenches in soils. Holes dug in beach sands should be filled.
- If loose rocks have been carried onto sandy beaches, consider carrying them back to their natural place before leaving. If you break a rock, remember that it is a hazard on a sandy beach or in shallow water.
- When breaking camp, scatter firewood. Toss unnatural wood (milled, sawed, etc.) that has been brought into camp, into the river or haul it to your next camp. A tarp under your woodpile makes for easy cleanup of splinters, chips, and small pieces of wood.
- Don't leave unsightly anchor or deadman posts.
- Do a thorough sweep of the lunch or camp site before leaving.

Be sensitive to the resource's needs when exercising your needs.

- Try some soap-less baths or showers. If you do need soap, use biodegradable soap and be 200' from side streams. Try to find slow to moderate current while bathing in the river.
- Carry and use toilet systems during the day as well as at camp. Use public toilets if available.
- The NPS and BLM recommend urinating in the river current. Another place is on the land away from obvious kitchen, toilet, tent, lunch or attraction sites. When using the land, look away from camp for porous washes, gullies or dry river sand (if covered). Sandy organic soil is ok but, avoid cryptobiotic soil. Urinating on compacted soil, and in uncovered concentrated places can cause odors. Urinating in wet or damp sand or silt, or in shallow and stagnant water after the river has peaked and receded causes algae to flourish. If you containerize your group's urine at the toilet (when separating functions), you might consider carrying some of it out.

Tread lightly on the land by using low-impact hiking.

- Prevent multiple trailing by staying on the main trail. Avoid shortcutting switchbacks. Try to travel on durable surfaces.

- Be careful not to step in cryptobiotic soils. Sometimes it is hard to see young crypto beginning the slow restoration process. Avoid walking through dried out potholes.
- In areas without trails, walk in washes or on sterile silt, sand, gravel, rocks or slickrock.
- Consider using soft shoes as opposed to hiking boots with cleats.
- Consider not hiking when trails are muddy.

Respect plants, animals and nature

- Don't feed, harass or kill wildlife. Observe wildlife from a distance. Avoid following or approaching them. Use binoculars if you would like a closer look.
- To lessen our impact, from ants to bears, secure your food and garbage; clean up spills; and eliminate odors.
- Refrain from picking wild flowers. It is illegal in NPS areas.
- Be sensitive to trampling native plants and grasses especially during their high growth period and during hot, dry periods.
- Let's leave natural objects where they are found like fossils, petrified wood, bones, antlers, etc. Let's treat all backcountry like our national park where removal of natural objects are illegal.
- Don't allow pets or kids to chase or harass wildlife.
- Pets should be restrained around other groups and wildlife. Their feces can be disposed of with yours. (Pets are illegal in NPS units, on the San Juan River and during the high use season in Desolation Canyon)
- If you are one of the first groups in the area in the spring be extra conscious of the trails you take; the campsites you use; and the groover and kitchen sites chosen, as you are pioneering the impact areas for that season.

Help preserve the past for the future at archeological sites.

- Treat archeological sites with respect. They are sacred places to Native Americans.
- Avoid touching petroglyphs and pictographs. It abrades the inscriptions and the oil from your fingers helps destroy them and prevents any possible future dating of them.
- Be Careful not to touch, sit on, or walk near the walls of pre-historic structures or enter unstabilized structures. River House Ruin has been stabilized for careful viewing.
- Leave potsherds, arrowheads, and other artifacts in place. Removal is against the law on all public lands.
- Be careful when entering stabilized historic sites. Leave tools and artifacts in place.
- Report any destructions or violations you observe to the managing agency and/or ask the person (s) to stop.

Remember

The river belongs to everyone ... and to no one.

The Sportyak II Expedition

Grand Canyon, August 5 - 31, 1963

The Journal of Otis "Dock" Marston

Transcribed by Rosalyn Jirge
Edited by John Weisheit

Note: This article will be beneficial to researchers who monitor Grand Canyon National Park. Brackets indicate editor's comment. The Colorado River measurement in cubic feet per second (cfs) originates from the gage above Bright Angel Creek near Phantom Ranch.

Sunday, August 4 [1,590 cfs]

Bill Belknap & I left Boulder City early & checked in at Grand Canyon [National Park] with [rangers Charles] Shevlin & Lynn Caffair. Bill [received an] order from Park Service for pix [a goal of this expedition was to provide photo documentation of the low water conditions resulting from the initial filling of Lake Powell reservoir]. We got report of heavy flood down Pipe Creek that had drowned Merrill Clubb's [or Chubb] son and grandson.

Away about 2 PM & stopt [stopped] to look over at Lipan [Point]. Hance was muddy but further down Canyon was not.

Arrived at CDL [Cliff Dwellers Lodge] about 5 PM & ran down to LF [Lee's Ferry] to look for crew, most of whom were at CDL.

Mack was with boats & reported them in good shape.

At CDL met Lynn Roberts who rented to me the chopper [helicopter] for the Anasazi trip. Forcier was with him - had been blocked out of return to camp at Mile 40 by heavy flood in Houserock [sic].

Many fishermen at Paria Riffle - half clear & half mud.

The boys slept with boats.

Met Chuck Richey at CDL.

Good dinner.

Monday - August 5 [1,530 cfs]

Early to River & cleared at 10:15 with 7 boats. Bill & Buzz Belknap - Clif, Tick, [and] Robin Segerblom, Mack [Miller].

Ran onto sand flats about Mile 1 and broke 3 oarlocks & 1 block which was more than our spares. We rigged a nylon cord lock for Bill which did the job. Coasted down to [Navajo] Bridge & asked Wriun Wreno [unclear what this means; see last sentence of the entry for August 7] to get equipment at Page [Arizona] & meet us at Jackass Canyon.

We moved down to Badger [Canyon] which was a mess of rx [rocks]. Bill & I walked out & then a mile to cars just as a storm hit.

We took equipment & waited for some of Wriun to return from a branch canyon.

Bill & I started down & were [stopped] by a flood in Jackass running about 30 cfs. We turned back & walked to [Navajo] Spring where the [Navajo] Police drove us to CDL. We took hamburgers with us & drove to rim over Badger [Rapid] & reported set-up to Mack. The boys had



Otis Marston and his Sportyak II. Photo by Bill Belknap.

walked up Jackass in dark to look for us.

We returned to CDL to sleep.

Sighted a small beaver at Mile 6.

Tuesday, August 6 [1,580 cfs]

Drove out to Jackass and walked down. Just enuf [enough] water running to wet center of course. We lined the drop & were 1 hr. getting down.

Wrimmers [family and friends on the rim communicating via two-way radio] watched from above.

Buzz & Tick had each a capsized in run of lower end of Badger - A dent in Tick's boat stayed in.

Away at about 8:30 and stopt to photo 10 mile rock [published in the Belknap River Guide] which was at left bank & moved to head of Soap [Creek Rapid]. Two good riffles between Badger & Soap.

Soap was a nest of rx & we portaged.

In middle of operation four lads from Albuquerque arrived enroute back to Jackass. They had reached Mile 18 with 1 mans & air mattresses.

Wrim crew left about 1 and we were hit by a thunder storm about 2 PM [referring to family and friends who are monitoring the trip via two-way radio from the rim country]. We moved down & found no water action worth a mention at Browns Riffle. At Mile 12 the rock was on right shore & the rapid demanded a portage.

We camped under overhangs at head of Shearwall [Sheer Wall Rapid] as rain hit hard.

Just as we finished supper Ryan dropt in with the chopper.

Warm night & no more rain.

Soap Creek was running less than 1 ft of red mud.

Wednesday, August 7 [1,890 cfs]

Up at 5:30 but we did not clear until 7:40 - ran Shearwall hitting a few rx lightly. Clif & Robin lined. At the side canyon from left about a 1/2 mile below foot of Shearwall, there was a good riffle. At the nnext from left, there was virtually none. Houserock [House Rock Rapid] was nothing but rx but there was a sporting course. We portaged. A discharge of a second foot of red water was in the creek.

Several good riffles between Houserock & North Canyon gave good runs & some looksee.

North Canyon was flowing less than a foot of red mud.

Virtually no course was open but a possible kayak run could be made. We lined.

21 Mile was impossible, the closest course we had seen. We lined.

22 Mile was lined.

23 Mile was the worst next to 21 Mile & we lined. It could be run. There was a riffle below which we ran.

24 Mile was a short lining & the same at 24.

We pulled in for camp at Hansbrough - Richards Ledge. There was a beach 40 [feet] wide. Current in the River here. Lynn Roberts dropt in just before dinner & had two passengers with him - one who was a friend of the Segerblom's. The Wriun party had been at this camp & left before dinner.

Thursday, August 8 [2,660 cfs]

[Note: Post-expedition corrections were made by Marston for the entry of August 8.

- *It is probable the 26 Mile Rapid was 27 Mile Rapid at Mile 26.7.*

- *The rapid described at 27 Mile Rapid was actually 29 Mile Rapid at Mile 29.1.*

- *There has been some confusion in the location of points in the section from North Canyon Rapid at Mile 20.5 down to Vasey's Paradise. Tanner Wash which is 24.5 Mile Rapid has become defined in recent years and some clarification has developed in establishing Cave Spring and the trail to the River at Mile 30.4.*

- *Plate XXVI in Water Supply Paper (WSP) 556 establishes Mile 29 Dam Site while Plate 81B in Stone CANYON COUNTRY was taken from a point upstream from it. The Kolb photo in National Geographic Magazine of August 1914 on p.166 is close to the WSP photo. Plate 4 of WSP 556 shows the area of Mile 30.4]*

Since a day of hard work yesterday had moved us only 11 miles & we were scheduled to be at Nancoweap [Nankoweap Canyon], a change of plans was discussed this morning. The consensus seems to point to going out at Whitmore but no decision was reached other than the need of more food.

We were away at 8:30 and ran the upper riffle of 25 Mile, then lined the lower part. We moved to Cave Springs. The spring was running about a half second foot of cool water but would be covered at 50,000.

The cave contained a number of the traps & tools found in 1923 which had been left there in 1888 . Auger - ax - coffee grinder - traps - plate - sauce pan.

The rapid was lined & would rate a 10 - possible to run but probable capsized.

26 Mile Rapid was lined but it was not as difficult.

27 Mile Rapid was lined and was as difficult as we had seen with a sharp drop of 8 [feet] in about 150 [feet]. A small stream was running in the canyon & a large plunge pool was at the head of the bar. Lunch in the shade near the pool with 2 miles gained for the morning.

There was a riffle near Mile 28 and a rapid at 29 Mile Canyon. The stream was flowing less than a foot but there had been a sizable flood.

The mouth of 30 Mile presented a rapid of about a 2

rating.

At right bank the spring was running into the River and three large springs gushed out near River level on left bank. We ran this rapid altho [although] there was lining by some near the head.

Springs in the next mile added about 10 feet to the River when added to those near 30 Mile.

One small rapid at about Mile 31 was run & we took a looksee before running Vasey's [Paradise]. No water was running from the main opening of the spring & probably would not have been flowing when [James] White claims to have been there.

We ran the rapids down to Mile 37 where we camped on LB [left bank]. There was a small rapid here & a stream with small flow - probably the trailing of a flood.

At the end of dinner Lynn dropt in with the chopper and Fran [Belknap] & Gene hopped out. Visits all around.

We arranged for food at Nancoweap for the morning of the 10th.

Friday, August 9 [2,220 cfs]

Up at 5:30 - Beautiful night just cool enough for sleep bag.

Yesterday Tick's boat foundered while lining & some gear was washed out including plastic jug which broke apart.

Bill was careless in closing an Aquasafe & got some water in it.

Some lined & some ran 37 Mile Rapid which was not too difficult but required close running.

At Mile 39 we met the survey party who were working on the LB so we stopt for a coffee break. Lynn dropped in with the chopper at the beach below.

At the rapid at Mile 39, I hung on a rk briefly but the others ran clear to make a good show for the survey crew. Buzz rode down to the dam site drilling where the chopper lands on a dock near the edge of the River.

We went in the tunnel & took many pix.

One tunnel runs back about 300 [feet] and then at approx. right angles both ways for several hundred feet. The problem is a possible power house location in the rock wall.

On each side of canyon are scaffolds up about 50 - 60 feet to entrances of short tunnels. There is also a tunnel near the River level. The bottom of the River has been drilled. The camp is on the River on RB [right bank] & all equipment was dropt in by chopper.

Lynn flew Buzz & me to look at a formation near Mile 45 - 46 RB but it does not seem to be a granery [sic].

We left about 11:30, stopt at the [Bert] Loper boat & I checked for water in the canyon just below. A small spring was running. We moved to the first of The Royal Arches for lunch.

A few riffles down to [President] Harding [Rapid] were featured by the chopper over our heads & two men taking pix.

Harding's left course was closed & the right side provided one short pitch.

Just below were two springs at RB flowing about a second foot total but the water was too salt [y] to drink.

A few riffles & some current pushed us along & we landed at the mouth of Little Nancoweap at about 6:15.

There was a float, a table & an alum. boat at LB about a 1/2 mile up River.

Saturday, August 10 [2,670 cfs]

A cool, quiet night. An early wind died down at dark.

We now estimate 4 days more for arrival at BA [Bright Angel Creek].

Clif talks some of his going out there & Robin with him.

Repairs to oar locks which are loose in the blocks.

Lynn Roberts put the supplies on the beach at 9:30 as his program had been changed. He hurried off.

Clif had the opportunity to make two sketches.

We were away about 10:30 and ran Nankoweap. The picture we thot [thought] was up to Nankoweap didn't fit [Belknap was interested in matching historic photos]. There were two riffles below to complete the rapid. All the signs at the back of the beach were gone.

The stream was flowing 1 - 2 cfs of clear water.

Riffles down to Kwagunt [Rapid] where we lunched & lined down the left. After a looksee we ran the lower rapid. At 58 Mile Canyon was a good mild rapid with a few runs. We spotted the missing pix in this area between Malgosa Canyon & 58 Mile.

60 Mile Canyon gave a rapid for lining down left & 2 riffles.

In one of these riffles between Kwagunt & Little Colo. [Colorado] I hung on a rk barrier at the foot. The Little Colo. was noisy and I found a 300 cfs mud flow out of it & up the Colorado's left bank to join it. A small flow went below the main island & a larger flow between the 2 islands. The flood was dropping & had been at least 3 ft. higher at the mouth of the canyon. I took a water sample.

We camped & by dark the flow was down to about 200 cfs.

Storm up River & shifting to the Cameron area made us check camp. A few sprinkles following a wind was all we got.

Sunday, August 11 [2,070 cfs]

Warm night & no further rain.

The Little Colo. had sustained the same flow of about 200 cfs insuring our running on mud as far as BA Ck [Creek]. It might be as much as 400 - 500.

I got word I was needed in [Salt Lake City] Sept. 13th which gives time to finish this cruise but the head of [Lake] Mead presents problems [reservoir sediment].

After much photography we dropt down stream at 10 and had some nice riffles to run. We stopt at the Hopi Salt [Mine]. One nail in the ladder was wire but the others were all square. The cliff barred passage further upstream. Downstream was a half mile of salt on the cliff but no cave was particularly marked. There were overhangs & two small caves which might qualify.

We stopt at the usual tree at Mile 65. There was water about 150 yards up the creek. No gas was left in the tunnel but the cans were left under the tree [gasoline stash from a previous motorized trip].

Radio communication with Desert View [Watchtower] was immediate & clear.

Clif & Robin have decided to leave at BA & the remainder will run to the end.

We were told some unknown woman authority had stated the River could not be run at this stage.

Chuar Rapid would not rate a 1 nor a 1 bucket rapid for the Sport-Yak, but a short drop at 65 [Mile] required lining altho it could be run. My boat was near to foundering in the process.

We ran everything down to 67 [Mile] where there was a boulder dam across the whole river except for a narrow chute right of center. We nosed this on the right & ran the remainder down to camp at the mouth of Cardenas Ck. where we arrived at 4:30. We talked with the Wrim Crew who were at Lipan [Point].

Just at dark a short storm took over but precipitation was not heavy. After that a fine night but there were mosquitos - the first I had seen in the Canyon.

We plan arrival at 4 PM of Tuesday.

Monday, August 12 [2,210 cfs]

Beautiful clear morning. Tick picked up two moderate sized toads.

Beaver were busy in the area.

Buzz reported a dead bass.

Mack moved down to the broad white wash a 1/2 mile below on RB & reported a wall of a ruin 5 [feet] high & running back in wash 40 [feet].

Bill & I climbed above Unkar to reproduce 2 pix. Unkar is now 4 rapids which accounts for Stanton's list. We stopt at the fort [Hilltop Ruin].

Clif made sketches from across the River.

We moved down about 11:30 & ran a riffle at Mile 71 near LB. Lunch stop at head of Unkar [Rapid].

We lined first 2 drops in Unkar. Both could be run but involved some hazard. The third drop was a boulder dam which seemed a lining job but Mack spotted a course which he & Buzz ran without serious difficulty.

The fourth drop gave fine running down center with no rk hazards.

At a small side canyon LB was a riffle which we ran after looksee.

Just below was 75 Mile which was a long run with much rk dodging.

A good chute below this ended the day's runs & we pulled in above Hance.

While we matched pix, the other lined the left side of Hance. Hance was a mass of boulders about as [Robert Brewster] Stanton pictured it and in line with the comments of [George] Bradley & [John] Sumner [regarding] White's travel on the River.

Radio connection came in from Shoshoni [Point] & the Wrim Crew shifted to Lipan.

Mack checked the RB half way down & found clear water with slight alkalinity so we all crossed for a fine camp.

Weather is hot.

Tuesday, August 13 [1,960 cfs]

Warm & clear. The Lower Hance Rapid will require lining 1/2 way & we will run a short 1/4 mile below that. Radio tied in again this morning.

The upper end of Lower Hance was a little too tough & we lined it before running out the lower half.

A half mile below we sighted the transom & motor of the boat wrecked in Hance last year. It was jammed in the rx in a small alcove just upstream from where the boat was pulled up on a talus. This shows obvious inadequate structure of hull.

We ran a couple of riffles and had a looksee of Sock [Sockdolager Rapid] from the right. It proved a fine rk dodging run with no accidents.

A separate lower end rapid made up for this record as its drive against the left wall capsized Robin & Bill. Robin lost her glasses.

A few good riffles and a looksee at Grape [Grapevine Rapid] from the right showed us a lining job. We lined the first 5th; ran about 1/3; lined another fifth; swam a short distance with the boats; a short portage & run out at the end. This was the toughest lining job to date.

A short distance below Robin dropt into a hole & capsized again which shook her a bit.

83 Mile Rapid required a short lining.

Clear Creek was running clear but there was no lagoon.

We reached Zoroaster [Rapid] at 5:30 & it looked somewhat rough so we decided to camp on RB at mouth of stream. Up 100 yards was a pool 10 [feet] across & the water was mildly alkaline.

Wednesday, August 14 [1,740 cfs]

Last night on radio Fran [wife of Bill Belknap] expressed shock we had not rushed into Phantom [Ranch] for our dinner date.

The night was very warm. The younguns are the cold ones of the party as they sleep under covers.

We lined the rapid below camp at Mile 85 and in running out the lower end, I didn't keep an eye out - hit a rock & rolled. Lost my cap & nothing else. Broke an oar.

We ran in to BA arriving a little after 10.

Radio communication with the Wrimmer was immediate. We unloaded & the Park man Jack Field came down & invited us to use his cabin.

Tick decided to pull out.

Brot [brought] load down from Phantom. Had lunch at Park house.

Worked out new schedule.

16 - Fri - Boucher - 96 Mile -	9 miles
17 - Sat - Shinumo -108 -	12
18 - Sun - Elves - 116 -	8
19 - Mon - Spectre - 125 -	9
20 - Tue - Tapeats - 134.5 -	9.5
21 - Wed - Kanab - 143.5 -	9
22 - Thu - 153.5 -	10
23 - Fri - 164 Mile - 164 -	10.5
24 - Sat - 174 - 174 -	10
25 - Sun - - 184 -	10

26 - Mon - - 194 -	10
27 - Tue - Spring - 204 -	10
28 - Wed - - 214 -	10
29 - Thu - Diamond-225.5 -	11.5
30 - Fri - 234 Mile R-234 -	8.5
31 - Sat - Gneiss - 237 -	3

which makes no allowances for delays.

Bill used diplomacy to establish good relations with Dottie Patrick & we had dinner there at Phantom. The place was full of dudes [tourists].

There were extensive plans under development for contacts down River.

Warm night. A little rain before dinner.

Thursday, August 15 [1,580 cfs]

Slept on the beach - fine cool sleeping. Breakfast at Phantom.

Oarlocks were worked over & gear sorted. L. Miller [wife of Mack Miller] flew over in sightseeing plane and Mack was able to talk to her.

We have lined up one of the Bonanza pilots to fly the lower end of the Canyon.

George Barnett, the gager [US Geological Survey gage], reported the flow at 1700 cfs [not consistent with the published report].

Dinner at Phantom. The dudes were coming in again.

The Segerblom trio were packed and ready for a hike out.

Friday August 16 [1,490 cfs]

Segerblom trio cleared at 5.

We had trouble getting up. Breakfast at Phantom. The blocks for oar locks arrived and the holes ran the wrong way. At the beach, the packing of much food delayed the start until 9:40.

The first lining was the lower Pipe Creek Rapid. There were two more before Horn [Creek Rapid] which was a heavy drop thru great boulders. Lining down the LB was difficult. Many pictures.

There were two riffles between Horn & Mon. Ck. [Monument Creek] which we ran with one giving a rock bumping.

Mon. Ck. was heavy lining. A small stream of clear water was running. We talked with Wrim. Clif reported a 5 hour walk out & one boat got a small puncture from a rk by the trail.

We moved down to Hermit [Rapid] & camped above at 6 PM. - one mile short.

During the night, rain came down hard for an hour and continued some rain until 6 AM.

Saturday, August 17 [1,470 cfs]

Overcast, warm & some sprinkles.

The River is up. Hermit Crk. is double in volume but clear.

Buzz got wet but others slept dry.

We were away at a slow start at 9:20 & lined Hermit & Boucher [Rapid]. There was about 2 cfs. running in Hermit & 1/2 cfs. in Boucher. Some burro sign at Hermit & much

at Boucher. There were Bighorn [sheep] tracks at both places.

Crystal [Rapid] was flowing about 3 cfs. of slightly red water. Buzz located 3 - 4 rooms on top the gravel bench below the creek. Size was about 10 [feet]. One was round & walls run to about 2.5 [feet] high. We lined half way down the right.

We also lined Tuna [Rapid]. This is the point where we camped with the crippled Esmeralda [*Esmeralda II*, a motor boat from a previous expedition in 1949 with Marston as a crew member]. We lined half of right side of a rough rapid just below Esmeralda Elbow & immediately above the pyramid rock near Mile 100.

We camped at 6:15 at RB at what appears to be Sapphire [Rapid]. The side canyon LB has a small beach & a drop a short distance back. The rapid is full of boulders. The Canyon makes a swing to the R. A rk which appears in one of Stanton's' pix is near RB.

Sunday, August 18 [1,430 cfs]

Fine night. All prepared for rain & there was none. Fog hangs on top of the plateau down River.

We started on the River at 8:30 and lined Sapphire and Turquoise [Rapid]. A very sharp drop which may have been Ruby [Rapid] was lined on the right but it is probably up River.

We stopt for lunch at the cross canyons suggesting it was Ruby. There was a small run of water. We ran this rapid thru a tricky course.

Bass Rapid was run on the left.

Shinumo [Rapid] was run down center and tending left. We lined a short distance along LB at about 108.5 & then ran riffles to camp just below the [Bass] cable. There is a moderate rapid just below.

Weather has been somewhat threatening but is clearing at 7 PM.

Shinumo is running about 20 cfs.

We have seen ducks along the River.

There was burro sign at Serpentine [Rapid] which we ran.

Monday, August 19 [1,760 cfs]

Fine night & all slept well except for my worries over Hakatai [Rapid].

All side canyons have shown signs of recent flood & some small flow was running in Hakatai Creek. We checked Hakatai Rapid & were it not for Bucket-head's [Leslie Jones, a river map maker and boater] warning, it would get no mention in the log. For safety, we lined a short distance on the boulder bar on RB.

"Of course we are all deeply concerned about Hakatai as I am sure you are also" were the words of Shevlin to Bill. This concern is now over. There was no cause for concern.

We lined the RB of Waltenberg [Rapid] & ran a series of riffles below. Mac[k] capsized in one of them but losses were limited to some wetting of food.

We pushed along on slack water & landed at Elves [Chasm] at 11:55 for a lunch stop. A good flow in the creek with mild cloudiness showing little sign of flood. There was

a pool 3.5 feet deep at the foot of the rocky slope. A small rapid was run. We ran everything down to Forster [Rapid] which meant many riffles, one or two would rate a 1.

Forster was rough. We lined my Yak from the shelves of the RB & the other three boats were dragged up & along the platform.

A storm hit but gave us litte rain but it did give a help by supplying a down River wind.

We landed at the head of the major drop of Fossil [Rapid] at 5:55 after running two riffles above. We camped RB just below the outlet of the canyon & used the ledges of Tapeats [Creek] for shelter.

Checking showed I had erred & we were now on schedule with a run of 14 miles for the day. My error was in placing Spectre [Specter Rapid] at Mile 125.

It had been overcast and comfortably cool. We slept under ledges but the sky cleared at midnight.

The rains have washed the slime from the rx.

A burro has just left this bar.

Tuesday, August 20 [1,680 cfs]

Warm, clear morning. Warm. Buzz spotted a small scorpion in the ledges.

Buzz set the letters LL on the beach as ALL WELL signal & had just started a fire on the bar when the Hudgin plane flew quietly over at 7:45. About 10 minutes later he came down Canyon & about 5 minutes more & up Canyon again. This time he indicated he had seen us. He later circled at a higher altitude.

We cleared at 8:30 & nosed the upper end of the bar. The rapid could be run with some risk. We lined part way of 127 Mile Canyon Rapid & same at 128 Mile Canyon.

Spectre was a fast, rough drop & we lined & pulled in RB at 130 Mile Canyon for lunch in the shade.

All these canyons showed recent flood signs but 130 Mile was not large. All had small flow of water. We cleared from lunch at 1:15. Buzz sighted a Desert Bighorn buck & 2 ewes on the LB.

Bedrock's bed rock offered a boulder bar approach except for 10 - 15 feet & Bill & Buzz went out to it. The rapid was mild & we ran it going to the left. The channel was 25 - 30 wide & quiet.

About 1/4 mile below was a rough, boulder rapid which could not be run & we lined the whole way.

Dubie [Deubendorff Rapid] was open only in the left channel but a small flow was going thru the boulder island. We lined half way to two thirds & ran out the end.

Stone Creek showed signs of a recent major flood with greenery & trunks of small trees scattered down the beach.

133 Mile was run without a looksee. The creek at Tapeats was cloudy & flowed into the River at the rock point. There must have been a recent flood & large tree trunks are on the boulders near the River. Half the old camping beach was cut away.

We pulled the boats up the creek & out onto its left bank for camp.

The night was warm & storm clouds disappeared so sleeping was good.

Wednesday, August 21 [1,580 cfs]

Up at the usual 5:30.

All thru this section the building of dams by the side canyons is starting. The beaches which the River put at higher levels are being cut away & some are completely gone.

Buzz measured depth of River near Mile 119 & found in excess of 90 [feet].

Bill climbed to the shovel which wasn't there & photographed the beach. Photography kept us at camp until 10:20. The rapid was a mass of boulders & required lining. We also lined of the three drops in 135 Mile Rapid.

There was no current in Granite Narrows.

We stopt at Deer Creek Falls for pix & lunch.

There was a small rapid just below the spring.

We lined Fishtail Rapid & another short one, both requiring lining half the distance.

The pull down to Kanab Ck was first hindered by a head wind & then helped by a tail wind. The head wind put water into the two Belknap boats.

Kanab Ck was running about 10 cfs of slick mud & we pulled boats up 50 yards for camp on the beach.

Just at dusk, a storm hit & poured down rain. Getting beds set & into them became complicated. The electrical activity & some rain continued until midnight.

Thursday, August 22 [2,200 cfs]

In lining Dubie, Mack fell among the rx, lost control of lines and his boat capsized. Yesterday, I broke an oarlock when beaching the boat.

Some mild breeze continues this morning. While we were at breakfast Kanab Ck. rose about 2 - 3 inches. It then dropt & was down about 2 inches when we pushed the boats in and ran down to the mouth at 9:30. We lined 100 yards at the head of the rapid altho it provided a sporting run. The rapid was a full half mile long & gave us some fancy rk dodging. We ran a series of riffles below & lined a short stretch of Matkatamiba Rapid.

Upset was heavy & full of exposed boulders. We had lunched just above & watched a brief thunder storm, then stood under an overhang at the head of Upset during a heavy downpour. One small fall went to work on the left bank. While we lined Upset a red flood of about 5 cfs came out of 150 Mile Canyon.

We photographed the spring at 152 - 3 RB but decided to go ahead as we had a 1.5 mile current & a down River wind.

We ran a half dozen riffles & small rapids down to Sinyala Rapid. A fresh rk fall had added much broken rk to the talus at RB and the rapid was as rough as we had seen. The big boulders called for extra lines.

Current & wind helped us down to Supai [Havasu Canyon] plus a few good riffles.

Supai was running red & we rowed inside the lagoon. [Estimate] of flow was about 150 - 200 cfs. Many pix in the fading light.

When lining Sinyala the River had risen about a foot & drift increased.

The River was rising at 6 - 7 PM at Supai.

Buzz found clear rain water in pools on the ledges.

Friday, August 23 [1,660 cfs]

Warm night with no storms threatening.

The River was down 1.5 - 2 [inches]. The color had changed to red but not quite as red as Supai Ck. Flow in Supai was about half of the previous night. Many pix & we cleared at 9:30. We ran the first half, then pulled in at the lower end of the bar & dragged boats 25 [feet] & ran out the lower half.

We had a good current. A lining job was demanded at about 157 and another at 158. Current & a light tail wind gave us a speed of about 4 mph. We ran 164 Mile & stopt for lunch, a half day ahead of schedule.

We ran Stairway [Rapid], but Gateway [Rapid] had a rk nest at the foot which meant an easy lining. There was a small flow of water in Gateway.

Current kept us rolling & between Gateway & Red [S]lide we were doing 7 mph. A number of good riffles helped speed & gave good runs. One boulder barrier was at about 176.

At 5:50 we pulled in at the [Vulcan's] Anvil a day ahead of schedule plus 4 miles.

We have seen many ducks, 2 grey heron & some beaver sign.

Saturday, August 24 [1,940 cfs]

Perfect night & good sleeping. The River was down a foot which probably means slower speed. Color continues red & it settles quickly.

At 6:15 a plane passed over which looked like Riffey's [John Riffey].

We traveled 22 miles yesterday.

The plane returned at 7:40 but was north of the rim & probably did not sight us.

We had fired some drift. We wrote on the beach 1 - AHEAD and increased the size of the fire.

We were away at 9:40 and pixed the Anvil, then floated down for a look at Vulcan.

Mack had sighted an orange parachute which was found to be a red rock.

Vulcan was a short three drops. We pixed it from both sides of the River & from mid-stream below. We lined down the left & pulled under the travertine caves for lunch. The coloring in the caves is worth the price of admission.

We cleared at 3 PM and, after a looksee, had a sporting run of lower Vulcan.

We had good running with riffles, down-River wind & current to push us along.

At Mile 181 LB were two clear springs at about 2 [feet] above River level & running about 2 cfs. At Mile 183 were several springs along LB adding about a cfs. We sighted a APA BM [bench mark] at [Mile] 183.65.

We arrived just above the trail beach at 5:45 at about 187.5. Briefly we had a head wind & for about 3/4 mile there was no current.

Sunday, August 25 [2,190 cfs]

Warm clear night with a constant down River wind blowing. Camp was in sound of a small riffle. The camp at the Anvil had no sound of the River. Most other camps have

had rapids music. A third cheese bomb [canned cheese?] has exploded suggesting they should be avoided.

The River had dropt about 8 [inches] night before last & seems to be down more this AM. The color is Colorado.

Mile point of our camp is 187.25.

We cleared the beach at 9 AM and found Whitmore [Wash] a riffle easy to run. We ran the three drops without a looksee & continued with a series of riffles that kept us moving. At Mile 194.5 - 195 we found three springs RB running about 1/2 cfs. from about 1 [inch] above River level so we filled buckets & ate lunch in the shade LB. We moved on at 12:55 & passed Parashont [Parashant Wash] about 1:50.

There were four or five places where the River was divided by islands.

At 3:45 we stopt for camp at Spring Canyon - about 204.25 RB for a 17 mile run in about 6 hours. This was the first day we had not lined or portaged nor made a looksee. We are now 2 days ahead.

Beaver signs are along this section.

Burros are recent on the bar.

Flows of the spring & creek give plenty of water.

There are small rainbow in the creek.

We waved to a plane before leaving camp this AM but got no recognition.

Buzz reports 6 burros at the lower end of the bar.

Mack went up the creek and found about three springs coming out of the base of the wall at the left bank about a half mile from the River. Above that, the creek was dry and the bottom of the Canyon a boulder field.

The M & M chocolate maintains a melted state. The chicken hash is OK but could stand fortifying with chicken.

Monday, August 26 [1,730 cfs]

Warm night. The wind blew up River & there were a few sprinkles of rain about 1 AM. Some overcast this morning.

The River is up over a foot and is Colorado. We probably have over 3000 cfs which means more of the favorable current. We should be in at Gneiss Canyon by Thursday with allowance for many pix.

Mack counted 27 riffles yesterday.

We were away at 8:20 and the run of Spring Canyon Rapid was mild.

205 Mile had a possible course, but we lined half way then ran lower end for pix. There was a very narrow chute at the bottom which supplied some good pix. I filled full & Mack sat on top of a wave for 3 seconds.

Below the beach on LB good water was flowing from a cave at less than a half second foot.

Run down to Granite Park was thru a number of shallow riffles. We stopt for lunch under a willow. Beaver had been active.

Granite Park Rapid was all water hazard & Buzz ran two highly pictorial courses after Mac & I lined. Buzz water load was small.

We found a heavy rapid at Fall Canyon at Mile 211 1/2. There was a possible course at extreme RB but we portaged.

There were a half dozen bass showing fins in a pool



Marston at Diamond Creek

half way of the rapid.

Stopt at the great bowl of travertine at LB near Mile 212 for many pix. The cave under was open & the water salty. The pool was warm & about 15 [feet] in diameter.

Continued down to Three Springs Canyon where we camped RB above the riffles. There is an arch on skyline RB visible from River.

Mack counted 23 - 24 riffles & rapids for the day.

Buzz crossed for water in Three Springs Canyon &

found mescal pits & artifacts.

Light storm hit when we were at Fall Canyon.

Tuesday, August 27 [1,600 cfs]

Warm, quiet camp & good sleeping. Clouds are scattered this AM.

We figure a run to either Diamond or Travertine [Canyons].

Recent burro sign is extensive on this bar.

River is down about 8" overnight.

Many jets overhead.

We crossed for a look into Three Springs Canyon & found springs within 200 [yards] of the mouth making a flow of less than a half second foot.

We cleared at 9:30 & 2 jets celebrated our departure by breaking the sound barrier. Several riffles were run down to 217 which required a looksee. Many pix were taken in some good runs. The rapid would rate 4 - 5 at this stage.

The rapid at 217.5 was almost as big but offered a fine sneak left. Bill ran the sneak for pix & the other boats took the tongue on the far right for more pix. We landed at 218 for lunch. Harry's [Harry Aleson] sign seems to be gone. The rapid here would rate a 2 - 3.

Many riffles down to 224 where we stopt to looksee. The course was rocky but there was a good sneak left.

Head wind slowed us to Diamond Ck. where we camped at 4:20 PM - 2 days & 2 miles ahead.

Mack tallied 19 rapids for the day.

Diamond Creek Rapid is just a rocky riffle.

Wednesday, August 28 [1,690 cfs]

Fine night but the wind blew some.

We have lost 200 - 300 cfs & the color is Colorado.

At 8 AM we heard a plane south of us & at 8:35 an orange tipped plane flew slowly & low over us. We waved red tarps & Mack was on the radio but we got no recognition.

At 10:15 the same plane [notation by Marston written above and encircled: NO] flew up the Canyon over the RB but showed no sign of having seen us. We waited until 11:45 to watch for a return & embarked.

The Diamond Creek Rapid was a series of three riffles. At 228 Mile Canyon we ran four lively riffles. We pulled in at Travertine Canyon for lunch & made many pix. We were

just above the riffle at 12:45 & left Travertine C at 2 P.M.

Buzz saw a rattler about 30 [inches] long.

We moved down to Travertine Falls & spent an hour at pix.

A half mile below a long riffle started at a canyon at RB & ended with a heavy short pitch at a small canyon LB - probably 231 Mile Canyon. We lined the top of the riffle, crossed & portaged the short drop.

We pulled in LB a half mile below at the great travertine spring. There is a steep gully [sic] LB and a steeper one filled with talus RB.

A crease in the bottom of Buzz' boat has opened about 1.5" due to the portage at 131.

Warm & clear.

There was a 4" bass in Travertine Ck.

We appear to be camped at 231.2.

Flow in Diamond Ck. was normal and about 1 - 2 cfs. Flow in Travertine Creek was about the same. Travertine Falls had more water than usual & might run 1/2 cfs. At the travertine spring where we are camped the total flow might run a 1/2 cfs.

Mack has an ear ache.

Thursday, August 29 [2,050 cfs]

Warm nights & the hot rx added some temp. A slight up River breeze.

The springs increased their flow because of the reduction in evaporation.

An old tire casing & an old tread have been sea-gulled from the Canyon to use as a smoke signal.

At 7 AM we saw the plane down canyon & waved the ponchos. The plane circled & Jim Jordan came in on the radio. They had missed us yesterday & had run as far as Supai. Jim reports Pierces [sic] Ferry bars boat travel above. He will try a small boat above there. We may be able to get there by Saturday night or Sunday if the current runs on the upper Lake.

It seems we are at Mile 232 as we are more than a quarter mile below 231 Mile Rapid. There is a riffle here and it appears there is a side canyon RB about 1/2 mile down. We cleared at 8:30 and landed right at the head of 232 Mile Rapid at 232.4. The side canyons on each side created boulder bars & the rapid was too hazardous for running. The jut of current drove into the water-carved alcoves at RB. Many pix. We crossed to LB & lined an easy course. There was a minor riffle at Mile 233 & we landed LB at 233.7 at head of 234 Mile Rapid. We lined the left side. We landed 234.2 at the head of the rapid without name. After many pix we ran it & got wet.

Bridge Canyon Rapid was 2 riffles at Mile 235 & at Mile 235.1 was a rather rough rapid. Three of us lined but Buzz took on a fine sporting course in the heavy water. It was close to the limit for the Sport Yak & Buzz was at 45° at one point.

We moved down to Gneiss Canyon at 235.8 & it was quickly recognized as the rapid used for tests. It had some good water & provided a good running course. Water was lower than the 2,700 when tests were on.

We stopt for lunch & pix.

Bill grabbed front stage by capsizing in the last wave

in this last rapid.

Bill pointed out the dam site at 236.3 & also the site which was drilled near Mile 237.

Current stayed with us and we were slowed by only a little up River wind so pulled in opp. Spencer Creek at 4:50 for camp.

Friday, August 30 [2,420 cfs]

Warm night with Lightning all around but we did not get sprinkled except a slight touch at dinner time.

Slow rising this AM with no rapid to tune us in to the day.

Bill & I took in the site on top of the lava cap.

We cleared at 8:50 & picked up current right away. We had current with us most of the time but twice we ran in slack water. Current & wind at one time gave us an estimated speed of 7 mph.

We noted the Reference Fault which the River follows about 3 miles to Salt Creek.

Stopt for lunch about Mile 258 LB - O'Bannon Bays - at about 12:15. A storm moved in and worked the area over thoroly [sic]. All streams, gullies & crevices were running & we spotted one fine fall off the rim. Cameras wait to work & the storm continued.

Triumphal Arch is open at the back with a window which appears to be open about 25 [feet].

We ran three very mild riffles between Quartermaster [Canyon] & the Bat Cave & three more before Scorpion Cove where we camped high on the shale. Buzz got some good water from the creek.

Mack had been losing a day & thot it was Saturday so was pushing for the flood lights of Pierces Ferry. Debate whether to continue Pierces before or after dinner was resolved by decision to camp at Scorpion ["Island"]. The wind blew hard & a storm moved in right after chicken hash dinner. It quit about 8 PM & the wind moderated so sleeping was good & some what cool.

Saturday, August 31 [1,990 cfs]

Fine morning with some breeze.

We cleared by 8:20 and had a good current to move us along at 4 to 6 mph.

Below Emory [Emery] Falls we were passed by by an outboard with a 75 HP [horsepower] & another with [two] 35 HP motors.

As we approached end of Canyon an outboard stopt at Mack's Yak about 1/2 mile ahead of us & then came up to us. Jim Jordan was ordering his crew into position so he could get pix - Young Jim & Spence.

After coffee & yakking he took us in tow & we picked up Mack. The running into the lagoon at Pierces was tricky due to a sand bar & many channels. We landed on the beach at about 11:30 - had lunch - loaded boats on Mack's truck & gear in Bill's Volkswagen & were in Boulder City at 4 PM.

Some concern had been felt over our safety & we have had some reporting to do to clear the record.

End of journal

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Canyonlands

Oceans did ebb and oceans did flow,
Immersing then draining the land.
Continents did sink and continents did grow,
Earth's molten core seeking to expand.

Sometimes there was jungle, desert or dunes,
Or rivers cutting deeply toward the sea.
Mountain chains rose; eroded, spread wide,
Over eons elements toiled relentlessly.

Such is the nature of Canyonlands,
It's wondrous, immense beauty to grasp.
Billions of years in the making,
Its great gifts at each turn make me gasp!

Life! A greater wonder than the others.
Single celled beings, then fish came to be.
Some grew legs and went to the land,
Seeking air, not water in the sea.

Dinosaurs came and dinosaurs went,
Becoming birds, reptiles or just gone.
Mammals evolved with fur and warm blood,
Some stood up to see better what's goin' on.

Such is the nature of Canyonlands,
I can't explain how these things came to be.
Maybe coincidence as some friends have said,
But there's gotta be more, seems to me.

How to explain the portentous human mind!
Finding caves, drawing pictures, keeping warm.
And fashioning tools and fire and the wheel,
Atlatl and spear, arrow and bow they did form.

We've come a long way, were we alone?
Now gunpowder and bombs are the norm.
And farms and cities and automobiles,
Planes and satellites a recent brainstorm.

Now in the night time in Canyonlands,
These new lights in the sky I can see.
Out in this vastness, He has to know,
What great wonder the next step will be.

Paul R. "Pops" Smith - 2002