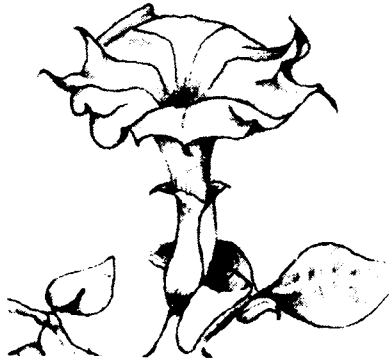


THE CONFLUENCE

The Journal of Colorado Plateau River Guides
Volume 1, Number 4 Fall 1994



San Juan RMP

SUWA

Recycling

River of Lost Souls

Uncompahgre & Unaweep

Tamarisk

UGO

The Board Sees

Professional Courses

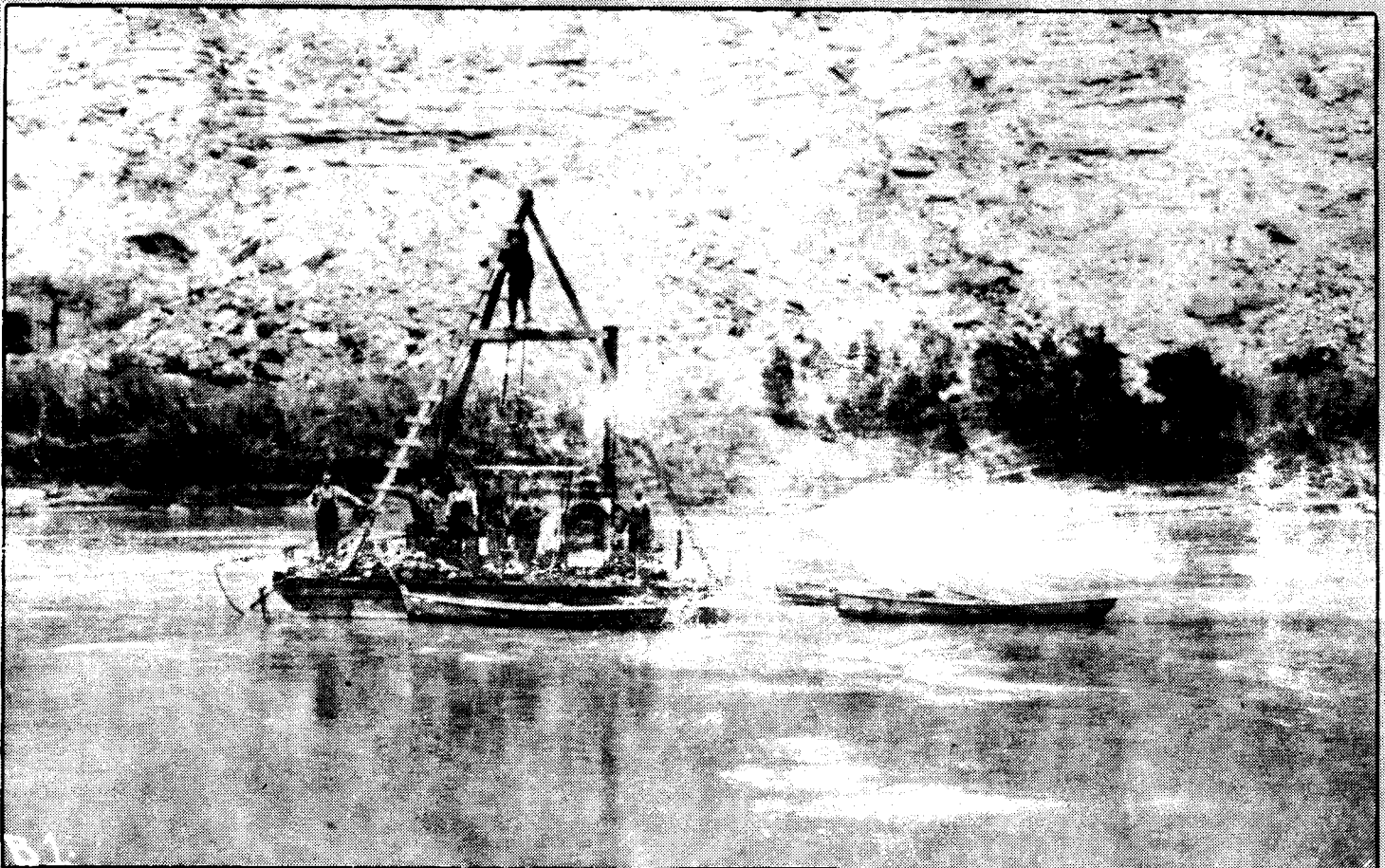
Yogie Yokey

Radiation Control Board

Recycle

Town Hall

Discounts



This photo was taken in 1914 by Eugene LaRue of the United States Reclamation Service 1/2 mile below The Confluence. This floating, steam-powered drilling rig is searching for bedrock to determine the feasibility of a dam. The crew drilled 124 feet without reaching bedrock when rising flood waters forced abandonment of the project. If built, this dam would have flooded the communities of Green River and Moab. Pictured third from left is Bert Loper. Photo courtesy of USGS Library, Denver.

The Confluence

...is the quarterly journal of Colorado Plateau River Guides.

Colorado Plateau River Guides is a non-profit organization dedicated to:

- * Protecting the rivers of the Colorado Plateau.
- * Setting the highest standards for the river profession.
- * Providing the best possible river experience.

Guide Membership is open to anyone who has worked in the river industry.

General Membership is open to everybody.

Membership dues:

\$20 per year.
\$100 for 6 years.
\$195 for life.
\$295 Benefactor.

General Meetings and Board of Directors Meetings will be announced.

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Moab, UT 84532-0344
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We need articles, artwork, poetry, stories, and opinions. If you use a computer, please send text for an IBM PC with WP 5.1 on a 5 1/4" floppy.

ISSN # 1078-425X

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 nor the board of Colorado Plateau River Guides. If you have an opposing viewpoint please send your comments to:

Editor, CPRG
P.O. Box 344
Moab, Ut 84532

Minutes of Meetings Available

If any member would like transcripts of the Spring or Fall meetings, please send with your request, an enclosed self-addressed stamped envelop.

Special Thanks to:

Don and Denise Oblak for funding eats at the Fall Meeting.

Jacque Ledbetter for a generous donation that was given at the conception of CPRG in November of 1993.

Dave Mackay for a Life Membership.

Shannon DeMuth for a Benefactor Membership.

Membership Cards

We will be issuing membership cards very soon. Thanks for your patience.

CPRG Decals

Anne Carter's drawing of a sacred datura has been chosen as the official CPRG logo. The illustration appeared on the front cover of the first issue of The Confluence. We'll try to have them printed and mailed to the membership before the season starts.

Announcing: Plateau Restoration, Inc.

Plateau Restoration Inc.,(PRI), is a newly formed non-profit incorporation dedicated to performing service projects: trail building, fencing, revegetation, design and long-term monitoring and care of public lands on the Colorado Plateau - especially along river corridors. PRI achieves these goals through grants and donations gained from the private sectors. All field work is performed by dedicated volunteers from the river community. Current projects are: Kachina Panel Area - San Juan River, Ranger Station - Westwater Canyon. For more information call or write Michael Smith at: PRI * P.O. Box 1363 * Moab * Ut * 84532 * (801) 259-7733.

CPRG - So What's In It For Me?
by Tim Thomas, Vice Chair

Over the past year, CPRG has evolved from an idea, to discussion, to formation, to an 150+ member organization. During this time, I've tried to spread the good word about CPRG and its mission:

- *Protecting the rivers of the Colorado Plateau.
- *Setting the highest standards for the river profession.
- *Providing the best possible river experience.

However, often as not, I'm posed with the vexing question: "What's in it for me?" At this point, I realize that professionalism and environmental altruism is out, and it's a question of what do I get for my dues. Granted, not everyone is a joiner, and money is money, so why join CPRG? So far, here is what we have to offer: The Confluence, CPRG's quarterly journal, our primary expenditure (70% of the annual dues) and means of communication. In short, The Confluence is an educational journal and an open forum for communication. Herein lies the ability to share knowledge, to revisit and learn from the past, to question and explore the present, and hopefully to envision and shape some of the future. How? Sharing our experiences, opinions, ideas, knowledge, enthusiasm, observations, and oneself. So, what will that do? Inform, educate, draw attention, promote advocacy, raise questions, work toward solutions, find answers, build consensus, and bring action. Why? Because there are over 500 river guides, working on some half-dozen rivers, on over 1,000 miles of waterways, and all within the Colorado Plateau. These same rivers encompass multiple habitats, elevations, land and water use designations, managing agencies, recreational and developmental demands; with no recognizable or unified voice from the professional guides regarding the rivers condition, use, abuse, operation and protection. So? So, we're missing our own boat! Shit is happening! Life is in session, so are you present and part of the problem, or the solution? The rivers are flowing: most toward money, some through dams, but there is still a lot to lose! For example: a water project on the Animas, loss of endangered species in the Yampa, gas wells near the Green, failed Wild and Scenic/Wilderness River protection in Utah, and unstable uranium tailings stored 100 yards from the Colorado River. Plus, a host of devastating but never-the-less dangerous precedent setting issues like: upstream jet-ski use, water skiing on the Colorado, increasing noise pollution from scenic over-flights in Canyonlands National Park, vandalism, abuse of cultural resources, and restricted or sensitive areas on the San Juan etc., etc., etc.

And how does it affect me? It affects your access, your enjoyment, your privacy, your health -- and yes -- even your job and pay. So what do my CPRG dues do? They give you first and foremost, a voice as a professional river guide (or river runner), and a part in a professional guides organization. They give you a chance to learn, an ability to act, and to be an effective part of the areas only

professional guides organization. It gives you an option you've never had before! Oh, and if the following stuff even matters after all that's been said (couldn't hurt though!), here's the rest of what CPRG has to offer so far: membership discounts at local boating stores, updated guide training and certification information, bi-annual (or more) meetings and parties, pull-out boating aids, information, classic river quotes and artwork, good stories and bad lies (or was it bad stories and good lies?), and last but not least, your own CPRG membership card! So spread the good word about CPRG! Recruit a new member, become one, give one as a gift, recycle and pass on The Confluence.

The Prez Says
by Susette Decoster-Weisheit

HAPPY ANNIVERSARY! Colorado Plateau River Guides celebrated one year in November. Through the efforts of some dedicated people and some hard work, CPRG has become an established organization.

Our fall meeting on October 28th brought a few changes and some new people into CPRG. Elections were held for the Presidency and two Board of Directors. I was re-elected for my second and final term as President. I am happy to say that this time I did not "bite the bullet." I fully volunteered, got some competition, and had to campaign for the position. This speaks loudly for CPRG. Welcome Steve (T-Berry) Young who was elected as Moab Director and we look forward to his involvement as a Board Member. Not everything went as planned. We were unable to elect a Director for Green River and left the position to be filled by a Board appointed person until the Spring Meeting. Sean Brown has accepted the appointment and responsibilities until spring when an election can be held. Thank you Sean! And a thank you goes to Rebecca Martin and Serena Supplee for their efforts as last years Board of Directors in Moab and Green River.

At this point I would like to continue to bestow a few well deserved thanks. A big thank you goes to Canyon Voyages for their generous donation of the chili dinner we enjoyed after the meeting. They brought beer, bought beer, and numerous stories rounded-out the evening. For a few of us, there were late night showings of first descents and other exciting white water videos. I would like to give a thanks to Jose Tejada, a legendary story teller. I don't remember having been so enthralled, entertained, and amused. Thanks to Tim Thomas for his efforts to clean up the house in the early hours of the morning before he left. And last, but not least, a thanks to John Weisheit for putting up with another one of my cooking frenzies and helping me to clean up the mess.

This has been a busy fall for meetings and plans. With winter and the Holiday Season coming on fast, I look forward to a deserved rest and visit with family and friends. Travel safely and we'll see you at the Spring Meeting.

River of Lost Souls

by Michael Black

By 1899, the people of Durango knew they had a problem. This town, founded only 20 years before, had become the metropolis of southwest Colorado. Located along the banks of the Rio de Las Animas Perdidas, the River of Lost Souls, and in the center of vast coal deposits, Durango was ideally situated to prosper. But, the river that gave the town life was becoming polluted.

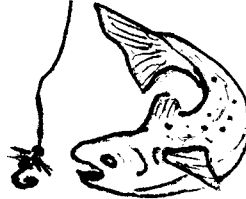
Durango could see the problem coming; in November, 1899, the Durango Democrat reported:

"The Animas is impregnated with deposits of mineral waste, sloughed from the San Juan Mills down to Rockwood. Every year the lie of concentrate deposits on the river comes a little nearer to Durango. We are not suggesting anything at this time, but the question of change in water supply must come up before long. The danger is not here yet but is getting closer every day." And in December: "The question that is crowding upon Durango thick and fast is one of water. The mill slime from Silverton are now reaching us."

There are many indications that the water quality in the Animas was very good prior to this time. In July of 1899, it was reported:

"It may be a source of comfort to those who have gone to distant streams to fish to know that 'Curly' Knight landed a 4 1/2 pound trout from a pool near the ice house yesterday noon and missed one equally large. The Democrat received the catch with the following attached:

Grasshoppers are roosting mightily low
Mosquitoes were flying high
But the nicest thing I found on the roost
Was this on my blue bottle fly



The trout was a native and it was most elegantly broiled and served."

The fact that the fish were identified as native trout is of great importance. Trout are very susceptible to contaminated water and native trout the least tolerant. The fact that native trout were living and reproducing in the Animas indicates that the water was of very high quality. As the Durango Democrat stated:

"We haven't noticed the trout abandoning the Animas River and a trout demands a pure article of water. If there was a particle of mineral or acid in solution we would not be hatching or fishing the Animas waters."

The problem with water quality was occurring because of the boom in mining upstream near the town of Silverton. Silverton, founded in 1875 in the center of Baker's Park, a vast mountain valley surrounded on all sides by highly mineralized mountains, served as the population and transportation center for the mining district.

The area was first explored by Americans in 1860 with an expedition led by Captain Baker. The inaccessible location, lack of easily mined placer gold, as well as the excitement of the up-coming Civil War, led to the abandonment of the district until the 1870s. Further

development was discouraged by the Ute Indians; who did not appreciate miners trespassing on their reservation. This problem was resolved by the Brunot Treaty of 1873, which ceded the high country to the federal government and the miners. This treaty and the Mining Act of 1872 allowed the miners to patent their claims and the boom was on.

The first successful mine in Baker's Park was the Little Giant located up Arrastra Gulch. Milling equipment was hauled in by wagons, in an arduous journey from the railroads, and up the Rio Grande. While the Little Giant soon played out, the mine was a clear example of the problems of the Silverton District: lack of transportation and the presence of low grade ore, which required extensive milling.

The transportation problems were partly solved by the arrival of the Denver and Rio Grande Railroad in 1882, which founded the town of Durango downstream in 1880.

The Silverton District, unlike many mining communities of Colorado, weathered the depression and silver collapse of 1893. While not as famous as the neighboring camps, Telluride and Creed, Silverton got by on its base metal production of lead, zinc, and copper; which supplemented the relatively less gold found in the ore. Increasing investment in a railroad system to service the far corners of Baker's Park, and the general reliance on an extensive system of tramways, allowed the mine to produce years-round. The low grade ores, as well as the high tariffs of the railroads, forced a great investment in mills to concentrate those ores to lower the cost of shipment. And those mills, with their inadequate disposal methods, created the problems for Durango's water supply.

By August 1900, the problem became critical enough that it came before the City Council:

"The council discussing at length new source of water supply. All members are alive to the situation and none dispute the fact that soon we must abandon the Animas River which mills above Silverton are polluting with dangerous health destroying mineral poisons."

A suggestion other than a change of water source was made by the Democrat that spring:

"The water question is the most serious problem the city has to face but the proposition must be met in some form. A strict enforcement of the law as to polluting streams will benefit conditions."

In a short time, the problem became more acute. Along with the mineral wastes, Durango had serious concerns about disease. It was a time before antibiotics were discovered, and infectious disease held a horror for everyone. Smallpox, diphtheria, and cholera could only be treated by confining patients in pest houses and hoping for the best. Durango was well aware of the effects Silverton's sewage were having on their health. From the Durango Wage Earner in April 1901:

"Silverton will soon have her exhaust sewage line belching into the Animas so that Durango will not have to wait for the old fashioned and slower process of pollution. Kind of wrap-up the chunks of bread and meat so the fish won't spoil them and put a string around them like a Christmas gift."

And a practical suggestion from 1902:

"If you contemplate suicide don't overlook the Animas as a means to the end. You won't have to drown yourself in it. You just drink some of it's water and you'll get there with both feet.

This comment is in contrast to: the "clear sparkling water" that the Animas was a few short years before.

By August, 1902, the problem had become acute enough for the city council to investigate the source of pollution around Silverton.

"CITY COUNCIL PROCEEDINGS ... VISITING COMMITTEE OF ALDERMEN FIND DEPLORABLE CONDITIONS IN SILVERTON AND SURROUNDINGS ... Mr. Darlington was asked for a report...He said in part: 'We went to the Silverton mills and were permitted to go up Cement Creek to the Gold King. We found that the tailings were run into the creek which empties into the Animas. All the water closets [toilets] stand over the stream and the cook house refuse is dumped into the stream. I talked with Mr. Kinney (the Gold King manager) and he said that the tailings did not injure the water and gave me to understand that if it wasn't for the San Juan mills there would be no Durango, which at present times owes its existence to the mills. If they were made to impound the tailings there would be no ore from that section shipped to Durango as it would be cheaper to build a [rail] road to Lake City than to impound the tailings and that is what they would do.'

They investigated other mines and mills, Silver Lake, Eureka, the Iowa, and the Little Dora, and found similar situations.

"But the worst sight that met our gaze was the Silverton dump. There we found a dead horse, a dead cow, and manure galore, some of the refuse lies in the water at its present low stage. If the river was to raise two feet the whole dumping ground refuse would come our way.

Darlington made a motion the when city attorney Miller returns that he start an injunction suit against all the mills in San Juan County that pollute the waters of the Animas River and adjacent streams and including the City of Silverton."

The editor of the Democrat did not think much of Mr. Kinney's threat to build a railroad to Lake City. He questioned:

"The propriety of soliciting Silverton's permit to remain on the earth, at least until Bill Z. Kinney gets his aerial route ballasted with hot air." And: "Bill Kinney was down from Silverton yesterday to see about ties for his Lake City road but he couldn't exactly figure out what he wanted with the ties and finally decided to price a pile driver and get estimates for his aerial route. Bill has all the requirements essential to success in the newspaper business - and then some."

Apparently the city attorney disappeared, and since the council could not find him, they could not to file for an injunction. The district attorney claimed it was a civil rather than a criminal affair, and therefore outside of his jurisdiction, but went on to say that an injunction would only cause strife between the two communities and would do no good as the river would continued to be polluted from other sources.

In the meantime, chemical tests were done on the water, and "a considerable quantity of lead and arsenic had been found." It was clear to everyone that something needed to be done but just exactly what was hard to tell.

The editor of the Democrat favored pursuing the injunction: "We are against any and all pollution of streams and dead

against a reckless and premeditated practice that is ruining human health and damaging the property of the hundreds of residents who reside along the Animas River. It is clearly criminal and under the law cannot be tolerated by the people." As well as: "Every hour that injunction proceedings is delayed is an hour devoted to a compromise with crime."

"Cooler heads" at another Durango paper suggested caution. From a Silverton newspaper: "But in striking contrast to the agitation of the Democrat the (Durango) Herald shows the futility of attempting to purify the waters of the Animas without shutting down the mills. The alleged wanton pollution of the waters of the Animas by the mill owners of San Juan County and the people of Silverton is only in the jaundiced vision of the editor of the Durango Democrat. [...] Local physicians who have given thought to sanitary engineering inform us that even if the mill tailings were impounded, the waters ... would still carry objectionable impurities to the main stream and pollute it practically as much as the tailings do."

A more chilling analysis was also made by the Herald: "If the real question to be discussed and settled is, which is of more importance to this western section of the state, the mills which form the industry of the little northern towns of the acres of land under cultivation for miles down the Animas Valley."

The Wage Earner was not impressed with the Silverton arguments: "Wonder how the Silverton people took to the Silverton sewage during the (county) fair? Bet they turned up their noses at it and never touched a drop. It is pretty hard sometimes to take your own medicine."

In 1903, giving in to economic pressure from the north, Durango moved its water supply to the nearby Florida River. This system had much to recommend it; the Florida was at a higher elevation than Durango and the water could be obtained by gravity flow. Also, very little mining or any other human activity had occurred in its headwaters. Today, the area is in the Weminuche Wilderness.

Of course, the movement of the city water supply did nothing about the pollution of the Animas River. It is clear from the old accounts, that while contamination of the water was the main problem, the people of that time were concerned about the health of the river.

From the Durango Wage Earner, October 1903, after the bond issue passed: "Only a few years ago and those who had occasion to cross the Animas River over the bridge separating North and South Durango will recall what a clear stream it was. One could stand on the bridge and gazing down into the pellucid waters watch the innumerable fishes on the bottom. Go now and see what a change has been wrought by the mills above. Sluggish and thick impurities - no fish of decent habits can exist in it. The Wage Earner believes that the mills should be compelled to stop their pollution of the grand old Animas and that its waters should be restored to their original beauty and purity."

Now, 92 years later, while the river has been cleaned up to a considerable degree, we still have much that needs to be done to restore the "grand old Animas".

As the editor of the Democrat put it: "The Almighty never intended that mankind should destroy so beautiful a stream, willfully and recklessly destroy it. It is an outrage upon the residents of Durango and the valley to permit it." And one might add, an outrage to future generations.



Yogie Yokey, Green River Captain

by John Weisheit

The following are excerpts from the Marston Collection at the Huntington Library about Captain H. T. Yokey. I would like to thank Rosalyn Jirge for the discovery of this ancestral boat yogie. [Brackets indicate editorial comment.]

[From an obituary in the DAILY SENTINEL of Grand Junction, CO., dated Tuesday, October 15, 1957:]

Captain Harry T. Yokey, age 86, who had become something of a legend in the Green River area, died about 12.30 p.m. Monday [which would have been October 14th] at the V. A. Hospital in Grand Junction. Captain Yokey was the man who built the "Cliff Dweller", a deluxe two-decker pleasure boat in 1905, to run on the Green and Colorado Rivers between Green River and Moab. It was through this and his interest in boats and early-day river running that he acquired the title of Captain.

The "Cliff Dweller" was run by steam, but the coal gave out on its maiden voyage and it had to be towed back to Green River. It was later rebuilt and named the "City of Moab", but proved impractical and was taken by rail to the Great Salt Lake. It was used there for many years ferrying passengers from shore to island.

Captain Yokey was born in Atumwa, Iowa, October 4, 1869. He was involved in the border raids along the Mexican border in 1892 and then reenlisted in the Spanish-American War. He was discharged from the Army while still in the Philippines.

Captain Yokey came to Green River in 1904 to operate the Rio Grande Pumping Station. He was a bachelor and had no known relatives.

The colorful retired railroader lived in a small home about three miles from Green River. He was noted for his frequent trips into the town afoot to pick up copies of the Congressional Record at the post office and also to secure groceries and supplies.

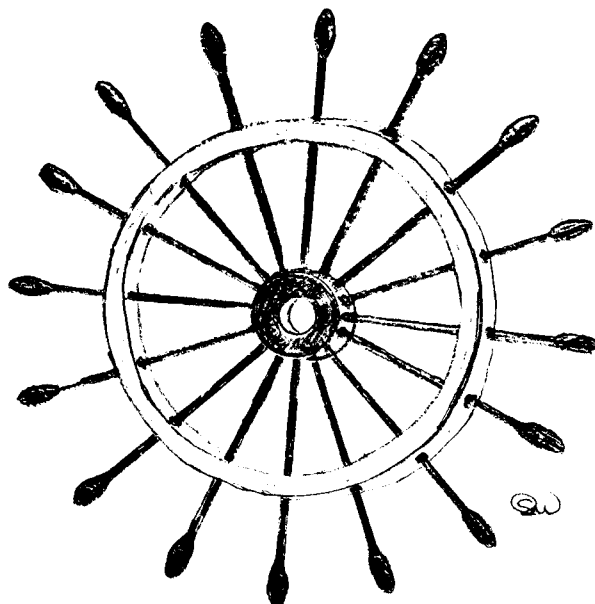
Captain Yokey was admitted to the V. A. Hospital in Grand Junction September 18. The Callahan-Edfast Mortuary of Grand Junction is handling arrangements and the body will be sent to Denver for burial in the National Cemetery.

A man named William Davis frequently corresponded with Otis Marston; helping to locate historic inscriptions. Davis made several inscriptions himself in Cataract Canyon from river trips completed by a ten-man raft back in the early 1950s. In 1952, Davis and his daughter Mildred ran Westwater Canyon; Mildred was probably the first female to ride through Westwater Canyon and at the age of fifteen. Davis wrote a letter to Cap Yokey concerning a trip in a boat referred to as the **Black Eagle**. The following letter is from Yokey, postmarked from Elgin, Utah, and dated October 4, 1952:

Friend Davis,

I have finally got around to replying to your two epistles of late date; so pull down yer vest; wipe off yer chinn; & on following begin.

Yes; we had a steamboat blow-up or blow-out some years back on lower River Green; I was builder, owner, commander, and pilot of craft (**BLACK EAGLE** - of Elgin), J. A. Ross, fireman; E. J. Cook, engineer; when I did not have time to monkey with the engine & a cap, us four & no more.



Fortunately or unfortunately; we had a water tube boiler & flood of mud for water; A couple of tubes got plugged with mud; naturally blown themselves killing the fire. Thus we had no power other than arm-strong rowboat. Plenty of wild meat and scenery for desert. Naturally no rush about getting out.

However, if it had been a flue-type boiler, we would be overdue to this day; just another mysterious disappearance on high seas of time or destiny in vast port of missing men.

However, later we were picked up by a boat bound for San Rafael. There I secured a team and wagon, thus landing my surviving men in their home ports of Elgin and Green River.

Some years back, in canyon of the Lower Green, while searching shelter from the elements under a ledge, I noted the following:
(D. JULIEN MAI 1836)

Did you meet this guy during your trip; Also did you note evidences of river cutting down through solid rock to its present location. [Questions probably asked by Davis in a previous letter.]

This is the biggest hunk of geological bolonga on Earth. Some years back I was employed by U.S.R.S. to transport MEN, GRUB & TOOLS down into the canyon of Lower Green to search for Bedrock for proposed power dam site in many cases. The workers discovered the bed of river was on a vast mass of slide rock (like you seen on both sides of river in Cataract Canyon & many other places along the waterway across the desert). [see front cover photo]

I have infested the Earth for over 80 years. Been awake most of the time, too. Noting what has been done & its affect on will be done. I am the man on the ground, seas and Rivers. Thus know what I am talking about.

I have seen enough to know, old Mother Earth has had other fixed axis of rotation; other than she now has & two great unbalancing factors now accumulating & have been for some millions of years. It's absolutely necessary for Earth to Delouse & ReNew itself. New continents, new Islands, Seas, Rivers, & Sea.

After a period of erratic unbalanced rotation, during which no part of Earth's surface has enough regular exposure to Sun to prevent freezing, yea Bo; be tougher than old Billy Bedammed, damn few survivors.

Signed: Yours as she looks - Captain H. T. Yokey" [sic]

Can You Manage That? San Juan Resource Management Plan

by Tom Rice

Here it is - Fall 1994. There was gridlock on the river, battles for camps heated up, and there is still no Resource Management Plan (RMP) for the San Juan River.

Paper Ho! Out on the bureaucratic horizon floats a ship holding a River Management Plan due to arrive next year. According to folks at the San Juan Resource Area BLM office, it is next in line after the Cedar Mesa Resource Management Plan.

However, we can get the ball rolling on our side of the river bank with a little discussion and communication. There are several tools we can utilize in order to create a successful RMP. One such tool is the Federal Land Policy and Management Act (FLPMA). The FLPMA provides the BLM with the general authority to manage public lands: "to protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values...". It boils down to protecting, "where appropriate", certain lands in their natural condition. The "where appropriate" phrase will be very important when deciphering the type and amount of management proposed. Although the plans deal with a river corridor, it is surrounded by the ever-present multiple-use land rationale.

Another possible tool is the Wilderness Act. Roadless areas which have wilderness characteristics, as defined by the Wilderness Act, have the potential of being protected. If an area meets those characteristics, the BLM would be required to manage those areas in a manner that would not impair its wilderness value until Congress made a decision whether, or not to, designate such an area as wilderness. If applicable, the Wilderness Act could be one of our strongest preservation tools.

The Endangered Species Act states that no federal action can be taken, which will destroy or harm critical habitat of an endangered species. Presently, the Animas-La Plata project near Durango, Colorado, is being fought with, among other things, the presence of endangered squawfish and humpback chub in the San Juan. This act could be one of the most important tools in maintaining the present flow release pattern on the San Juan River.

A final tool for the successful creation of a San Juan River RMP could be the use of the National Historic Landmark designation. Not only is the prehistory rich along the San Juan, the Mormon pioneer history and the contemporary indigenous history, abounds among the banks of the river.

Now you know about all of the important governmental legalese, acts, etc., that can be used in the creation of a RMP. They look good on the desk, but don't necessarily make it on paper, as we would like to see them. Therefore, it is necessary to look directly at the San Juan River and the conditions which effect it.

The San Juan is in the midst of rich oil and mineral

country. This past spring welcomed us with a limestone quarry visibly perched above the river west of Comb Ridge. Unfortunately, the site is on state land, which is notoriously lax on permitting environmental assessments, visual corridor consideration, and well, ah, common sense. A RMP could have blocked this. One possible route could have been the acquisition of state lands through sales, trade, or scenic easement. Years ago, the BLM acquired state land along Deso/Gray, protecting that corridor from development and possible harm. Including a similar rationale in a San Juan RMP could protect it from any further visual or physical harm due to mineral or oil extraction.

Moooo! You want a steak? Come run the San Juan from Bluff to Mexican hat! There are plenty of cows along the river to keep Billy Bob's Beef and Buckaroux House (sic) open for an eternity! If management objectives include maintaining the natural character of a canyon environment, there is a ton-of-work ahead when it comes to the bovine population on the mighty San Juan. An outright ban would be the best possible solution. However, remember this is Utah and I, unfortunately admittedly so, can eat only so much tofu. Restrictions would be the best compromise.

There is a conflict between cows and the dwindling number of desert bighorn sheep in the canyon. Cows can transmit deadly viruses to sheep. Therefore, cows should be restricted from area where sheep live. Overgrazing on certain sections of the corridor have heavily impacted the vegetation. Those areas need a little rest and revegetation. Further solutions to the cow problem are: closer monitoring of livestock, decreasing the number of livestock in the river corridor, and as a last resort, the construction of livestock barriers, which would blend in with the surrounding environment.

The Anasazi left behind a legacy of cultural materials, rock art, artifacts, and dwellings that cover much of the country surrounding the river. Antiquities legislation not only protect the scientific value of archaeological sights, but also provides public access to the sights in a manner which does not harm or detract from their informational value. Preservation is a key term regarding archaeological features. Sights visited often, such as River House Ruin, need to be stabilized, organized in a manner that would preserve its scientific integrity, and at the same time, remain as natural looking as possible. Vandalism, both intentional and out of ignorance, could be reduced through patrols and education. Finally, an extensive inventory of archaeological sites along the river corridor needs to be accomplished.

Water projects never die. Currently, the Animas-La Plata Project threatens the San Juan. A RMP should state an opposition to such a project, because it threatens endangered species and critical habitat protected by the Endangered Species Act. Certainly federal opposition to such a project is not simple, so public opposition must be vocal.

A RMP rolls together smoothly when you are an outsider looking in on the bureaucratic process. There are

however many possible headaches. To begin with, the lack of San Juan Resource Area recreational money, which funds river management programs, throws a serious monkey wrench into the RMP process. A river, which gets as much use as the San Juan, should never be without rangers at the ramp, nor with rangers on patrol.

One bureaucracy creates havoc and headaches. What about three! Joining the BLM creation of a RMP will be the Park Service and the Navajo Nation. The river ahead looks low, barred out, with an up-channel wind for these three entities.

There are many other issues to be discussed in a RMP. To name a few: user days, airplanes, party size, bathroom systems, roads, and camp designations. River Resource Management Plan becomes very important. This is a fabulous opportunity for BLM to create a fresh and functional approach to one of its most heavily used area.

To become involved with the San Juan River Management Plan please write:

Bureau of Land Management
San Juan Resource Area
P.O. Box 7
Monticello, UT 84535

Letter

Hello Boaters:

I am not against fun, but...this note, a mix of common facts and observations and several uncommon opinions, will add little new to the known peculiar human circumstance(s) of alcohol, drug and dope use and abuse.

The recent high waves of historical ENFORCEMENT mentality arise from a green and grey perceived problem of substance use/abuse. There is an underlying tenet that management by itself can look good or earn its considerably more than river folk wage, salary, and benefits if they take on and solve the drug problem. Alcohol, drugs and dope have no visible constituency, no voting block, no demonstrating masses. The FIRST question: with the some 120,000 annual river days/nights, exactly how many incidents, verified reports of separately, here say renderings are listed with the stipulation that alcohol, drugs or dope use/abuse were a factor? One, ten, one hundred?

Let us not kid ourselves; wrecking your boat in hateful low/high water, or dumping a boat in any water can not be attributed to the operator or crew being in impaired or altered states. Stupidity, inexperience, unfamiliarity, marginal equipment (When and how were your straps sewn anyway; who rigged this mess?) and just random luck (...the wave just broke on me 'mates) all are factors in boating incidents and mishaps on the river. The number of on-off river incidents exceeds the reported number of river incidents. BUT, friends, in any incident, anywhere, here are the question(s): "Had you been DRINKING?" ...and..."Were you CLEAN and SOBER?"

Alcohol (a drug) and its altered state is legal; drugs and dope (why do you think they call it dope?) are not. All are available. Both cause impairment of the body, mind and cosmetic function (at 8:00 a.m. who has blood shot eyes from the bright sun?) You know this.

CREDIBILITY: Even after many years of refinement, HEAVY guillotine measures, RULES, LAWS, policies, screening and scare tactics have not apparently significantly reduced the RATE of alcohol/drug/dope incidents in the motor vehicle driving - DWI. Yes, in the typical NRA (Lake Powell/Mead) and elsewhere, BWI is the most prevalent cause of recreational boater incidents. This is known. Is the same true for commercial boating/guiding? YES or NO? Both commercial and amateur/private boating have a vacation mentality index (boater wants to have fun in the sun) that among the participants makes what is called: a set stage. For boat folks too, alcohol, drugs and dope are part of vacation; in life as on the river? or on the river as in life? It depends upon personal perspective. If drug, dope and alcohol problem(s) exist, and the laws/enforcement are not credible, what to do?

COMPLIANCE: the fun, the hazards, effects of drugs, dope and alcohol are known: you know them, I know them; but we are human and ignore the eventualities. For us, then, to

Radiation Control Board in Moab

A meeting of the Utah Radiation Control Board was held at Star Hall in Moab, December 1, 1994. Besides attendance by CPRG were peoples of the Navajo and Ute nation, Ken Sleight, Walt Dabney of Canyonlands National Park, Noel Poe of Arches National Park, and other concerned citizens of Grand and San Juan Counties. The 11 member board traveled to southeast Utah to visit sites of uranium ore reduction facilities, their tailing ponds, and to interact with public comment.

Native Americans were concerned about their heritage to the land and the quality of their ground water. CPRG was concerned about the threat uranium tailings produce to a healthy ecology of the Colorado River, the unsightliness of the tailings pond (which usually starts the tour for daily jet-boat trips and Cataract Canyon trips) and the lack of scientific information available to the public.

Some citizens were concerned about wasting taxpayer money by moving tailings to better geophysical areas and preferring to cap the pile in place. Others mentioned the traffic problems and the ecological impacts that quarrying and transporting rip-rap from Round Mountain would cause to residents of Castle Valley. Motorists who use Highway 128 are concerned for their safety when considering tractor-trailers using a highway that is not designed for such loads.

Walt Dabney offered what may be the best solution: use the existing railway to transport the pile and rip-rap, build a spur into the geophysically safer Mancos shale, and cap it there.

I think more than anything there is a principle that needs to be followed here. The ignorance of the past is no reason to continue in like ignorance. These minerals are unsafe to all living creatures and need to be geologically contained. I for one am tired of this legacy of cold war newspeak. John Weisheit, Secretary/Treasurer, CPRG.

be effective as a cadre of professional river guides, not in foot dragging submission to management dicta or laws/rules but in rational thought, here are a few basic ideas and commandments:

**Announcing:
Colorado Plateau Town Hall
March 3-4, 1995**

1. **IF YOU DRINK, DON'T DRIVE:** on the job, the hot day beer is OUT; have a designated driver at the end of the day or trip if party mentality abounds. Throttle to bottle/bottle to throttle time spans aren't impossible in length, but reasonable. **COMMUNICATE:** when you are wasted, asking your friend to drive is smart, but you may not be reasoning well. Friends don't let friends work impaired.

2. **ANYBODY WITH HALF A BRAIN** can easily hide alcohol and drug use. The Classic Coke may easily be 1/3 rum from a water bottle of private stash; the pipe or rollyourown can be other than the usual and a large coffee mug easily holds a 12 oz. can of barley pop.

3. **INTELLIGENCE, FORESIGHT, HUMANNES:** we are dealing with our very own group of sharp, quick to learn, articulate and knowledgeable boaters and friends. The hazards, **CONSEQUENCES** of known impairment from alcohol, drugs and dope are the **THING** we have to get across to our peers. A private harumf or eye roll can communicate: our peers are not dumb. The most important elements for removing the danger of accidents/incidence from **BWI/WWI** are individual and group peer knowledge, communication and individual action: **IF YOU USE/DON'T WORK.** We are not paid to drink on the job, but our clients want to have a **FUN** trip, does Miller-time mean fun?

YOU DON'T SELL ANYBODY ANYTHING BY CRITICIZING THEM. The current laws against use/abuse anywhere are not very effective. We know that, but will higher waves of enforcement or hyperlexis eliminate use and abuse of alcohol, drugs and dope? You answer. IF we guides accept the what-ever **CONSEQUENCES** of alcohol/drug/dope use/abuse/dependence, are we co-dependent or just enabling? **SILENCE IS A POSITIVE RESPONSE.** **IF YOU CAN TOO GET IT RIGHT, YOU CAN HAVE THE JOB.** Thanks to the many who have helped. Nels Niemi.

Economy and environment in the U.S. have been treated historically as an either/or proposition. To protect the environment, many believe, economic opportunity has to be sacrificed, or vice versa. Over the past few decades, both our understanding of this relationship and the public values surrounding it have been shifting in the U.S. The country has moved slowly towards a preference and a mandate to find ways to achieve a sustainable balance between economic development and environmental quality.

This change in public knowledge and values has had, and will continue to have, sweeping implications throughout the nation. The Colorado Plateau has not been immune from these changes; in fact, much of the social, cultural, and economic fabric of society on the Plateau has felt the impact. How we as a region choose to respond to these changes will be primarily determinant to the future quality of life, economy, and environment in this unique and grand area that we call home.

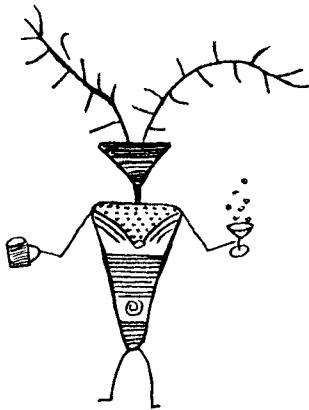
The Future of the Colorado Plateau: Choice or Chance?

The future of communities, landscapes, and resources of the Plateau, hangs in the balance. Currently, innumerable laws, regulations, institutions and processes govern a great deal of what is proposed and what happens on the Plateau.

Meanwhile, many of these processes have contributed greatly to making adversaries and enemies out of the people who live here. They have been expensive, complex, and time-consuming. Worst of all, the solutions that emerge often don't please anybody. The quality of life on the Plateau has been negatively affected by present decision-making processes, their contentiousness, and polarization.

New Approaches

The last decade has seen development of a number of collaborative approaches to decision-making processes, methods for addressing disputes, and conflicts. More recently, there has been an increased interest in reexamining older methods used by ancient care givers and indigenous peoples. Listening techniques, visioning, meditation, facilitated negotiation, negotiated rule making, single-issue collaborative and other alternatives, have evolved from more traditional dispute resolution processes like litigation. Forums, partnerships, listening circles, cooperatives, and councils have been created and experimented with to provide new mechanisms for communication and problem-solving. Many of these methods, techniques, and processes can significantly aid decision-making and problem-solving by helping people find common ground instead of fostering acrimony and defensiveness. They offer an environment in which creativity, new approaches, and solutions can evolve from collective and



collaborative efforts. They hold great potential for helping people find new ways of approaching difficult issues on the Colorado Plateau.

Colorado Plateau Forum

Can we do better at finding solutions to the problems associated with the environment-economy interface on the Plateau? A key will be bringing together diverse interests to begin face-to-face dialogue, examine specific goals, needs and positions together, rethink strategies and creatively imagine and develop a future where multiple objectives can be met simultaneously.

If we do not seize the initiative, work to resolve our own problems with broadly acceptable solutions, we can rest assured that others will decide for us. And it is likely that we will not be pleased with the outcome.

Collaboration: The 20% Solution

There are numerous economic and environmental issues on-and-around the Colorado Plateau that demonstrate the time-consuming and contentious nature of present decision processes. Whether they be endangered species in our rivers or forests, the problems of maintaining infrastructure in a period of rapid population growth, or the demands and effects of a booming recreational industry, the resolution of these issues has often characterized by acrimonious debate, litigation, congressional legislation, expensive research, and a general mistrust among organizations and individuals involved. Based on our differences, these processes have, as often as not, produced train wrecks whose solutions have pleased on one.

To many of the participants who have lived with these processes, it is evident in hindsight that a different process could have been less costly in time, money, and human resources. The Plateau is made up of diverse people and interests that share a common place. Many believe we disagree as much as 80 percent with respect to natural resources and economic issues. If that is true, it also means we probably agree on the remaining 20 percent. That is the bridge the Colorado Plateau Forum builds upon, a process based upon collaboration and shared efforts toward a solution. It begins with our 20 percent in common.

Will such a process lead to solutions? Sometimes yes, but often we may still resort to more traditional methods. Each effort will be unique and determined by the participants themselves. However, a collaborative process may increase our common ground from 20% to 30%, or 50% or 70%. Each increment gained can save us tremendous time, energy, and money. There is much to gain, and little to lose. For more information contact:

Organizational Steering Committee
Colorado Plateau Forum
c/o 331 East Mohawk
Flagstaff, AZ 86001
(602) 774-1178

The Organizational Steering Committee for Town Hall is:

Colorado Plateau Forum, Bureau of Land Management, City of Farmington, Colorado River Energy Distributors Association, Economic Development District of Southwest Colorado, Five County Association of Governments, Grand Canyon River Guides, Grand County Commission, Hopi Tribe, National Park Service, Northern Arizona University, Northwest New Mexico Council of Governments, San Juan Forum, Southeastern Utah Association of Governments, U.S. Forest Service, Upper Colorado River Commission, Western Area Power Administration, Western Network.

Southern Utah Wilderness Alliance

Eco-Challenge Lifestyles, Inc. of Universal City, California, wants to run a race for up to 250 contestants across 300 miles of southeastern Utah in April of 1995. MTV would air the race, as would CNN, ESPN, and the network news, according to race promoters.

The race course would include narrow slot canyons, such as the Black Box on the San Rafael River, and the Black Hole in White Canyon. Contestants would travel through cryptobiotic soils in Emery, Grand, and San Juan Counties. They would run, ride horses, mountain bike, rappel, and raft their way along a route which includes wilderness study areas and congressionally proposed wilderness.

SUWA, along with the Sierra Club, and the Wilderness Society, offered to work with the Eco-Challenge promoters to identify a race course which would avoid sensitive areas, but the promoters refused to cooperate.

Still, race promoters are trying to cash in on the public's concern for the environment by latching onto the "eco" title and claiming they will send a pro-environment message, but actions speak louder than words. Eco-Challenge refuses to stay out of wilderness study areas and congressionally proposed wilderness.

By the time you read this article, the comment period for this proposal will be over, which was December 20, 1994. Still, it is important to be aware of the situation should problems stall the proposal for more public comment.

For more information please write or call:

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Moab District, BLM
P.O. Box 970
Moab, UT 84532
(801) 259-6111

SUWA Moab Office
Scott Groene
(801) 259-5440

SUWA Main Office
1471 South 1100 East
Salt Lake City, UT
84105-2423

The Ugo Meeting

CPRG was in attendance at the UGO meeting the first week of November at the Moab District BLM Office. We would like to thank UGO members and president Richard Jones for accepting CPRG attendance.

Discussion was considered for incidents while conducting a river trip. It was suggested that bombproof documentation is the best way to avoid tangled legal problems down the road. A journal should immediately be started to document as many facts and observations as is possible; this would include your coverage of safety lectures and warnings made during the trip. It was also suggested that all first-aid kits should include a waterproof disposable camera to document incidents with photography; remembering to photo terrain and weather conditions.

Kate Kitchell was introduced to the group as the new Moab District Director. Kate is a familiar face to Canyonlands: "I've had red sand in my shoes since 1975." Kate invited all guides and outfitters to talk with her about their concerns.

We discussed our high rates with the Workmans Compensation Fund (WC) here in Utah. It was interesting to find out that the fund is not a state agency but rather a non-profit organization that handles 51% of WC policies in the state of Utah. We shared our concerns with WC about Utah rates that are three times higher than other states. It was explained to us that our rate was classified according to national and state insurance board standards. We basically insisted for a reclassification and WC seemed willing to investigate the matter. If a savings to the outfitter becomes a reality, CPRG hopes that the outfitters will budget the savings to equipment and payroll.

Bonnie from Redtail Aviation addressed the meeting to inform us that flights into Mineral Bottom could be closed for reasons of not acquiring an operation permit and for impacts to wildlife which include peregrine falcons and bighorn sheep. Redtail is willing to change flight patterns over Canyonlands National Park due to public concerns about noise pollution. Meetings with the Park Service are pending.

Larry Lake from Western River Expeditions spoke about the S-208 legislation concerning concession reform in National Parks. The bill died as a result of a filibuster by an Alabama senator. The advocacy group, National Parks and Conservation, will reintroduce the bill for the 104th Congress for their reasons that: concessions contribute to the degradation of the resource and the wilderness experience. They hope that revenues incurred from these reforms will help finance park service operations. This legislation could increase the price of services offered to the public by concessions. It may also affect employment of guides and curtail the investment of the outfitter.

Walt Dabney, superintendent of Canyonlands National Park, introduced some of his new staff and procedures for the coming season. He also introduced the new superintendent of Glen Canyon National Recreation Area, Joe

Austin. Dave Wood has been transferred to CNP from the Philadelphia Regional Office as a park planner for the upcoming River Management Plan. Walt also informed us of a meeting in Price on January 5, 1995 in Price, Utah, for the Canyon Country Partnership. CCP is an interagency partnership that manages 15 million regional acres and will be involved with the river management plans that are occurring in the Park Service and BLM.

CPRG informed Superintendent Joe Austin about the proposal by the Bureau of Reclamation to increase the height of the spillway gates at Glen Canyon Dam. We expressed our concern as river guides that we do not want to lose rapids and camps in Cataract Canyon and the San Juan due to modified operations at Glen Canyon Dam.

River management issues were also discussed with the BLM. Banning dogs from the river corridors was strongly encouraged. Ruby Canyon will have regulations for 1995. Trip populations and motor use were also discussed.

Tamarisk

by David Williams

In Death Comes to the Archbishop, Willa Cather wrote, "They [were] . . . miraculously endowed with the power to burst into delicate foliage and flowers, to cover themselves with long brooms of lavender-pink blossom. Father Joseph had come to love the tamarisk above all trees. It had been the companion of his wanderings." Although this is a fictitious account (tamarisk were not recorded in New Mexico at the time this story occurs), these three sentences address two of the problems with tamarisk: to many people they are beautiful and they grow throughout the southwest, at least in riparian areas. Botanists, ecologists and river runners think less well of tamarisk. It is commonly viewed as a nuisance, a killer of native plants, a colonizer of beaches, and a generally useless shrub.

Nurseries on the east coast introduced tamarisk into this country from the Middle East in the early 1800s. The Old American Nursery in New York City offered tamarisk as early as 1823 and several eastern nurseries listed in them in the 1830s. A California nursery, representing the Highland Nursery of New York, listed three species in 1854. By 1861, other nurseries based in California had begun to offer tamarisk.

The United States Department of Agriculture soon began growing the plant and by 1868 listed six species in their Annual Report. These plants grew in the Department's Arboretum and contributed to the growing distribution channels.

At present, botanists have separated tamarisk into two common species, although, like many aspects of tamarisk, this is controversial. The evergreen variety, Tamarix aphylla, can grow to 60 feet in height and generally has one trunk. The deciduous variety, Tamarix chinensis, is the one that has spread throughout the west. However, some botanists believe that another species exists: Tamarix

ramosissima. This confusion arises because these two species may interbreed and because of variation within plants of the same community.

Tamarisk escaped from cultivation sometime in the 1870s. The earliest collection outside of a nursery occurred in Galveston, Texas, in 1877. Wild tamarisk appeared in Utah in 1880. By the 1920s, California, New Mexico, and Arizona also reported tamarisk. It spread widely and quickly as people introduced the plant for erosion control, as we altered river banks through the removal of native vegetation, and by the construction of dams.

We are fortunate that an excellent record of the tamarisk invasion of the Colorado and Green Rivers exists. E. O. Beaman's photographs of Powell's 1871 expedition reveal what the river looked like before tamarisk. A Kolb brothers photograph shows tamarisk at the head of Marble Canyon in 1911. Photographs taken by the Bureau of Reclamation for potential dam sites in Cataract Canyon in 1914 and 1921 do not show tamarisk, but they do appear in a 1927 C. Eddy picture of the confluence. One geographer estimates that tamarisk moved up the rivers at a rate of 12 miles per year.

Comparing Powell's photos with modern photos shows how tamarisk has affected the riparian shoreline. In most cases, the only difference is that tamarisk now dominate the shoreline. They have colonized and stabilized ephemeral sand bars, creating river channels that are an average of 27% narrower (see illustration on page 13). River islands have also become larger and some are now attached to the shoreline creating new river bottoms (for instance, June Bottom was an island in 1951). These changes have resulted in increased overbank flooding and a river less able to adapt to changing flows.

Less obvious changes have also occurred. Tamarisk has contributed to a lowering of the water table, due to its extremely high transpiration rate; mature plants can use 200 gallons of water per day. In one case study in Death Valley National Monument, a tamarisk removal project begun in 1972 helped return a dried marsh back to a wet, healthy ecosystem.

Tamarisk have several adaptations that have helped the plants spread so far, so quickly. A single mature plant can produce 500,000 seeds a year, which can germinate within 24 hours of becoming wet. Tamarisk flower from April through October and seeds can establish themselves in fall when other species' seeds are not present. Seedlings can tolerate desiccation at an earlier stage than willow or cottonwood, and mature shrubs are more drought resistant than native plants. One study also found that tamarisk can survive up to three years in cold, well-oxygenated water.

One author summarized the tamarisk predicament: "Under optimum conditions, a desert riparian area containing only a few tamarisk trees can be converted to an impenetrable thicket in less than a decade." Once they become established, tamarisk have further adaptations to resist invasion by other species. A dense thicket has little bare soil underneath for other plants to set seed and tamarisk exudes salt from leaf openings, which fall to the

ground, creating a hypersaline condition that kills other grasses and seedlings. The closely spaced trees also allow little sunlight to reach other species seedlings, further preventing invasion. Tamarisk also redevelop quickly after burning or cutting.

Despite all these adaptations, the tamarisk picture may not be as bleak as it has been painted. Some researchers now believe that tamarisk has reached its maximum distribution. Land managers have started to realize the deleterious effects of tamarisk and in some areas, successful efforts are under way to remove the plant. More importantly, further establishment is being discouraged; we are attacking the plant before it gets out of control.

Although most people think that tamarisk is bad for wildlife, some success stories have been reported. The willow flycatcher, a de facto endangered species, has shown an increase correlated to its use of tamarisk for nesting. Beekeepers in Texas report that they can charge more for honey produced from bees that use tamarisk.

At this point though, we only have about fifty years of data on tamarisk, much of it conjectural. Ecologists are just starting to learn about the tamarisk lifecycle and its place in the riparian ecosystem. We know that the tamarisk invasion occurred at a time when humans were significantly altering western waterways. Will it continue to thrive in its present state or will native species reestablish themselves? Fifty years is not a long time in the natural world.

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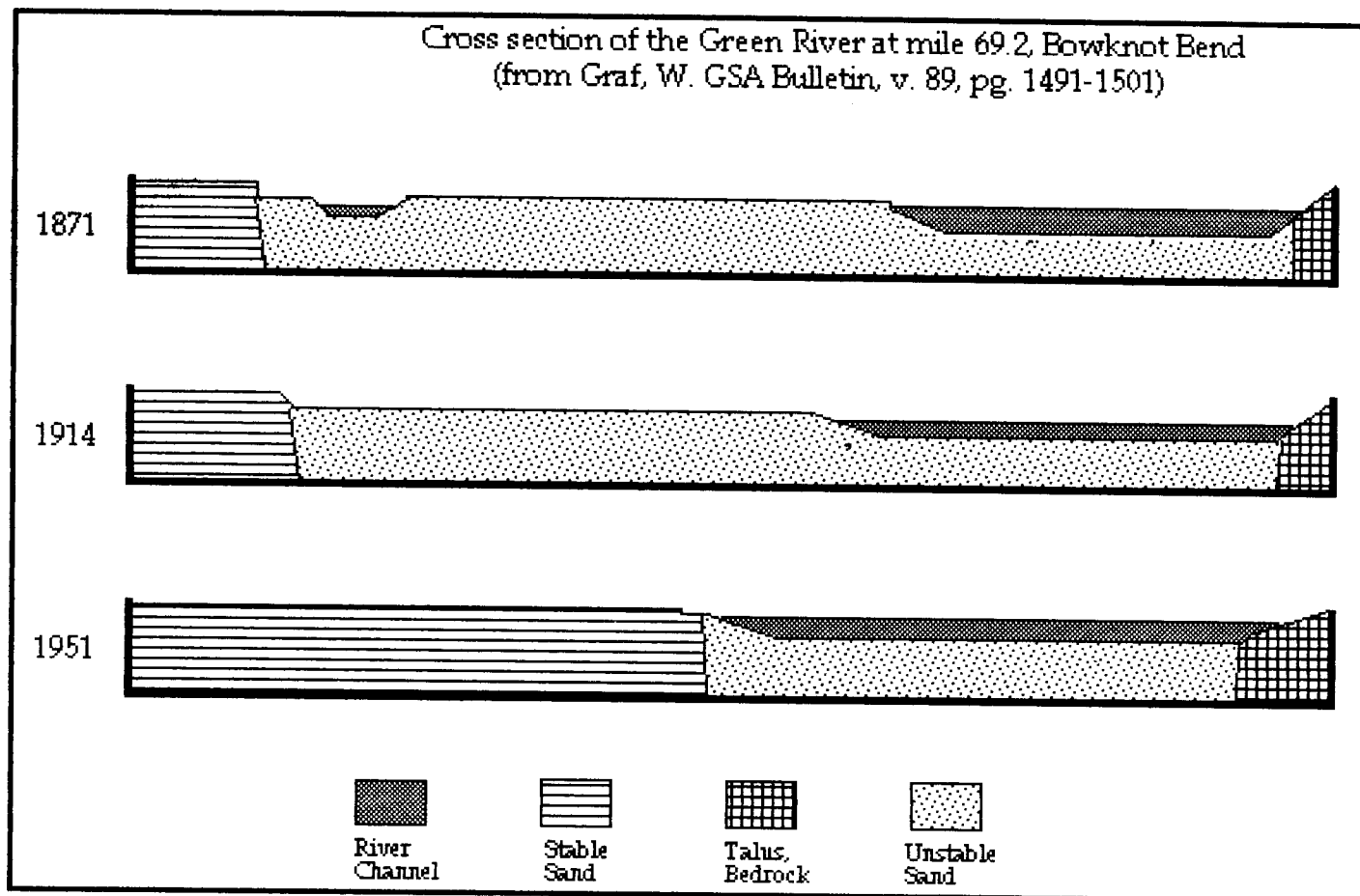
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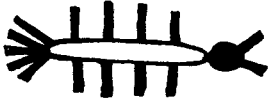
Cross section of the Green River at mile 69.2, Bowknot Bend
(from Graf, W. GSA Bulletin, v. 89, pg. 1491-1501)



CPRG Membership Discounts

The following tabled businesses will honor discounts for CPRG members. Since this service is in the infancy stage, store personnel may be unfamiliar with their protocols. If difficulties entail, please ask the store manager directly for verification. We have made phone verifications ourselves before going to press. Happy spending!

Aspen Glow Mountain Sport Chris Cremer 885 Lupine #B Golden, CO 80401 (303) 277-0133	Colorado Kayak Supply P.O. Box 3059 Doug Ragan Buena Vista, CO 81211 800 535-3565	Four Corners River Sports P.O. Box 379 Chuck Whales Durango, CO 81302 800 4CORNERS	Boulder Outdoor Center 2510 North 47th Street Boulder, CO 80301 303 444-8420
	Poison Spider Bicycles 497 North Main Moab, UT 84532 (801) 259-7882	Kaibab Bicycles 391 South Main Moab, UT 84532 (801) 259-7423	River Runner Sports 401 North Main Moab, UT 84532 (801) 259-4121



Professional Guide Training Programs
Canyonlands Field Institute

P.O. Box 68 * Moab * UT * 84532 * (801) 259-7750



Wilderness First Responder. January 21-29.....Cost: \$375
(Deposit: \$125)

This 10-day course, designed for outdoor educators, is built upon the national pre-hospital care standards of the American Heart Association CPR, American Red Cross First-Aid, Wilderness Medical Society, and Department of Transportation First Responder, and EMT courses. Emphasis is placed on topics pertinent to the backcountry, prolonged transport context. Program format includes lecture/discussion, skills practice, simulated drills, and critiques based on videotapes of the drills. Certification is for 3 years. Instructor Steve Lyons, president of Wilderness Professional Training/EMSED, has more than 20 years experience coordinating and instructing EMS courses in addition to an extensive background in backcountry guiding.

American Red Cross Emergency Response.....Cost: \$195
March 20-25 and April 21-26 (Deposit: \$65)

May also be scheduled in early February. Call for further information.

This new 43+ hour course provides the first responder with knowledge and skills essential in an emergency to sustain life, reduce pain, and minimize the consequences of injury or sudden illness while waiting for more advanced medical assistance to arrive. Certifications upon successful completion of this course are: American Red Cross Emergency Response, and American Red Cross CPR. Instructors are American Red Cross/Emergency Response. Hours are 8:00 a.m. to 5:00 P.M. during the 10 day course.

Colorado Plateau Professional Guide Institute.....Cost: TBA

[CPRG is on the steering committee for this program and highly endorses this program through compliance with its mission statement.]

Level I - April 8-9 & May 13-14

For first-year guides, this workshop covers basic lessons in natural and cultural history, and geology of the Colorado Plateau. Based at Professor Valley Field Camp, participants also learn interpretive techniques. Recommended for river, bike, jeep, and other guides.

Level I - Basic River Ecology and River Skills
April 14-16 & May 19 - 21

For experienced river guides, this workshop improves skills in rowing, safety and rescue techniques, and adds to knowledge of camp routines, land and river ethics. Includes an overnight on the Colorado River in April and on the Dolores River in May; depending on river flow.

Level II - May 5 - 7

For trip leaders and guides with 2 to 5 years of experience. This workshop deals with special topics and issues of concern to guiding professionals of the Colorado Plateau area. Topics ranging from ecology, geology, cultural history, interpretive and leadership techniques, and public land ethics and management. Based at Professor Valley Field camp.

Sign up now! Address and phone number at the top of the page.

Wilderness Medicine Institute, Inc.

P.O. Box 9 * Pitkin * CO * 81241 * (303) 641-3572



Wilderness Medicine Seminars
December 1994 - August 1995



A) Wilderness Emergency Medical Technician

This course is designed for outdoor leaders, search and rescue members, backcountry rangers, rural ambulance attendants, and other individuals who provide emergency care in remote settings. While fulfilling the DOT requirements for certification, this 180 hour program significantly expands the required topics to address the issues involved in extended care and introduces backcountry rescue techniques.

Classes are held in Pitkin, Colorado: January 2 to 27
Cost: \$1,395* May 22 to June 16
Phone: (303) 641-3572 July 31 to August 25
*Price includes tuition, lodging and meals.

B) Wilderness First Responder

This course is designed to provide outdoor leaders, guides, rangers, and travelers with the knowledge needed to deal with emergencies in remote settings. It is an 80 hour curriculum, meeting all the DOT national standards for First Responder with additional protocols for extended care situations. Emphasis is placed on prevention and decision-making.

Classes are held throughout the West from California to Montana; on dates from January to June, at prices from \$350 to \$665*
Please call (303) 641-3572 for more information.
*Price varies due to lodging and meal packages.

C) Wilderness First Aid: May be used as a WFR Refresher

Offered since 1975, this two or three day course is used by many organizations to introduce first aid and long-term patient care to trip leaders, camp counselors, guides, and rescue team members. In addition, it is often used for recertification by those with previous training.

Classes are held throughout the West from Washington to New Mexico; on dates from January to June, at prices from \$90 to \$250*.
Please call (303) 641-3572 for more information.
*Price varies due to lodging and meal packages.

Sign up now! Address and Phone number at the top of the page.

Canyon Country Partnership

The Canyon Country Partnership (CCP) will mark its first anniversary on January 5 at its quarterly meeting in Price, Utah. The meeting will begin at 10:30 a.m. at the offices of the Southeast Utah Association of Local Governments at 375 South Carbon Avenue. CCP was established by the County Commission members of the four SE Utah Counties, and three state and three federal land management agencies. CPRG will see you there!

The Uncompahgre Plateau and Unaweep Canyon

by John Weisheit

Introduction

The geologic chronology associated with the Uncompahgre Plateau indicates vigorous tectonic activity for over a third of the earth's history. The metamorphic rocks viewed within Westwater Canyon have a radiometric date of 1800 to 1400 million years. Besides this obvious record of tectonic activity in the Proterozoic Era, it has also experienced uplift in the Paleozoic, Mesozoic, and Cenozoic Eras. No other uplift on the Colorado Plateau seems to record such periodic sub-surface displacement.

Bisecting the Uncompahgre Plateau is an abandoned river gorge called Unaweep Canyon. It has been speculated that this canyon was cut by either the ancestral Colorado River or the Gunnison River. The abandonment of this ancestral canyon is suspect to renewed uplift of the Uncompahgre that occurred as little as 1 to 2 million years ago (mya).

Background

Presently, the Uncompahgre Plateau is a northwest-trending anticlinal uplift 25 to 30 miles wide and 95 miles long and is located in east central Utah and west central Colorado. The Colorado River traverses through it seeming to defy its structure. The metamorphic complexes of the Uncompahgre basement formed in the Proterozoic during a history of continental addition by colliding volcanic island arcs, stress-related folding, and subsequent mountain building. These Alp-like mountains eventually eroded to sea level well before the start of the Paleozoic Era. A period of intermittent deposition occurred on these rocks until the early Pennsylvanian Period, and the platform was again uplifted into a set of mountains referred to as the Ancestral Rocky Mountains. These mountains were the source materials for the Colorado Plateau's red-colored shales and sandstones such as: the Supai, Hlgaito, Hermit, Organ Rock, and the undifferentiated Cutler. These mountains were eroded to sea level by the early Triassic Period of the Mesozoic Era. With sea level equilibrium established, deposition started with the formation of the Chinle, which caps the metamorphic complexes, and is best observed today on the Colorado River at the head of Westwater Canyon. The Chinle formation is 220 million years old and the division between these two rock units chronicles at least 1200 million years of missing strata. This missing volume in the geologic library is called a "great unconformity".

Navajo sandstone, which is one of the most extensive formations on the Colorado Plateau, is also missing from the geologic stratigraphy of the Uncompahgre Plateau, and represents a missing chapter that is called an "unconformity". This would indicate a period of renewed uplift for the platform during the Jurassic Period; the Navajo was either

not deposited, or was eroded off the feature by consequent drainage. However, Entrada sandstone is present and indicates renewed deposition, and burial of the Uncompahgre Uplift probably until the Laramide orogeny. This famous tectonic event started about 80 million years ago and formed the present-day Rocky Mountains and the surface bulges of the Colorado Plateau -- sisters to the Uncompahgre with names like Monument, Zuni, and Defiance. About 65 mya, the Colorado Plateau area was uplifted from its sea level basin, by what is called an epeirogenic (crustal deformation) event, with an amazing vertical displacement of many thousands of feet.

Things changed in-and-around the Oligocene Epoch (38 to 26 mya) of the Cenozoic Era with extensional rifting breaking the highlands to the west and south of the Colorado Plateau area, and forming the Basin and Range Province. However, periods of uplift can even occur today on the Colorado Plateau. In the Pliocene Epoch (12 to 2 mya), the Kaibab Plateau, the Uncompahgre Plateau, and the Uinta Mountains indicate renewed uplift. If uplifting continued today, river systems on the Colorado Plateau would deepen their gorges.

Antecedence - Superposition - Anteposition

The term *antecedence* was described by John Wesley Powell in his report of 1875. This theory relates to the activity of rivers that cut perpendicularly through major uplifts such as: the Colorado River through the Uncompahgre, the San Rafael River traversing the Swell, and the San Juan River crossing the Monument Upwarp. Logic would dictate that a river would simply flow around an elevated land platform. Powell may have scratched his head and concluded these drainages were emplaced before uplifting, that the erosive forces of these rivers kept pace with the uplift, and resulted in their subsequent river gorges. This has been described as a saw (the river) working on a log (the uplift). In this scenario the saw remains in place and the force for cutting is applied by moving the log. What if this process were reversed? That is the log remains stationary and the saw moves. This theory was also described by Powell and is called *superposition*.

With superposition, the uplift occurred first and then the structure was buried by sediments. This could happen in a desert of wind blowing sand, in an oceanic delta, or in a continental lake. The river, suspended on the sediments that buried the uplift, will eventually erode into the structure from above. A good example of this scenario occurred recently on Lake Powell on the San Juan River Arm forming Paiute Falls. [See article by Gene Stevenson and Donald Baars in Issue I of *The Confluence*.]

Laramide structures were in place and receiving sedimentation in a Cretaceous Sea even before epeirogenic forces uplifted the entire area from its below sea level basin. This activity was progressive, working from the southwest towards the northeast. The subsequent tilt created a natural dam to contain run-off, forming a continental lake that prevailed for at least 45

Geologic History of the Colorado River

According to Hunt, 1969

[Tabular summary of the interpretation, much of it conjectural, presented in USGS Professional Paper 669C. Sequence within time intervals arranged with earliest event at bottom.]

Time interval and approximate age of boundaries (in millions of years)	Geographic regions			
	Basin and Range province	Colorado Plateau		Rocky Mountains Colorado and Gunnison Rivers above Grand Junction
		Southern section Below mouth of Green River	Northern section Green and upper Colorado Rivers	
0				
Quaternary	Colorado River canyon in Black Mountains deepened by renewed uplift (antecedence).	Grand Canyon of Colorado River deepened very little since mid-Pleistocene time. River in Grand Canyon within about 50 feet of present depth about 1.2 million years ago. Uplift and (or) northeast tilting of plateau probably continued intermittently throughout the Quaternary and probably is still continuing.	Canyons of Green and Yampa Rivers deepened about 500 feet.	Main river valleys and canyons deepened about 500 feet in glacial Pleistocene time; headwater stretches deepened 1,000-1,500 feet. Unaweep Canyon abandoned in late Pliocene or earliest Pleistocene time.
2	Colorado River discharges to Hualapai Lake and it overflows westward across Black Mountains. Limestone (Hualapai) deposited in fresh-water spring-fed lake centering at mouth of Colorado River canyon in Grand Wash Cliffs. Alluvial and playa beds (Muddy Creek Formation) deposited in Lake Mead area. Colorado River not there. Estuary along lower Colorado River (below The Needles) throughout much of Pliocene time.	Colorado River discharges at mouth of Grand Canyon. Ancestral Colorado River joins the Little Colorado and San Juan Rivers; overflows through arched ancestral Grand Canyon. Uplift and northeast tilting of plateau probably continued intermittently throughout the Pliocene. Renewed uplift at Kaibab Plateau ponds ancestral Colorado and Little Colorado Rivers; begin deposition of Bidahochi Formation (earliest Pliocene). Ancestral drainage, ponded at Peach Springs, discharged at Grand Wash Cliffs as big springs fed by pipes enlarged in the now cavernous limestone formations dipping down axis of present lower Granite Gorge.	Renewed uplift at Uinta Mountains (or downfaulting of adjoining basins) deepens the canyons by perhaps 1,000 feet (antecedence). Green and Yampa Rivers superimposed in southward courses across the Uinta Mountains, probably when the mountains were structurally lower relative to adjacent basins than now and were buried by Browns Park Formation. This superposition probably took place in early Pliocene time, perhaps in the late Miocene.	Canyons of the Colorado River through uplifted blocks such as the Gore Range or White River Plateau deepened 2,000-3,000 feet during Pliocene time (antecedence); Black Canyon of the Gunnison River. Colorado and Gunnison Rivers cross Uncompaggre Plateau and cut Unaweep Canyon.
12	Estuary along lower Colorado River (below The Needles); Colorado River apparently flowed into it by way of canyon at Peach Springs, Ariz. Accumulation of lavas, dated radiometrically at 16-17 million years old, in gap at Kingman, Ariz., between Hualapai and Cerbat Mountains; the gap may be segment of canyon at Peach Springs, Ariz., faulted off plateau. Deposition of alluvial and playa beds, lower part of Muddy Creek Formation(?), in Lake Mead area; most movement along faults near Grand Wash Cliffs by middle Miocene time.	Canyon at Peach Springs partly filled with deposits dated radiometrically at about 18.3 million years old; renewed uplift at Kaibab Plateau. Gravel deposits on Kaibito Plateau, derived in part from San Juan Mountains, indicate that by late Miocene time, San Juan River flowed across Monument upwarp to within 80 miles of Grand Canyon; probably crossed ancestral Kaibab uplift in canyon and joined ancestral Little Colorado River west of there. By middle Miocene time the Little Colorado River had course south of Kaibab upwarp and left plateau by way of canyon near Peach Springs, Ariz. Plateau uplifted and tilted northeastward intermittently throughout the Miocene.	Doming of laccolithic mountains by intrusions about 25 million years ago caused drainage to be diverted around mountains (La Sal, Ute, Henry, Abajo, Navajo Mountains). White River follows a westward, essentially consequent course down axis of Uinta basin. Ancestral Green and Yampa Rivers discharge into Wyoming basin north of Uinta Mountains. Northern part of main Colorado River drainage is assumed to have ended in playas in Henry Mountains and (or) Kaiparowits basins.	Present course of main stem of Colorado River largely established by overflowing structural barriers by end of Miocene time; Gunnison River superimposed across Precambrian rocks at Black Canyon. Headward part of Colorado River disrupted by formation of structural basins at head of Yampa River, near State Bridge, and in Middle Park; and by uplift of White River Plateau and Gore Range. Ancestral Colorado River continues consequent westward course to Uinta basin; continued outpouring of lava in Gunnison River valley.
26	Breakup of highlands into basins and ranges, block faulting; probably faulting began at Grand Wash and at the basins downstream along the Colorado River.	Plateau continues to be uplifted and tilted northeast; San Juan River basin probably overflowed west; drainage history obscure because datable deposits are scarce; probably playas in Henry Mountains and Kaiparowits basins.	Plateau tilted northeast. Filling of playa exceeds rate of tilting, and Uinta basin overflows southward; ancestral Green and Yampa Rivers ponded in Wyoming basin. Lakes filled and converted to playas.	Gunnison River valley tilted eastward and begins to fill with volcanic rocks. Ancestral Colorado River had consequent course at about the position of present White River to Uinta basin; ancestral Gunnison River valley eroded into Precambrian rocks.
38 Eocene and Paleocene	Highlands draining eastward and northeastward; folding, faulting.	Plateau uplifted and tilted northeast; drainage probably northward to lakes because of northward tilting.	Area low lying, close to sea level; large lakes (Flagstaff and Green-river Lakes).	Consequent streams flowing west supplied sediment to lakes.
65 Cretaceous	Highlands draining eastward and northeastward.	Flooded by seas.	Flooded by seas.	Flooded by seas.

million years; more than enough time to continue the burial of Laramide structures. Due to the breakup of the highlands from extensional rifting, the lake began to drain, forming rivers which started to incise themselves into lake sediments, often forming the river meanders that are with us to this day. These rivers, entrenched as they were, eventually cut down into the buried Laramide structures and created our scenic canyons.

Powell favored antecedence, but many geologists have favored superposition; some a combination of the two, which is called *anteposition* and described by Charles B. Hunt in 1956. *Anteposition* is explained as an already existing river that has superimposed itself into a structure; the structure later renews its uplift, and the river cuts a deeper gorge by antecedence. This has occurred on structures such as the Kaibab Plateau and resulted in the deepening of Marble and Grand Canyons by many thousands of feet. However, in Unaweep Canyon, *anteposition* occurred for awhile until another geologic force known as *stream capture* developed. Powell's USGS associate, Grove K. Gilbert, defined *stream capture* well:

"A stream which for any reason is able to corrode its bottom more rapidly than do its neighbors, expands its valley at their expense, and eventually 'abstracts' them. And conversely, a stream which for any reason is able to corrode its bottom less rapidly than its neighbor, has its valley contracted by their encroachments and is eventually 'abstracted' by one or the other."

Unaweep Canyon

Evidence indicates an ancestral river superimposed itself into the Uncompahgre Uplift and formed the canyon we call Unaweep. However, at some point in time, this canyon was abandoned by *stream capture*. As on the Kaibab Plateau, *anteposition* should have occurred, but didn't due to differences in the hardness of the rock. An appropriate metaphor is that "water takes the course of least resistance." Well before the time of the renewed uplift for the Uncompahgre Uplift, the ancestral river in Unaweep Canyon had cut into the very hard metamorphic complexes of the Uncompahgre. The rate of renewed uplift that occurred 1 to 2 mya, was greater than what the river could cut by *anteposition*, and so the river began to pool before the structure.

It has been proposed that both the Colorado and the Gunnison rivers met at a confluence upstream of the Uncompahgre Uplift and that the combined flow traveled through Unaweep Canyon. This theory has recently lost support. It is now believed that the Colorado River has basically maintained its present course; that the Gunnison River flowed through Unaweep Canyon; and the confluence was downstream of Unaweep Canyon. So, the Colorado River maintained its valley while the Gunnison became stagnant, pooling before the raising Uncompahgre. Eventually, that lake over-spilled into the Colorado River; finding an easier channel to corrode in rocks that were softer than those of Unaweep Canyon. With the Colorado River maintaining its

channel as the master stream, the Gunnison was captured above the Uncompahgre. With this piracy, the Colorado River increased its flow and either superimposed itself into the Uncompahgre or was able to keep up with the rate of uplift and maintained its course through antecedence, or both, which again is defined as *anteposition*.

The Colorado River of the Future

Westwater Canyon begins at Mile 124.3 with metamorphic bedrock riffles. Just before these riffles, the river is abraided into four channels over gravels that are held in repose. Also, one mile upstream, there is an extensive flood plain the river has eroded into -- leaving a steep cut-bank. Could these features indicate renewed uplift of the Uncompahgre in very recent geological times? Did the Colorado River momentarily pool before the uplift to deposit this fluvial plain? Did *anteposition* pace itself with the uplift, so that the Colorado River maintained its course through Westwater Canyon? Will uplifting someday exceed *anteposition*, so that the Colorado River will abandon Westwater Canyon, flood the Cisco Desert and over-spill into Cottonwood Wash? Such questions help us to realize that our planet's clockwork is ever ticking.

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RECYCLE?

by Susette DeCoster-Weisheit

Do you recycle? Do you recycle while on the river? Does your river office recycle? Is recycling the answer? These are questions to contemplate as we enjoy the winter. Recycling has become fashionable, has become the law in some places, and has even been preached as duty. However, we must go beyond fashion, law, or duty to understand the responsibility of recycling.

Convenience has taught our parents generation, and our generation, to be wasteful; such habits have been established into our very lifestyles. Ever heard of preventative medicine? We can limit much of the process and responsibility of recycling by non-use. Non-use is going one step back and changing wasteful habits. Asking yourself if the products you are using are a necessity for the home, office, or river (paper plates, plastic forks, drinks sold in plastic, etc.). Are they really just convenient? On the river, and even in our homes, it is often because of convenience we use products that either cannot or must be recycled. But, at what expense to our convenience? This brings us back to the understanding of responsibility. If you help to create the problem don't you think it is your responsibility to help reduce its growth?

Did you know...

- * The lifetime garbage of the typical American will equal at least 600 times his or her adult weight.
- * Throwing away an aluminum beverage container wastes as much energy as dumping a soda can half-filled with gasoline.
- * The energy saved from recycling a glass bottle will light a 100 watt bulb for hours.
- * The energy saved from each recycled aluminum can will operate a television set for 3 hours.
- * Two weeks of daily newspapers equals one full grown tree.
- * Glass produced from recycled glass instead of raw material reduces related air pollution by 20 percent and water pollution by 50 percent.
- * In the U.S. almost one ton of solid waste per person is collected annually from residential, commercial and institutional sources. At the present rate of disposal, about 500 new dumping locations must be found each year.
- * Americans use 50 million tons of paper each year, consuming over 850 million trees.
- * Recycling half of the paper used throughout the world today would free 20 million acres of forest land from paper production.
- * One person uses and discards 2 pine trees in paper products each year.
- * Americans comprise about 5 percent of the world's population, and annually produce between 15 and 38 percent of the world's garbage.

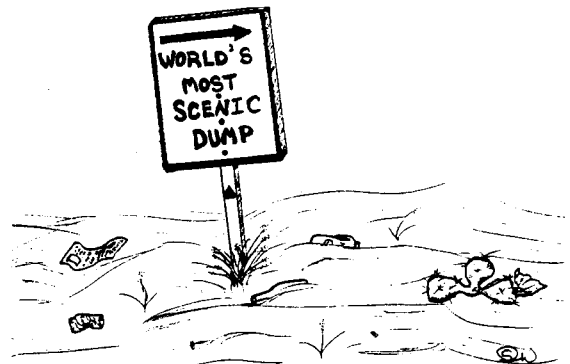
With these facts digested, we can considered the problems created. In our generation of plastic wrappers and multiple packaging, it is often difficult not to be wasteful. Can you change the whole system? Probably not.

However, each individual can help the evolution of such a change by altering their own habits, thus limiting industry demands. Most of us want to aid in reducing environmental deterioration -- and want to contribute to a changing lifestyle -- so we recycle. There are three steps to change habits: non-use, re-use, and recycle.

There are different types of recyclable materials: aluminum cans, glass, tin, paper, cardboard, and plastic. Grand County Recycling (GCR), will not take plastic at this time; however, they will soon be taking plastic milk jugs on an experimental basis. There are some guidelines for recycling both tin and paper, but both can be dealt with easily. Tin needs to be rinsed and smashed flat, of course if you're on the river, you would probably do this anyhow to cut down on smell and trash size. Paper needs to be separated into newsprint and white paper (currently glossy paper is not excepted for recycling and must be thrown in the trash). Cardboard boxes need to be flattened for easy transportation and storage.

In your home, it is easy to recycle with cardboard boxes, paper grocery bags, or trash barrels depending on available space. If you live in a small neighborhood, trailer court, or apartment complex it may be easier to establish a group recycling area. More often than not, even those of us who do recycle faithfully in the home, find it difficult in the office or on the river. To recycle in the office there are several people that have to be taught separation and have to be encouraged regularly. This may seem bothersome unless we explain the effectiveness of recycling, and further encourage these people to recycle in their homes as well. On the river, burlap sacks or rice bags provide an excellent recycling system. The bags provide a compact system for transportation, and are easy to set on the beach at camp for use by all. By encouraging trip participants to separate their trash, an education on environmental ethics is established that will hopefully be carried back to the participants home.

One of the complaints often heard at the river office and warehouse is: that recyclable materials pile-up and are not transported to the recycling center. If the river company does not have a person that can be assigned to the duty, GCR will provide a pick-up service. The cost of each pick-up is \$2.30 and \$.10 per minute while on the premises. Pick-ups can be arranged bi-weekly, or monthly, by calling GCR at 259-8640. Not only is recycling easy, but doing so helps counteract a part of your contribution to a growing problem. We don't need to save the world, we need to save ourselves from the problems we create.



Book Review

Raven's Exile:
A Season On the Green River

by Ellen Meloy

"Each summer, Meloy, a freelance writer, and her husband, a river ranger with the U.S. Bureau of Land Management, raft Utah's Green River through the 84 mile long gorge at Desolation Canyon. In this scintillating account of one season on the river, she uses rich and sensuous language to convey the breathtaking beauty of the region - the play of color and light on steep canyon walls, the force of spring windstorms and the mystery of abandoned Indian granaries. Although Desolation Canyon is relatively unspoiled the threat of human meddling is ever present; Meloy considers ravens, wily birds whose absence from Desolation Canyon she has never been able to explain and which became a symbol of everything that is, and should remain, beyond human comprehension and control. This paean to the beauty of desert wilderness includes the author's drawings of ancient petroglyphs found on the canyon walls." Publishers Weekly.

Ellen Meloy is a writer, artist, and river ranger. She has contributed to Outside, Men's Journal, Travel and Leisure, Utne Reader, Harper's, and the anthology, Montana Spaces. She lives in Montana and Utah. This is her first book. Cost: \$22.50. For further information, contact Ruth Weiner at (212) 886-9271.

The Last Page and the Last Column
Poetry by Bessie Haley-Hyde

Impatient Waves

Sometimes:

Impatient waves

Break too far out.

And come to shore -- Unnoticed.

The Model

*The model sat mid cherub clothes
And thought about her many beaux
The party where she'd go that night
With cocktails, jazz and blazing light.*

*The artist stopped in deep despair
And almost tore his graying hair
How could he paint an angel's face
From a girl who thought of a dancing place?*

Fall Frost

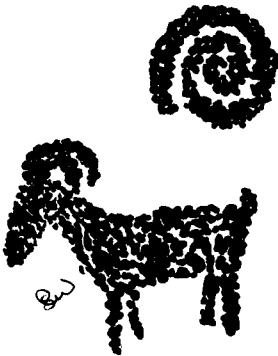
The first fall frost
In shining silver
Comes at night.

And soon beguiles
The fluttering trees
With jewels.

At dawn ...
The barren ground
Is carpeted with brown,
Who can no longer whisper
Soft, low songs;
For they --
Are dead.

[Courtesy of the Marston Collection, Huntington Library.]

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