The Confluence

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We do have a history of rethinking our water management policies. For years Moab locals dumped their old cars and large scrap metal on the north side of the Colorado River near the mouth of Courthouse Wash. Eventually, bulldozer crews would push the waste into the Colorado River; circa 1937.

From the Verlyn Westwood Collection; Dan O'Laurie Canyon Country Museum; Photo 30-36.

The Confluence

...wants to be the quarterly journal of Colorado Plateau River Guides, Inc. (CPRG), which is a member of a 501 (c) (3) non-profit organization called Canyon Country Volunteers. CPRG is dedicated to:

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

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We need articles, oral histories, poetry, stories, and opinions. This journal is composed using Microsoft Publisher. If you use a word processor, we can translate most programs. Otherwise, please send your text typed. Please include useful photos, charts, diagrams and artwork. There really is no deadline, but the beginning of each quarter works best.

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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 Colorado Plateau River Guides, nor Canyon Country Volunteers. This forum is open with no restrictions at the present time. If you have an opposing or supporting viewpoint please send your comments to CPRG.

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SPECIAL ISSUE: "Rethinking Western Water"

This issue is dedicated to the 1998 theme of "Desert Waters Rendezvous," as conducted by Canyonlands Field Institute. This river education seminar was coordinated by Tom Corcoran of Canyonlands Institute, Tom Hicks of the Headwaters Institute, and Steve Young of Colorado Plateau River Guides. The three-day event started on a Friday evening, April 17, at the Moab Arts and Recreation Center (MARC) with a public forum moderated by Dr. Rich Valdez, an aquatic ecologist. The discussion considered the citizens proposal to drain Reservoir Powell. The opponent to the proposal was Mr. Larry Anderson of the Utah Division of Water Resources and the proponent for the proposal was Mr. David Wegner, a trustee of Glen Canyon Institute—an organization dedicated to the restoration of a free-flowing Colorado River through Glen Canyon.

Other faculty members for Saturday's field event on the Moab Daily (Colorado River) included: Robert Lippman, environmental law; Roy Webb and John Weisheit, historians of federal reclamation in the lower and upper basins; Suzanne Flory, a water education coordinator for the state of Utah; and Tom Chart and Melissa Trammel, aquatic ecologists for the state of Utah.

Sunday's event included a slide presentation by noted author Tim Palmer, and a discussion of leadership skills with Bob Bond.

The presentations by most of these members are included in the following pages of **The Confluence.**

SPECIAL THANKS TO:

Catherine Cowles for a Lifetime Membership
Pat Grediagin for a Six-year Membership
Marty Shelp for a Six-year Membership
Annie Tueller for a Six year Membership
Steve Swanke for a Six-year Membership
Deborah Shank for a Six-year Membership
Don and Denise Oblak for a Six-year Membership

The Colorado River

Utah's Perspective

by Larry Anderson, Director
Utah Division of Water Resources

The steep and turbulent Colorado River falls more than 12,000 feet as it flows from the Rocky Mountains in Colorado and Wyoming to its natural outlet in the Gulf of California. The river has a huge drainage basin that covers over 244,000 square miles; it is 1,440 miles long and passes through parts of seven states and Mexico. The seven states are referred to as the Colorado River Basin states and comprise about one-twelfth of the area of the continental United States. Despite the size of the watershed, the Colorado River ranks only sixth among the nation's rivers in volume of flow with an average annual undepleted flow in excess of 17.5 million acre-feet (maf) (15 maf at Lee Ferry, the compact division point). In comparison, the Columbia River's drainage is about the same size, but its flow is about 12 times greater.

Demands on the Colorado River are not limited to needs within the basin. In fact, more water is exported from the basin than from any other river in the country. The Colorado River provides municipal and industrial water for more than 24 million people living in the major metropolitan areas of Los Angeles, Phoenix, Las Vegas, Salt Lake City, Denver, San Diego, and hundreds of other communities in the seven states. It also provides irrigation water to more than 1.8 million acres of land. The river has more than 60 maf of storage capacity, 4,000 megawatts of hydroelectric generating capacity, and provides more than 20 million annual visitor days of outdoor recreation

Law of the River

Because of the critical role of water to all social and economic activity in the arid west the Colorado River has been the subject of extensive negotiations and litigation. From this has developed a complex set of federal laws, compacts, court decisions, treaties, state laws and other agreements collectively known as "The Law of the River. The principal historical documents forming the "Law of the River" include:

- Colorado River Compact of 1922
- Boulder Canyon Project Act of 1928
- Mexican Treaty of 1944
- Upper Colorado River Basin Compact of 1948
- Colorado River Storage Project Act of 1956
- Supreme Court Arizona v. California decision (1963)
- Colorado River Basin Project Act of 1968
- Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs of 1970
- Minute 242 of the 1973 International Boundary and Water Commission
- Colorado River Basin Salinity Control Act of 1974
- The Grand Canyon Protection Act of 1992.
-

Dividing the River

The Colorado River is often described as the most regulated river in the world. Considering its importance to the basin states, Native American Indian Tribes, and Mexico, it is surprising any agreement has been reached to divide the river's water.

In the late 1800s and early 1900s, a sizable agricultural development emerged in California's Imperial Valley. Water was delivered to the valley from the Colorado River through a canal that went through Mexico. Mexico allowed Imperial Valley farmers to use the channel in exchange for a portion of the water. American farmers were unhappy with the Mexican government controlling their water supply from the river, and they began to push for the construction of a new canal built entirely within the United States, an "All American" canal. Disastrous flooding occurred in 1905 along the Colorado River. The river broke through a temporary diversion through the riverbank, and for two years the entire flow of the river poured into the Imperial Valley before it could be diverted back to the river channel. The flooding destroyed homes and thousands of acres of agricultural land, filling a natural depression known as the Salton Sink and creating today's Salton Sea. As additional flooding occurred in 1910 and the Mexican Revolution began, pressure intensified to construct an All-American canal to bring Colorado River water to the valley and build a flood control dam and storage reservoir on the lower mainstem Colorado River. In addition, Los Angeles was interested in developing hydroelectric power to meet the needs of its growing population.

California realized construction of a project to harness the river would require the federal government's assistance, which would raise legal and political issues. The other six basin states did not oppose structural control of the river, but were determined to resist a project for California unless they received satisfactory assurance of their future use of the river's water. Such use by California, they feared, would establish appropriative claims to the water (first in time, first in right), and would prejudice the equity of any future apportionment of the Colorado River among the states. The solution appeared to be the development of an interstate compact between the basin states that would detail the division of the water in the Colorado River.

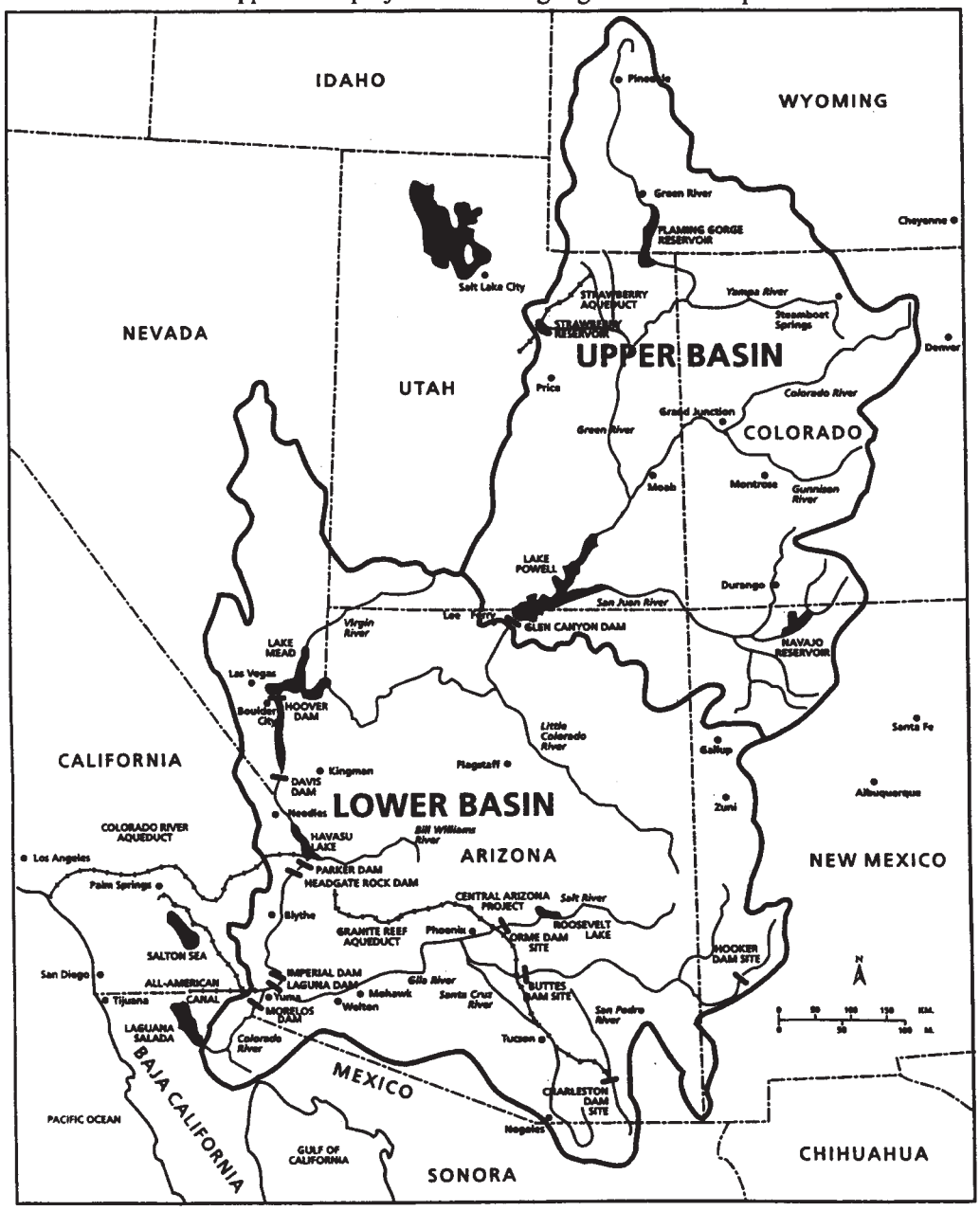
1922 Colorado River Compact

Compact discussions began on January 26, 1922, and on November 24, 1922, basin state and federal government compact negotiators approved the Colorado River Compact. The compact split the river system into an Upper Basin—Arizona, Colorado, New Mexico, Wyoming and Utah—and a Lower Basin—Arizona, California, Nevada, New Mexico and Utah—and partitioned the rights to the water between Lower and Upper basins. The dividing line and measuring point was at Lee Ferry, approximately 17 miles below Glen Canyon Dam. The compact apportioned from the Colorado River, in perpetuity to the Upper and Lower basins, the exclusive, beneficial consumptive use of 7.5 maf of water per annum. The Upper Basin agreed to guarantee the Lower Basin apportionment of 7.5 M acre-ft. per annum; in addition, the Lower Basin received the right to increase its annual beneficial consumptive use of water by 1.0 M acre-ft.

Even though the compact negotiators were unsuccessful in their attempt to divide the water between the individual states as originally intended, the compact reduced the upper Division

Map of the Colorado River System

Upper basin projects are not highlighted in this map.



states' concern that the faster-growing Lower Division states would monopolize use of the Colorado River. The compact set aside the prior appropriation doctrine of "first in time, first in right" and allowed each basin to develop its apportioned water as needed without fear of losing it through non-use. The compact side-stepped quantification of Indian water rights.

The Arizona legislature, in contrast to other basin states, refused to ratify the compact because it felt the compact left Arizona unprotected against rapid development in California. Arizona also opposed, including tributary water (specifically the Gila River) in the compacts apportionment. Because of Arizona's refusal to approve the compact, Congress did not ratify it until 1928 when the Boulder Canyon Project Act was passed. The act allowed the compact to become law with the approval of six states and the enactment by California of a statute limiting its use of Colorado River water. Arizona finally ratified the compact in 1944. The California Self Limitation Act was passed March 4, 1929. It provides that, ...

"the State of California agrees irrevocably and unconditionally with the United States and for the benefit of the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming as an express covenant and in consideration of the passage of the said 'Boulder canyon project act' that the aggregate annual consumptive use of water of and from the Colorado river for use in the State of California... shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin states by paragraph 'a' of article three of the said Colorado river compact plus not more than one-half of any excess or surplus waters unapportioned by said compact..."

For clarity, the 1922 Colorado River Compact says the term "states of the Upper Division" means the states of Colorado, New Mexico, Utah, and Wyoming, and the term "states of the Lower Division" means the states of Arizona, California, and Nevada. It further says the term "Upper Basin" means those parts of the states of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters naturally drain into the Colorado River system above Lee Ferry. The term "Lower Basin" means those parts of the states of Arizona, California, Nevada, New Mexico and Utah within and from which waters naturally drain into the Colorado River system below Lee Ferry.

Water for Mexico

The last 75 miles of the Colorado River is in Mexico, where the water is used for irrigation. Mexico's share of the Colorado River is determined under provisions of a treaty signed in 1944. The treaty guarantees Mexico 1.5 maf, to be increased in years of surplus to 1.7 maf and reduced in years of extraordinary drought in proportion to the reduction of consumptive uses in the United States.

No mention was made in the treaty about water quality, but a subsequent agreement between the United States and Mexico, called "Minute 242, International Boundary and Water Commission, September 4, 1973," contains a provision guaranteeing Mexico relatively clean water.

The water delivered at the international boundary must have an average annual salinity of no more than 115 (± 30) ppm over the salinity of water that arrives at Imperial Dam. In 1974 the Salinity Control Act was passed authorizing the

use of federal funds to help control salinity in the Colorado River. Title I of the act authorized construction of a desalination plant near Yuma, Arizona, to desalt 80,000 acre-feet of return irrigation flows from farmers in Welton Mohawk Irrigation District prior to the water being diverted by Mexico. The desalting plant was completed in 1992 at a cost of $250 million. Because of the high annual operating cost of over $25 million, the plant is not being operated at the present time. Title 11 of the act and subsequent amendments authorized federal agencies to cost share with state and local organizations for the construction of projects, mostly in the Upper Basin, to control the salinity of the river by decreasing the amount of salt entering the river. One of the projects in Utah funded by the program is the Uinta Basin Salinity Control Project, where the irrigation efficiency on approximately 94,000 acres of farm land has been improved by implementing land leveling, border irrigation or converting from flood to sprinkler irrigation practices. This has resulted in the reduction of over 84,000 tons/year of salt entering the Colorado River.

Upper Colorado River Basin Compact

Formal negotiations on an Upper Basin Compact were initiated on July 31, 1946. They were prompted by the desire of the states to continue water development in the Upper Basin which had been put on hold in 1941 by wartime restrictions. The Upper Basin states wanted to construct a major federal project, but federal funding was contingent on an Upper Basin Compact. On October 11, 1948, the Upper Basin states entered into the Upper Colorado River Basin Compact to apportion allowable depletions between the states. The four Upper Division states were uncertain how much water would remain after they met their Colorado River Compact requirement to deliver the Lower Basin 7.5 maf per annum and how the Mexican Treaty obligation might affect the available water supply. So they apportioned the remaining water as follows:

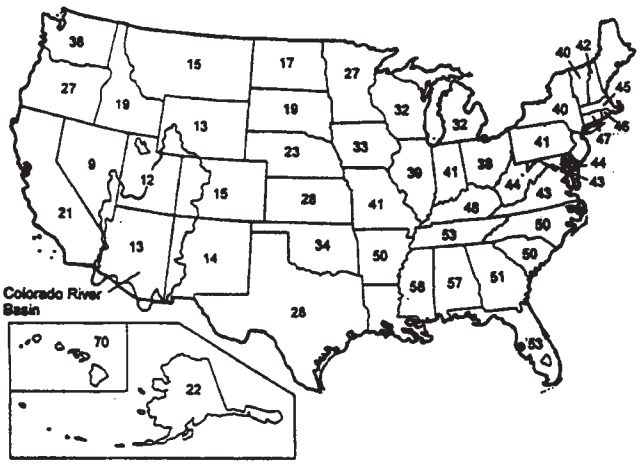
> Colorado-51.75%; New Mexico-11.25%; Utah-23%; Wyoming-14%; Arizona-50,000 acre-feet (Deducted prior to calculating other state shares.)

The Upper Basin Compact gave the states the final protection they needed in order to develop and use their water gradually, without fear of losing it through non-use.

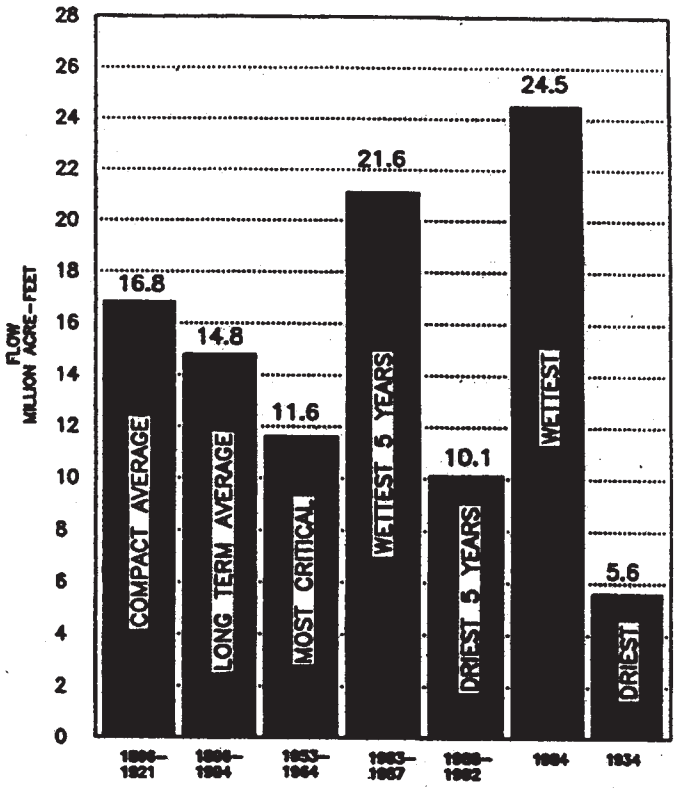
Problems with the "Law of the River"

Although the "Law of the River" established the basic water entitlements of the basin states and Mexico, problems still exist. The Colorado River Compact was negotiated during a time of abundant precipitation; the river's annual average flow (1896-1921) at Lee Ferry was thought to be about 17 maf. Today, based on 1896-1991 flows, that figure is estimated to be 15 maf per year. Looking longer term (1564-1960), studies of tree rings by the University of Arizona professors estimate the average flow of the river could be as low as 13.5 maf. Unfortunately, the Colorado River Compact of 1922 was based on recorded flows which produced the highest long-term average in the history of the river. The basin states now agree the compact was negotiated during a period of high water supply. Using the most recent stream flow data, and subtracting the compact and treaty guaranteed annual apportionments to the Lower Basin of 7.5 maf and Mexico of 1.5 maf, and recognizing the impact of sustained drought periods, the Upper Basin is left with an estimated dependable supply of 6.0 maf. Utah's allocated share is reduced from 1.7 maf, based on the Colorado River Compact allocation of 7.5 maf to the Upper Basin, to approximately 1.4 maf.

1961-1990 State Precipitation



Average Annual Colorado River Flow at Lee Ferry for Selected Periods



Boulder Canyon Project Act

Even though Arizona refused to ratify the Colorado River Compact until 1944, it became law in 1929 with the passage of the Boulder Canyon Project Act. This act authorized construction of the All-American Canal, Hoover Dam and power plant and gave Arizona, California and Nevada the option of developing a Lower Basin Compact to divide their Colorado River Compact apportionment. The Lower Division states were never able to agree on the division of the water, and the final apportionment was not decided until the Supreme Court ruled in Arizona v. California in 1963.

Arizona v. California

In 1963 after 11 years of legal battles, the U.S. Supreme Court in its decision in Arizona v. California, confirmed the 1928 Boulder Canyon Project Act Lower Division apportionment of main stem Colorado River as follows:

California — 4.4 maf and 50 percent of all surplus;
Arizona — 2.8 maf and 46 percent of all surplus and
Nevada — 300,000 acre-feet and 4 % of all surplus.

The court also held that Arizona's use of the Gila River and its tributaries would not reduce its entitlement of 2.8 M acre-feet from the main stem Colorado River.

The 1908 Winters v. United States Supreme Court decision established the doctrine of Indian reserved water rights. The courts held that such rights existed whether or not the tribes were using the water. This decision was reaffirmed by the court in Arizona v. California when the court awarded water rights to five Indian reservations in the Lower Basin. The court determined the only feasible way the tribe's reserved water rights could be measured was on the amount of "practicably irrigated acreage" on the reservations.

Utah's Current Use of Colorado River Water

Even though Utah is considered an Upper Basin state, portions of the state lie within the Upper and Lower basins. The majority of the eastern half of the state is in the Upper Basin, while the Virgin River and Kanab Creek drainage, located in the southwestern (Washington and Kane counties) part of the state, are in the Lower Basin.

Upper Basin

The Colorado River enters Utah just west of Grand Junction, Colorado, but few diversions are made in Utah directly from the river. The greatest use in Utah is from the Duchesne River system in the Uinta Basin. Lesser amounts of water are diverted from the Price, San Rafael, Dirty Devil, Escalante, and San Juan river systems. Water is also exported from the basin to the Wasatch Front by the Central Utah Project, Provo River Project, Strawberry Project, and several other smaller diversions. Table I shows the current and projected uses of Upper Basin compact water in Utah.

Lower Basin

The majority of Utah's use of water in the Lower Basin is from the Virgin River drainage. The Virgin River is a non-compacted interstate stream originating in Utah that passes through Arizona and Nevada before entering the main stem Colorado River at Lake Mead. According to the Court Decree in Arizona v California, the Boulder Canyon Project Act left tributaries (which include Kanab Creek and the Virgin River in Utah) to the exclusive use of the state in which they arise. The state of Utah believes it has the right to develop and use flows of Kanab Creek and the Virgin River to meet the needs of the area.

Agriculture is the largest user of water from Kanab Creek and the Virgin River drainage in Utah. But municipal and industrial uses are expected to increase five fold in the next 50 years, exceeding the use of agriculture. Table 2 shows the current and projected uses of water in the Lower Basin of Utah.

Projected Uses of Colorado River Water in Utah

Upper Basin

Utah will have about 300,000 acre-feet of undeveloped Colorado River water available for future use in the year 2020. During the energy crisis in the late 1970s, oil shale development in the Uinta Basin seemed imminent, and many observers believed such development would use much of the state's remaining Colorado River water. By the early 1980s it became apparent that such development was not economically feasible, and would likely remain infeasible for many years. The Central Utah Project (CUP) probably will be the last large water development project in Utah funded by the federal government. Additional development of thermal power may take place at existing plants in Emery and Uintah counties, and additional municipal, industry, and agricultural water development will occur. With the passage of P.L. 102-575 by Congress in 1992, the CUP Completion Act became law. Ute Indian reserved water rights, quantified as part of the act, will become law with the ratification of the compact by the tribe and state. The tribe will receive an additional 100,000 acre-feet of water if the compact is ratified.

Lower Basin

The Virgin River Basin of Utah, the fastest growing area in the state, is expected to grow at double the state's average over the next 20-30 years. With the increased population and related industrial growth, municipal, industry, and secondary water depletions, will increase from 21,000 acre-feet per year to over 96,000 acre-feet per year by the year 2040.

Unresolved Issues

The Colorado River Basin states began dividing up the water in the Colorado River about 75 years ago. Even though states and federal agencies have been able to work together to resolve many difficult issues, new controversies develop and old issues still exist.

Unresolved Issues in Utah

1. How will Utah use its remaining Colorado River Compact allocation?
2. How do we keep Lake Powell as full as possible for recreation users and meet the increasing demands for water in the Upper and Lower basins?

3. How will we meet the future needs for water in the Virgin River Basin?
4. How will the reserved water right claims of the Utes, Navajos, and Shivwits Indian tribes be resolved and what will be the impact on existing uses?

Unresolved Basin-wide Issues

1. How will the increasing water needs of the Las Vegas, Nevada, area be met?
2. Will the Metropolitan Water District of Southern California be able to acquire enough water to keep its aqueduct full?
3. Will the basin states agree on a "surplus water" declaration where the additional "risk" to the Upper Basin states will be assumed by the Lower Basin?
4. How will the Bureau of Reclamation meet federally approved water quality requirements for Colorado River water delivered to Mexico?
5. How will the Endangered Species Act and other restrictive federal legislation affect the current and projected uses of water in the basin?
6. How will the federal reserved water rights in the basin (Indians, national parks, monuments, etc.) be quantified, and what effect will the quantification have on state allocations?
7. Will the basin states and Indian tribes reach agreement on the interstate marketing and transfer of water?

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Table 1
Utah's Upper Colorado River Basin
Projected Depletions
(Units in 1,000 acre-feet per year)

	1990	2020	2050
Agriculture/Stock	496	555	573
Municipal, Domestic	24	41	57
Mineral/Energy	8	8	64
Power/Industrial	45	51	56
Indian settlements	--	50	100
Existing exports	157	237	237
New exports	--	25	65
Total depletions	730	967	1,152
Evaporation storage units	120	120	120
Total	**850**	**1,087**	**1,272**
State share - 6.0 M acre-ft. yield	1,369	1,369	1,369
Remaining water available	519	282	97

Source: Utah Division of Water Resources, December 1996

Table 2
Utah's Lower Colorado River Basin
Projected Depletions
(Units in acre-feet per year)

	1990	2040
Municipal and Industrial	10,600	51,300
Secondary (lawn and garden)	11,200	45,500
Agriculture/Stock	51,300	37,600
Exports (to New Castle area)	2,600	2,600
Reservoir evaporation	5,300	8,400
Shivwits Paiute Indian Band	300	Unknown
Total Depletion	**81,300**	**145,400**

Source: Utah Division of Water Resources, August 1993

STATE OF UTAH
NATURAL RESOURCES
Division of Water Resources

Draining Reservoir Powell How Will It Impact Utah?

by Larry Anderson, Director, Water Resources

Thank you for inviting me to participate in this panel discussion. I am happy to discuss the merits of Glen Canyon Dam and Reservoir, as well as provide information on how draining Lake Powell will impact all who live in the Colorado River Basin. Much of the information I will share with you comes from the written comments submitted at the congressional oversight hearing this past September and information we have developed.

Many of us who work with the Colorado River felt the proposal made in November of 1996 by the Sierra Club and Glen Canyon Institute to drain Lake Powell was so far out in left field that it did not deserve a serious response, especially in light of the potential devastating impacts to the environment, recreation users, endangered species, water and power supplies and the local and regional economies.

Historical Background

The Colorado River has been described as one of the most regulated rivers in the world. With the rapid development of the desert southwest in the early 1900s it became evident that a water development program was necessary on the Colorado River, in an effort to control the erratic water supply and provide flood control protection. This need led to the development of a set of federal laws, compacts, court decisions, treaties, state laws, and other agreements known as "The Law of the River".

The process of dividing the river began over 75 years ago and is the product of two interstate compacts, a U. S. Supreme Court decree and a treaty with Mexico. Through this process the plans were laid in place of how the Colorado River was to be developed. In 1956 Congress passed the Colorado River Storage Project Act (CRSP) authorizing the construction of several projects including Glen Canyon Dam and Reservoir. Before Congress ever authorized the CRSP Act there was considerable debate and discussion on what was needed to control the Colorado River and allow the Upper Basin States to meet their Lower Basin water delivery requirements and still be able to develop and put to use their allocation of Colorado River water. In addition conservation groups (including David Brower, then president of the Sierra Club), water users, federal agencies and congress negotiated an agreement for the construction of Glen Canyon Dam and Reservoir. With the variation in the natural flows of the Colorado River and the basin wide demand for water, Lake Powell provides the long term carryover storage necessary for Upper Basin States to meet the water deliveries required to the Lower Basin by the "Law of the River".

Impacts of Draining, Lake Powell

From information presented at the Congressional hearing by the Basin States, federal agencies, tribes, power users, recreation and water users, the following impacts of draining Lake Powell have been identified.

Recreation Opportunities Lost

- Almost 3-million people annually visit Glen Canyon National Recreation Area; Powell draws the vast majority of these visitors; without it visitation would be minimal.
- About one-half million boating days are logged annually at Lake Powell. Draining the lake would provide more "wild river" for river runners, but the number of new opportunities would pale compared to the boating days that would be lost.
- About 30,000 angler-days are spent annually on the blue ribbon trout fishery below Glen Canyon Dam. That fishery, those days, and the warm-water angler-days on the lake itself, would be lost.
- The trade-off for draining Lake Powell would be a loss of recreation opportunities for millions of people in exchange for a different type of recreation (river running) for a few thousand.

Economic Impacts

- Visitation to the Glen Canyon National Recreation Area, including boat rental at the lake and the fishing activity below the dam, is estimated to generate in excess of $400 million per year to local and regional economies—the vast majority of this would be lost.
- Some 2,000 private boats are berthed at Lake Powell. By federal law the vast majority of these boats are registered in the state of Utah and annual property taxes are paid as part of the registration process. Utah counties could lose hundreds of thousands of dollars annually in tax revenue.
- The Navajo Tribe would experience a significant financial loss. The Navajo Generation Station, one of few such amenities that has been provided to an Indian Tribe, could be shut down with a loss of over 1,900 jobs and associated power. If the Navajo Power Project were to remain operational, significant costly modification would be required increasing energy costs to more than 3 million customers. In addition there would be a loss of tourism industry revenues.
- If the proposal is pursued, a costly EIS would likely be required. Extent of the cost is uncertain, but the recently completed Glen Canyon EIS cost $80 million and took about 10 years to complete.
- Structural modifications, to Glen Canyon Dam to allow Lake Powell to be drained would be very expensive.
- Glen Canyon Dam provides flood control benefits to the Lower Basin states and Mexico. It is impossible to quantify future costs that might be incurred without its ability to control flood flows; it is expected that such costs could be substantial.
- Loss of 3500 gigawatt hours of hydroelectric power producing revenues of $80 million yearly.

Environmental

Post dam riparian conditions in the Grand Canyon appear no worse than before the dam was constructed, but they are substantially different. Operation of the dam has created a refuge for birds of regional significance, a cold-water blue-ribbon trout fishery, and a regulated river with high

biodiversity. We give this up in hopes that something better will develop.

- Draining the lake will have certain negative environmental consequences, including: leaving rock formations around the reservoir bleached, (bathtub ring), exposing significant debris, and potential problems with the sediment that has been deposited in the reservoir, which may dry along rock walls and become airborne during windstorms; creating dust and air quality problems.
- If it becomes necessary to replace the lost energy generation, it could become environmentally significant and will be expensive.

Water Supply

- Upper Basin States would be further constrained in developing their remaining allocations. During a prolonged drought some existing Upper Basin uses might be curtailed.
- Lake Mead would fill with sediment at a much faster rate, thereby decreasing its life expectancy.
- The construction of the Lake Powell pipeline for the delivery of water to southwestern Utah would not be feasible, and there is presently a great deal of interest in this project.

Legal Issues

- Federal legislation would be required to drain Lake Powell.
- The delicate balance of water rights and water supply between the Upper and Lower Basin States could be destroyed, resulting in costly long term negotiations or litigation and significant modification to the "Law of the River."

Conclusion

The Colorado River is used to meet the irrigation needs of over 1.8 million acres in the Basin. Over 24 million people receive municipal water from the Colorado River Basin including the major Upper Basin metropolitan areas of Denver, Albuquerque, and Salt Lake City, as well as hundreds of smaller communities. Lake Powell has a storage capacity of over 25 maf and generating capacity of 1,350 megawatts of power. The hydroelectric energy from Glen Canyon Dam is used by over 100 cities', towns and Indian communities throughout the Basin. In addition Lake Powell is a vacation destination area for millions of visitors from around the world who enjoy the scenery and water activities associated with the reservoir. Much of this would be lost if Lake Powell was drained.

Lake Powell allows the Upper Basin states to continue to develop and use its Upper Basin water compact allocation and at the same time meet its obligation to deliver 7.5 maf annually to the Lower Basin states. Without the storage that Lake Powell provides, future use of water in the Upper Basin would be in peril. Without Lake Powell, the dire impacts of water shortages, rationing, economic chaos, and water wars, among all users (including instream flows) could become a legacy left for future generations. Lake Powell is the Upper Basin states security to both its existing and future water supply availability.

Restoring Glen Canyon Linking Our Future to the Importance of Our Past

by David Wegner
Trustee of Glen Canyon Institute

What is the value of a resource? For many years developers and politicians have equated value with building, controlling, and expansion. Economic growth was the golden ring that they were after—unconstrained, full steam ahead, unabated development of opportunities to make money and sustain more and more people moving into an area. Expansion and spending fuel short-term economic growth. That philosophy has made many people rich and allowed for society to expand. The question that must be asked, though, is *does short-term growth provide long-term economic and environmental stability?*

Events over the summer of 1998 indicate that we live in a very tenuous economic time. Financial crisis in Indonesia has cascaded to Japan, Russia, South America, Mexico and is knocking on the door of the United States. What we have learned is that the house of economic cards is built on a shaky foundation. The short-term economic growth juggernaut has run over the environment and our rivers, resulting in a constipated water system that according to Bruce Babbitt has given the Colorado River the regularity and predictability of a giant toilet.

Long-term environmental and conservation values are what drove John Muir, Aldo Leopold, David Brower and Martin Litton to fight for our natural heritage. Today it is easy to gaze across the landscape and see that a future has to include an environment that is sustainable and ecologically intact. Not fragmented or cut up into pieces that provides little ecological integrity or value.

Restoring Glen Canyon

The mantra that the Glen Canyon Institute has been shouting from the riverbanks for the last few years is being heard. All across the nation and the globe scientists, academicians, students, decision-makers, and the public are contemplating the potential of restoring this vital piece of our ecological heritage. Wallace Stegner called it developing the "Geography of Hope." Today we are exploring the potential and seizing the opportunity to become active participants by restoring our landscape and developing the values for tomorrow.

Values Based on Ecological Integrity

The potential of a restored Glen Canyon provides us a visceral feeling have worth and value. The desire to restore Glen Canyon goes far beyond the goal of wanting to right a wrong. It gets to the core need for long-term societal and ecological sustainability and restoring value in our landscape.

The reasons and values can be categorized into five broad areas:

(1) Biological, (2) Water quality, (3) Physical, (4) Economic, and (5) Spiritual. These are not the only areas of interest but they do bracket a large percentage of the perspectives.

BIOLOGICAL: ***Ecosystem integrity is only as good as the system that supports it.***

The Colorado River system is composed of hundreds of small tributaries and rivulets coalescing into one of the most unique river systems and landscapes in the world. Nowhere else have the rivers carved such an intricate and extensive series of canyons and ecosystems. Millions of years ago, a dynamic river began carving the canyons and riverine habitats that evolved into the river system we see today. Biologically a unique assemblage of fish, amphibians, plants, and insects evolved as the river defined itself. Cut off from the influences of other river basins and the oceans, the Colorado River developed an ecosystem defined by a dynamic flow regime, seasonal changes in hydrology, and limited influences from outside sources.

Restoration of Glen Canyon will provide a cost-effective approach to deal with many of the endangered species problems and long-term ecological sustainability. Millions of dollars are spent each year in fragmented and uncoordinated approaches to endangered species recovery in the Upper and Lower Colorado River Basins. This includes the Upper Basin Endangered Fish Recovery Program, the Grand Canyon Monitoring Program, the San Juan Recovery Program, and the Lower Basin Multi-species Conservation Program; all independent efforts funded through water, power and tax revenues. While the biologists are making heroic efforts to do the right thing, the decision-makers, politicians and extractive resource users continue to fragment the effort and ecosystem. The result is millions dollars spent with only limited success. What is missing? A connected riverine habitat system. Restoring Glen Canyon will provide immediately a solution, not a Band-Aid to the long-term ecological sustainability of the river system. A connected river, a dynamic river, a living river. Not a series of stagnant pools and constipated tailwaters.

In just one action, a restored Glen Canyon will provide habitats for endangered and native fish populations, spring habitats for amphibians and insects, and a connected riparian zone in which native birds can once again flourish. Why continue to spend millions on the hatcheries, fragmented stream sections, studies, and thermal control structures (all which provide limited help) when the solution lies in just restoring the river? The Department of the Interior just completed a fourteen year series of studies in the Grand Canyon; spent well over $100 million dollars on the science and an EIS and concluded that the modification of dam operations would only have limited success for environmental sustainability.

WATER QUALITY: ***The proof is in the data.***

The Colorado River watershed is largely composed of sedimentary rocks laid down millions of years ago when the continent was consistently rising, sinking, and being inundated by geologic seas and inland water bodies. The combination of incoming and outgoing seas, erosion of the mountains, and deposition of sediments resulted in rock layers that have chemical characteristics similar to the sediments being deposited in the oceans today—high in salts and trace metals.

The unimpeded Colorado River cut, deposited, and moved these sediments along on their journey from the mountains to the sea in a straightforward manner. Along comes the reservoirs and suddenly sediment traps are created and the annual cleansing system is corrupted. The result is that today reservoirs are trapping sediments and the metals and salts that they carry. Reservoir Powell traps thousands of tons of sediment every year from the Upper Colorado River Basin, which, according to the Department of the Interior, harbors some bad water quality conditions due to the sediments that are being farmed, irrigated and eroded.

Today the reservoir traps the sediments and provides an environment where the trace metals and salts can change from benign forms to ones that can migrate from the sediments to the plankton and zooplankton and right up the food chain. Without the annual flushing we are compounding the water quality problem. Is it fair to push this eventual toxic waste dump to future generations when we can do something about it now? Isn't it our responsibility?

No one can predict how long it will be before the sediment material becomes a real problem. Much is contingent on annual runoff levels, upstream conservation measures, and the limnoloigical conditions in the reservoir. Based on Bureau of Reclamation projections, in the not too distant future, the reservoir will be consistently drawn down to meet downstream and upstream demands, the sediments will be exposed, and the problem will most surely escalate.

Lastly is the problem of oil, that is, the oil that comes from the use of two cycle engines on the reservoir. Every 4.4 years enough oil is spilled through the use of two-cycle engines to equal the 11 million-gallon Exxon Valdez oil spill. True, a great deal is evaporated into the air and the water does dilute some of it. However, some does make it into the sediments and does affect the environment. Seems like another Exxon Valdez level spill is not what we want for the future.

THE PHYSICAL WORLD: ***Does a reservoir in the desert really make sense?***

A great deal of oohing and ahhing goes on the first time anyone sees the reservoir. A blue body of water set amongst the Navajo sandstone. It is true that the surface looks fantastic. It is the story that is unseen that must be told, however.

Lost Water

Over 700,000-acre feet of water annually evaporate from the reservoir surface; enough water to supply the Salt Lake City area for four years and the Los Angeles basin for one year. That is a lot of water. This is water lost to the atmosphere and consequently unavailable. Not important enough in Reclamation's eyes to be quantified exactly. Similarly, the amount of water sucked into the banks of the reservoir has never been quantified. Who knows how much is "temporarily" lost to the rock? Reclamation doesn't care so no one bothers to measure it.

Sediments

Grand Canyon is being deprived of its sediment lifeblood. Over 90% of the sediment that used to sustain the Grand Canyon beaches and riparian zone and Colorado River ecosystem downstream are now trapped behind the dam. These sediments carry with them the nutrients, trace metals, and life-sustaining sustenance necessary for ecological sustainability. Grand Canyon cannot sustain its ecological integrity without a consistent re-supply of sediments and water. Periodic floods make for good press and stories but they are only temporary actions. In less than 12 months after the 1996 floods, over 80% of the beaches created were already eroded away. Long-term sustainability requires more.

Hydrology and Dam Safety

Glen Canyon Dam has been anchored into Navajo Sandstone, an aeolian sandstone that has a propensity for spalling off and falling apart. The Reclamation geologists and engineers knew this. Their solution? Bolt the walls together downstream and watch the rock and landslides upstream. Reclamation records are replete with records of falling Navajo sandstone and failure of joints once they were inundated with water. Safety was and remains an issue and the hydrologic events of 1983 proved that the dam is fallible. It is only a matter of time. Reclamation has yet to complete a dam failure inundation study below Glen Canyon Dam. Their logic— not enough people or reason to do one. I may be wrong but even one life and certainly one of the crown jewels of the National Park System are reason enough to at least be able to predict what impacts would occur.

Restoration of the Canyons

Rangers for the National Park Service have for years been documenting the impacts of the reservoir levels on the deposition of sediments in the side canyons. They have photo documented side canyons when they were full of sediment, laid down by high reservoir levels, and have re-photographed them after the reservoir dropped in elevation. The result has been irrefutable proof that once the sediments are exposed, the combined effects of summer rainstorms and spring runoff serve to cleanse the side canyons within 12 to 24 months. Not the generations that some claim it will take.

ECONOMICS: ***Surely restoration of Glen Canyon cannot compete with the revenues generated from houseboats and jet skis.***

Benefits are not always what they seem. Studies across the country have conclusively shown that when the true costs for construction, maintenance, support, restoration, and long-term payback are considered, the benefits do not add up to the true costs. Glen Canyon dam provides revenue from the sale of electricity. No water is actually sold downstream. Some is consumed by the City of Page and the Navajo Generation Station does use some reservoir water for cooling but the majority (over 98%) goes downstream without collecting a penny. Electricity is sold at the lowest rate possible—just enough to meet the payback of the original Colorado River Storage Project and its features. Glen Canyon Dam provides just 3% of the power for the four corner states of Utah, Colorado, New Mexico, and Arizona. Three percent—quite a tradeoff for the drowning of Glen Canyon.

The Cost of Recreation

It is true the powerboaters and jet skiers spend a lot of money. The gas station at Dangling Rope on the reservoir is purported to pump the most gas of any station in Utah! But the true costs of where the recreationists spend their money needs to be looked at. How many of them buy their boats in Page? How many buy their food in Page? How many of them really add to the long-term economic sustainability of the community? The answer is not that many. Recreation that is based on a more sustainable environment will provide a longer-term, more inflation proof, economy. The 1980s and 90s have provided an unusual sequence of years in which expensive recreation toys became the in-thing to have. How long do you think that will last when the economy shifts? Already people are bemoaning the impact of the Asian economic crisis on tourism and hotel use. A longer-term, sustainable economic balance must be developed. Restoration, sustainable use of the resources, and development of an economy that builds on the natural beauty of the environment are much more economically desirable for the future.

GLEN CANYON: The ***heart of the Colorado River system reunited with the soul of the Grand Canyon.***

Many of us can still recall today the impact that the first image of the canyons and rivers of the Colorado watershed had on us. The breathtaking vista, the surging waters, and the vastness of the landscape. It caught us and has held us close. It is well known from archeological and anthropologic studies that the native cultures also treated the landscape as unique and special. The soul of the land created a spiritual landscape for them as it does for us today. Today many of the places for the soul and psyche are gone—condominiums, developments, expansion explosions, encroachment, all the features that define progress take away from our past. Soon we are relegated to remembering our favorite spots through coffee table books, videos, or "you should have been there" stories. As the world

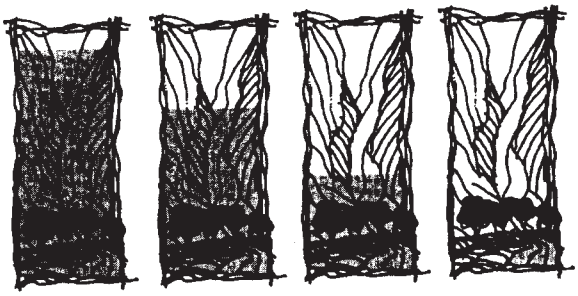
develops places like Glen and Grand Canyon increase in value. They increase in value because they are places of the soul. They are places where we can escape and find that geography of hope that Wallace Stegner speaks of.

The Colorado River system is composed of a composite of special places. An intact landscape, defined by rivers, and shaped by Mother Nature. We have a responsibility to take care of it.

INTRINSIC AND EXTERNAL VALUES: ***The power of restoring Glen Canyon lies in many factors and in our hearts and souls.***

We all come to this discussion on restoring Glen Canyon from different places. We do know that we will never be able to recover the ecosystem that existed in 1869 when Major Powell first laid his eyes on it. There are too many people, exotic species, and encroachment nowadays. What we can do is provide the ability for the natural physical processes of the river to restore a functioning environment that will provide healing powers. No one can predict the outcome. We do know that restoration will begin immediately once the reservoir begins to be drawn down. We do know that right now we still have the building blocks for the biological and physical systems to let the process begin. And we do know that the river and canyons are important to the people of this great nation and to the world. A restored ecosystem will provide an economic opportunity unrivaled in the world.

The issue of restoring Glen Canyon does hold a mighty power over many of us. The opportunity, the need, the time, and the place. Right here, right now we must accept our responsibility.



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Public Speaking Announcement

Dr. Richard Ingebretson, president of the *Glen Canyon Institute*, will be speaking in Moab on Thursday evening (7:00 p.m.), May 13, 1999, at the Moab Information Center *("The MIC")* on Main and Center Streets. This speaking event is one day before the River Education Seminar (RES) conducted by Colorado Plateau River Guides and starts on the evening of May 14th, 1999. The RES, titled *"Life on the Rocks,"* follows a geology theme.

Early Water Development on the Colorado River: A Chronology

by Roy Webb

1800s—The pattern of prior appropriation in western water rights is established: "first in time, first in rights."

1905—The Colorado River at flood breaks through a railroad embankment four miles below the Mexican border and flows unchecked for sixteen months. The river floods nearly 300 square miles of the Imperial Valley, and the Salton Sink becomes the Salton Sea.

1909—At the head of the Canyon of Lodore, Julius Stone encounters a crew who are drilling test holes for a dam; the tests are inconclusive and the drill sites abandoned. The engineers had been there since 1907, drilling core holes to test the suitability of the bedrock as a dam site for a massive structure that would turn all of Browns Park into a lake. Surprisingly, the drilling crew failed to find bedrock upon which to anchor the foundations of a dam, and the project was abandoned. There may have been other reasons, however, as recorded in the annual report for the U. S. Reclamation Service (USRS) for that year: "The work has been hampered by high water and by the difficulty, on account of the remoteness of the site, of getting men to carry on the work."

1914-1917—The USRS and Utah Power and Light conduct surveys of the Green River from Green River, Wyoming to Flaming Gorge, as well as in Desolation and Gray Canyons, looking for dam sites.

1921—The USRS becomes the Bureau of Reclamation.

1921, July to December—Even before the Colorado River Compact is signed, the Trimble Survey of the USGS surveys the San Juan River from Bluff, Utah, to Lees Ferry, Arizona. Personnel consists of Kelly Trimble, chief engineer; Robert Allen, survey recorder and representative of Southern California Edison; Hugh Miser, geologist; Bert Loper, head boatman; H. Elwyn Blake, rodman; Hugh Hyde, rodman; and Heber Christensen, cook. Using two small open boats, the party leaves Bluff on July 18, 1921, and reaches the mouth of the San Juan on October 5. There they meet the Chenoweth Party, which has been surveying Cataract Canyon. The Trimble Survey continues on, surveying in Glen Canyon, and reaches Lees Ferry on December 15. Hugh Miser later wrote: "The voyage was attended by strenuous labor and hardships."

1921, September - December: While the Trimble party surveys the San Juan, another party under William Chenoweth surveys Cataract Canyon. Personnel consists of Chenoweth, leader; Frank Stoudt, recorder; Leigh Lint, rodman; Harry C. Tasker, rodman; John Clogston, cook; Ellsworth Kolb, boatman; Sidney Paige, geologist; and E.C. LaRue, hydraulic engineer. The party leaves Green River, Utah in two large Galloway-style boats, the L.A. and the EDISON, and a large

boat they call the "tub," which is later named the STATIC. Ellsworth Kolb rows his brother's boat, the EDITH, which was a veteran of their 1911 film trip. After their outboard motor breaks down at The Confluence, they row the rest of the way. On Sept. 27, at Dark Canyon Rapid, Ellsworth hangs the L.A. on the rocks; then hangs the EDISON on the rocks but gets her off; then flips the STATIC. The L.A. was retrieved the next day. Continuing on, they meet the Trimble party at the mouth of the San Juan on October 5, then go on down Glen Canyon, surveying the side canyons. They reach Lees Ferry in mid-December.

1921, October to December—The US Coast and Geodetic Survey sends a party (the Hough party) to the Colorado River to establish benchmarks on a line from Green River, Utah, to Flagstaff, Arizona. Two parties start from opposite ends, and meet at the Crossing of the Fathers in Glen Canyon on November 11. Part of the time they work with both the Trimble and Chenoweth surveys. The annual report of the USC&GS for 1921 declared: "This line of precise levels is probably the most difficult one in the history of the US Coast and Geodetic Survey. ...Many unusual conditions and difficult situations [such as a frozen river and howling windstorms] had to be met by unusual methods of leveling. At best the work was extremely difficult."

1922, July to September—The USGS and Utah Power and Light conduct a survey of the upper Green River from Flaming Gorge to Green River, Utah. Kelly Trimble is once again in charge. Other personnel are: John Reeside, Jr., geologist; Ralph R. Woolley, hydraulic engineer and recorder; H. L Stoner, engineer for Utah Power and Light; Bert Loper, head boatman; Leigh Lint, rodman and boatman; H. Elwyn Blake, rodman and boatman; John Clogston, cook. All except Woolley and Reeside are veterans of earlier surveys. The purpose of this one is to tie in earlier surveys above the Uintah Basin and in Desolation Canyon. Three boats were specially built for this survey and named the UTAH, COLORADO, and WYOMING. The party leaves Green River, Wyoming, on July 15, and reached Green River, Utah, on September 14. Along the way the party had mapped and surveyed fourteen potential dam sites, including the one later chosen as the site for Flaming Gorge Dam, which is actually in Red Canyon.

1922, November 22—The Colorado River Compact, which divides the water of the Colorado River between the Upper Basin states—Wyoming, Utah, Colorado, New Mexico and Nevada—and the Lower Basin states--Arizona and California, is signed at Santa Fe, New Mexico. Secretary of Commerce and future President Herbert Hoover presides. Lees Ferry, Arizona, is designated as the point of division. Each Basin is allocated half of the river's water, or 7,500,000 acre-feet, for a total of 15,000,000 acre-feet.

1923, August to October:—By 1923 the only remaining unsurveyed stretch of the Colorado was the Grand Canyon. Col. Claude Birdseye, head of the survey, chooses what is probably the most experienced crew available in the country at that time. Leigh Lint and H. Elwyn Blake both had been on previous river surveys, as had Emery Kolb; Lewis Freeman was also an accomplished riverman and a writer as well. He planned to write a book about his experiences on this trip and others. Conspicuous by his absence is Bert Loper, who had hoped to be the head boatman for this survey. Birdseye refuses to hire him, citing his age (Loper was fifty-four) but the real reason was probably the bad blood between La Rue and Loper, resulting from a violent disagreement the two men had in Glen Canyon two years before. Other personnel include Frank Dodge, who—even though he was probably a better boatman than any of them—was too late to get a boatman job and was hired as rodman and camp helper; E. C. La Rue, hydraulic engineer; R. W. Burchard, engineer; Dr. Raymond Moore, geologist; Frank Word, cook (later replaced by Chef Kominsky). This was probably the most comprehensive and best-prepared survey up to this point, and in six weeks spent on the river from Lees Ferry, Arizona, to Needles, California, they study and record the geology (for future dam sites), depth of the channel, speed of the current, the flow of tributaries, and other aspects of the canyon that future dam builders would need to know. Besides the Black Canyon damsite, twenty others are located and mapped within the Grand Canyon. Fortunately, and despite serious efforts in the 1960s, none of these dams were ever built. Besides the scientific work of the survey, the party records a number of interesting firsts. They carry the first typewriter into the canyon as well as a large two-way radio to keep in touch with the outside world. The radio needed a 160-foot antenna to work, and despite warnings that it couldn't work in the deep canyons, work it did, so well that the crew often enjoyed listening to broadcasts in the evenings. Over the radio, they learn of the death of President Warren G. Harding. In his honor, they stay in camp the day of his funeral and name the rapid opposite camp President Harding Rapid.

1928: Boulder Canyon Project Act enacted, authorizing the construction of a large dam in Boulder Canyon (although the dam is actually in Black Canyon).

1928-1935: Construction of Boulder Dam (later renamed Hoover Dam) begins in 1928, and dedicated by President Roosevelt on September 30, 1935. It was the largest public works project of its time. The dam cost $60,000,000 to build and was completed two years ahead of schedule and under budget. The resulting reservoir, named Lake Mead for Elwood Mead, Commissioner of Reclamation, holds back 28.6 million acre-feet of water; the dam generates 4 to 5 billion kilowatt-hours of electricity annually.

Conclusion

The USGS surveys were amazingly successful, with very little damage and no loss of life. The surveys conducted in the 1920s were models of scientific study, and contributed immensely to our understanding of the Colorado River and its drainage basins. There were many other accomplishments,

such as the first radio used in the canyons, the first typewriter, the naming of President Harding Rapid, and other features, besides of course the obvious of being first to choose dam sites. All of the sites later used for dams were chosen by the surveyors of the 1920s.

There were some problems that the surveyors did not foresee, however. For instance, Boulder Dam was not built in Boulder Canyon (which is upstream) but in Black Canyon, through an error by cartographers. Even more importantly, despite the intense scientific efforts put into the surveys, the engineers were wrong on one important fact: the average annual output of the Colorado is considerably less than 15,000,000 acre-feet; this has caused problems allocating the water to the present day.

Incidentally one side benefit of these squabbles over the water of the Colorado River was the first of the so-called Riverbed Cases; the state of Utah sued the United States over who owned the bed of the Green and Colorado rivers; the resulting trial and the extensive testimony collected provide the best historical record of early river travelers.

Further Reading

Rough-Water Man: Elwyn Blake's Colorado River Expeditions. Richard E. Westwood. University Of Nevada Press, 1992.

If We Had A Boat. Roy Webb, University Of Utah Press, 1996.

River Runners Of The Grand Canyon. David Lavender. University Of Arizona Press, 1985.

A River No More: The Colorado River And The West. Philip Fradkin. Alfred Knopf, 1981.

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Will Bussard
Lynn Jackson
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Synopsis of the Bureau of Reclamation in the Colorado River System

Compiled by the Mark Borges and John Weisheit

1869—Major John Powell's first river exploration of the Green and Colorado rivers. Ten men and four boats start, six men and two boats finish.

1871 to 78—Powell's second river trip (including photographic documentation) through the Green and Colorado river basins. Almon Thompson, Grove K. Gilbert and Clarence E. Dutton complete the land reconnaissance for Powell and produce very important publications for science.

1870s—The Midwest was unusually wet and the population of Nebraska, Kansas, Dakota, and Minnesota increased from 1 million to 2.5 million.

1877—Congress passed the Desert Land Act which demanded proof of irrigation before land title could be granted. This favored the large companies (land grabbers) and discouraged private homesteads.

1878—Powell's "Report on the Land of the Arid Regions" was presented to congress. Essentially, it said that there was not enough water to go around and he proposed the following solution: No one person can control the river water, even if that person owns the property that the river runs through. Based on topography, water is to be appropriated for the maximum good to the maximum amount of people. Powell further proposed the "legal organization of nine bon-a-fide settlers of irrigable land into irrigation districts capable of self government. The tract should be continuous and should be split into farms not exceeding 80 acres. On demand, the Surveyer General of the US would provide a survey on a pattern established by the farmers association. After three years of demonstrated irrigation of the lands, the land office shall issue titles to each person in the irrigation district. This title is to include a water right." (Stegner, Beyond the 100th Meridian) Homestead plots, without irrigation (grazing land) are to be 2560 acres.

1879—The government land surveys were consolidated into one office with Clarence King in charge, and called the United States Geological Survey. Powell will direct the USGS in 1881.

1886 to 96—A draught on the plains created a disaster for all the dry land farmers.

1891—Francis Newland lost 1/2 million dollars in a private irrigation project for Truckee Nevada. (See 1902.)

1892—Grand Ditch was built to carry water 16.7 miles from the west side of the Great Divide to the river drainages of the east side. This was the first water transferred out of the

Colorado River basin and set a precedence for future water transfers to basins in NM, UT, AZ, and CA. More water is exported from the Colorado River watershed then any other river basin in the country.

1894—Powell resigns as the head of the USGS due to pressures from Congress to drop his public land reforms.

1894—Congress passed the Carey Act. The Carey Act provided for the federal government to give up to one million acres of land to a state, if those lands were reclaimed and settled.

1896-1910—Large irrigation ditches were being built and those who bought or homesteaded land along these ditches received a real bargain.

1901—The Alamo Canal diverting water from the Colorado river to Imperial Valley had been cut by Chaffey. The canal was 60 miles long.

1902—Congress passed the Newlands Act which created what is now the Bureau of Reclamation to methodically use and conserve the western water for settlement use. Projects were to be financed by a Reclamation fund, which would be filled initially by revenues from sales of federal land in the western states, then paid back gradually through sales of water to farmers. Homesteaders received 160 acres each regardless if it was irrigable land or range land.

Note—From 1910 to 1930 several "reforms" were tacked onto the Reclamation Act. Reforms extending the repayment period to fifty years, setting water prices according to the farmers' "ability to pay," and using hydroelectric revenues to subsidize irrigation costs.

1904—Another canal diverting water from the Colorado River through Mexico to Imperial Valley was built. The River swept away the head gate and the river ran uncontrollably through Imperial Valley and it filled Southern California's Salton Sea.

1909—Laguna Dam, built just north of Yuma AZ, was the first dam to be built on the Colorado River. It was designed to raise the water level of the river just high enough to form a still pool so the water could be siphoned off in to a canal for irrigation. The Indians were the first to divert the lower Colorado River at this point.

1922—Colorado River Compact was signed by delegates from CO, UT, WY, NM, AZ, CA, and NV. 15 million acre-feet (maf) of Colorado River water is divided between the upper basin, the lower basin and Mexico. The upper basin (the dividing mark is 100 feet below the mouth of the Paria River near Lee's Ferry, AZ) receives 7.5 maf; the lower basin receives 7.5 maf; each basin commits 0.73 maf (1.5 maf total) to Mexico; 8.23 maf must exit Glen Canyon Dam each year.

1928—Congress passed the Boulder Canyon Project Act (BCPA). The BCPA consisted of Hoover Dam for electricity and water storage, and the All-American Canal to deliver water to Imperial Valley.

1931 to 36—Hoover Dam was constructed. Standing 726 feet tall, it was the tallest dam ever built at that time. Downstream, Parker Dam was built and its electricity helps to pump water from Lake Havasu to Southern California.

Note—"By 1956, Congress had voted 110 separate authorizations for the Bureau of Reclamation, some encompassing a dozen or more irrigation projects and dams. Of these, 77 were authorized between 1928 and 1956, along with hundreds of projects built by the Army Corps of Engineers in the East and West. In that astonishingly brief 28-year period between the first preparations for Hoover Dam and the passage of the Colorado River Storage Project Act, the most fateful transformation that has ever been visited on any landscape, anywhere, was wrought." (Marc Reisner, Cadillac Desert)

1948—The Upper Colorado River Basin Compact was signed by delegates from CO, UT, WY. and NM. The Upper Colorado River System water was divided by percentage, respectively; 52, 23, 14, and 11%.

Note—After 1956, all dam building projects were presented with a means (hydroelectricity/agriculture) to recoup the initial investment of the dam. The idea of a "Cash Register" dam was born.

1956—Congress authorized Mike Straus's Colorado River Storage Project (CRSP). The CRSP consisted of four major storage dams on the Upper Colorado River System designed for CO, UT, WY, and NM to get their water as divided up by the Upper Colorado River Basin Compact. The four major dams are: Glen Canyon on the main Colorado, Navajo on the San Juan River, Flaming Gorge on the Green River, and the Wayne Aspinall Storage Units (which are three dams called, Blue Mesa, Morrow Point and Crystal) on the Gunnison River.

1957 to 64—Glen Canyon Dam (and powerplant), forming Lake Powell was constructed. Glen Canyon is the largest dam in the Colorado River Storage Project.

1965—Fontenelle Dam, on the Green River in Wyoming, was completed and weeks later it sprang a leak. The water was removed from the reservoir in a controlled manner and the dam was repaired.

1968—Congress passed the Colorado River Basin Project Act which was the most expensive single authorization in history. It authorized the Central Arizona Project (CAP, Hooker Dam in the Gila Wilderness, the aqueduct from Lake Mead to Las Vegas, the Dixie Project in Utah, and the Uintah Unit of the Central Utah Project (CUP). It also authorized the San Miguel, Dallas Creek, West Divide, Dolores, and Animas La Plata projects in CO. CAP is a system of pumps/siphons and canals/ tunnels, transporting water from Lake Havasu to Phoenix and Tucson. CUP is designed to transport water from Strawberry Reservoir to the Great Basin.

1969—Congress passed the National Environmental Policy Act and the Bureau was forced for the first time to make a public assessment of the environmental effects of its new dams.

1970 to 75—The Bureau of Reclamation experimented with cloud seeding to increase western states precipitation. 35 silver iodide generators were placed along the south flank of the San Juan Mountains which increase winter snow fall by 10%.

1973—Congress passed the Endangered Species Act.

1974—Agreement with Mexico signed (Minute 242) which calls for the United states to deliver Mexico water whose salt content in not more than 1000 ppm. A reverse osmosis desalination plant has been constructed at an estimated cost of $293 million. Including the energy cost to run the plant the total cost in 5 years will exceed $ 1 billion. In effect the American public is fixing Mexico's water at $300.00 per acre-foot, meanwhile selling the upstream water at $3.50 per acre-foot.

1980—17 years after its construction, Reservoir Powell filled for the first time. Reservoir Mead filled in six years.

1982—The Bureau of Reclamation started the Glen Canyon Environmental Studies (GCES) program to investigate the dam's effects on downstream environmental and recreational resources.

1983—A very rapid snowmelt led to a largest flood the Colorado River Basin had seen in almost 60 years. Fontenelle Dam was leaking again and as a safety precaution, the water had to be lowered.

1983—The penstocks at Glen Canyon Dam could not keep up with the very rapid run off and Reservoir Powell rose 6 inches/ day. "Plywood splash boards were placed along the top of the spillway gates to hold the water back. Finally, the inevitable happened: the reservoir could no longer hold the in flowing water and the dam's jet tubes and spillways had to be opened. On June 29 the Colorado River at Lee's Ferry was flowing [92,600 cfs] and cavitation in the spillway (eroded holes as big as 20' wide by 40' deep) from the spillway walls. The dam's structural integrity was threatened but the only failure were inside the spillways". (Collier, Schmidt and Webb, Dams and Rivers). Working around the clock, repair to Glen Canyon Dam's spillways were barely completed for the 1984 flood season. Beaches in the first 180 miles of the Grand Canyon suffered net erosion; but beaches farther down gained sediment.

1992—Congress passed the Grand Canyon Protection Act, stipulating that Glen Canyon Dam is to be operated in a manner that protects resources within Grand Canyon.

1992—Yuma desalination plant begins operation at 1/3 capacity.

1996—Glen Canyon Dam spilled 45,000 cfs for eight days. This was the first intentional flood ever released for environmental purposes. When the flood receded, a great deal of clean new sand had been perched well above the normal high-waterm line. The long beautiful beaches were reminiscent of the pre-dam Grand Canyon. Sediment load in the Grand Canyon, derived from the tributaries, will be monitored to determine the optimum time to flood the canyon again.

1997—50,000 major dams have been built and less than 10 free-flowing rivers remain in the West.

References

Bureau of Reclamation Web Page, (usbr.gov).

Wallace Stegner, Beyond the Hundreth Meridian.

Phillip Fradkin, A River No More.

Micheal Collier, Robert Webb, and John Schmidt, Dams and Rivers, a USGS Circular.

Marc Reisner, Cadillac Desert.

Donald Pisani, To Reclaim A Divided West.

Where is the RES?
or
"Life on the Rocks"

The Bureau of Land Management has given CPRG permission to conduct our RES at the Gold Bar Campground on the Potash Highway (Utah Hwy. 279), which is about 11 miles from it's junction with Hwy. 191; that junction is north of Moab and across the Colorado River bridge on your way to Arches National Park.

Participants of the RES can camp at the Gold Bar Campground on Friday, May 14th, Saturday, May 15th and Sunday, May 16th. No dogs and no bottles please! Participants are limited to 100. Look for our registration form in this issue.

- The keynote address on Friday evening, May 14th, is in Moab at the Grand County High School Auditorium on 400 East.
- The teaching stations on Saturday and Sunday are at Gold Bar Campground where the shade is: 1) the upstream tamarisk grove; 2) the railroad cut; and 3) "Culvert Canyon."

Agency Recalcitrance and Evasion Regarding Compliance With the National Environmental Policy Act Relating to Glen Canyon Dam Operation: A Documented Need for Congressional Intervention

By Bob Lippman

Bob teaches environmental law at Northern Arizona University, Flagstaff. Provided is the summary of a well-written 20 page report. For more information contact the Greater Grand Canyon Resource Council; P.O. Box 30605; Flagstaff, AZ 86003.

Although federal construction of Glen Canyon Dam on the Colorado River was completed in 1963, six years prior to the passage of the National Environmental Police Act (NEPA), a number of operational, structural and legal events and implementations occurred after NEPA was enforced, which should have triggered the Environmental Impact Statement (EIS) process requirements of the Act.

These events included a series of lawsuits against the Bureau of Reclamation (BOR), the agency charged with ownership and management of the dam and power plant, challenging the ongoing management and subsequent impacts of the facility as being out of compliance with NEPA. The continual litigation resulted in legally enforceable representations, stipulations and commitments by the agency to actively engage the NEPA/EIS process through the preparation of either a site specific (Glen Canyon) or comprehensive/ system-wide (Colorado River Storage Project) EIS. The BOR did in fact prepare a draft Environmental Assessment (EA) for Glen Canyon Dam in 1976 which succinctly outlined environmental and recreational impacts of operations and identified a spectrum of viable operation scenarios for mitigation of these impacts. The effort, however, was abandoned within one year and the BOR's binding commitments laid in limbo until 1990.

Other events which should have legally engaged the EIS process included documented operational changes involving significantly enhanced peaking operations, power plant upratings, and the Glen Canyon Environmental Studies Program.

After more than a decade of public clamor over lack of NEPA compliance and alarmingly enhanced irreversible environmental and recreational impacts of the dam in Grand Canyon National Park, most notably being the extreme erosion of beaches and riparian habitat, and concern over further impact-enhancing structural and operational changes being both proposed and implemented, the Department of Interior, in direct response to a successful legal challenge against the Western Area Power Administration (WAPA) in issuing its post-1989 power marketing contracts, directed the BOR to begin a two year, site specific EIS process.

The issues presented in light of Interior's recent directive are as follows:

1. Considering a lengthy history of apparent fraud, deceit, contempt of Court, and bad faith evasion of legal responsibilities on the part of BOR in regard to Glen Canyon Dam NEPA compliance, along with the fact that unnecessary, irreversible environmental impacts have been ongoing and accelerating since 1975 when NEPA was legally engaged, the present EIS process is suspect, and interim mitigation and Congressional direction appear mandated;
2. In the absence of Congressional direction, guidance from rulemaking, or detailed judicial orders, the BOR will likely accelerate the present EIS process, considering the Agency's historic developmental mission .and client base, the history of non-compliance with NEPA and failure to consider a full range of management options and priorities, and the employment of a lesser baseline of data on a fast track process which will tend to narrow.the Agency's decision-making options closer to the status quo. It is noted, "however, that a more protracted study would paradoxically present the specter of enhanced, irreversible impacts during the study period, which suggests strongly that interim-protective operations and flow regimes should be implemented; and,
3. Assuming the BOR does properly identify and quantify the relationships between dam operations and environmental degradation and other impacts in a project EIS, and further, identifies alternative operating scenarios for environmental impact mitigation, the Agency is not bound to any implementation of a mitigation strategy or alternative, considering that NEPA itself only requires full consideration of impacts and alternatives without mandating a "correct" environmental decision.

It is thus the conclusion of this review of the record, that expeditious Congressional action and direction are required regarding the mandated scope of Colorado River NEPA compliance, consistent with the record and articulated in a preferred alternative, as well as measures for both interim and permanent management direction within the present EIS process, if any of the impacted resources and values of Grand Canyon National Park are to be preserved at all. More specifically, immediate Congressional direction is needed in the following areas: 1) basing the present site specific EIS on a "preferred alternative" of maximum impact mitigation attainable, 2) returning Glen Canyon Dam towards a base loaded flow regime, 3) mandating the study of technologies and methodologies for restoration and stabilization of the riparian environment in Grand Canyon, 4) interim flow management, 5) Department of Interior (DOI) preparation of a comprehensive environmental impact statement addressing system-wide operations and cumulative/synergistic impacts on the Colorado River from all dams, with a view towards redefining and prioritizing project purposes and values, and rationally integrating Colorado River management to mitigates regarding NEPA compliance, environmental impacts and other relevant aspects.

The tragedy of the Grand Canyon is that even with the presence of Glen Canyon Dam, unnecessary and avoidable environmental and recreational impacts 'have been permitted to accelerate at extreme rates simply because of agency. recalcitrance, evasion and deceit, and that the problem is and always has been to a great extent remediable.

Thoughts on Leadership

by Bob Bond

A starting place for working with leadership on a professional river trip could be helping your staff develop a common definition of leadership.

> *Leadership is the social transaction between leaders and followers.* (Bums)
>
> *Leadership is the process of influencing the activities of an originated group toward goal-setting and goal-achievement.* (Stodgill)
>
> *Leadership is about coping with complexity* (Kotter)

The definitions listed above illustrate a point made by Thomas E. Croniin in Thinking and Learning About Leadership:

> *Almost anything that can he said about leadership can be contradicted with counter examples. Moreover, the whole subject is riddled with paradoxes.* (Not to mention opinion and mystery.)

So what is the Trip Leader or Guide to do when their trip requires something beyond the norm. Something that might be called leadership?

A River Trip Is Leadership Made Visible (adapted from Beyond Leadership)

When I think about my river (or outdoor) experiences, I keep coming back to the fact that leadership was an integral part of those experiences. From the outset leadership traits or qualities were being utilized to make things happen. People came together and brought their personal histories, skills, agendas, etc. with them. A group formed, produced a trip or experience, and then disbanded. What I've observed some of the best guides do, is interpret (translate, clarify, amplify, etc.) that which the guiding environment is offering, if only we take the time to listen. Therein lies the answer to the question of what is the guide to do: Fall back onto our strengths and the river experience while exercising the leadership that is already so naturally a part of the experience.

Traits Of A Successful Leader

Self-aware
Integrity
Empathy
Tenaciousness
Optimism
Service Oriented
Strong Communicator
Competence
Innovative

(This list is meant to be thought provoking, not inclusive.)

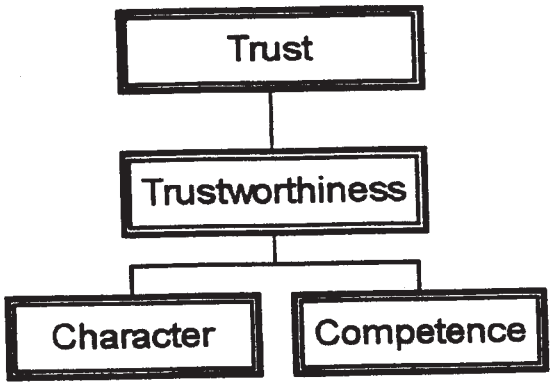
Current leadership theory frequently emphasizes the above traits only in the context of their role in the Leader - Follower relationship where leadership takes place. They are not seen as the foundation of the leadership interaction. I view them as enablers, which a person draws upon while leading. I also view these traits as being integrally linked to the act of guiding or trip leading. They are traits (skills?) we draw upon every day. It is not necessary for a guide, in my opinion, to go looking for leadership beyond the trips they run and the people they work with. Leadership is already there, surrounding them, just waiting for us to study it, learn from it, and utilize it to improve our trips. This does not mean that I feel a guide should not study leadership outside of the work-a-day world of guiding; for myself that has been imperative. Rather, my experience is that making an attempt to understand the underpinning of leadership in the general sense has helped me be more effective as a guide. Which helps to reduce my anxiety as I approach this subject that can daunt the most well-educated person.

Trust, Vision, Power and Initiative: The Building Blocks.

If we view leadership as a social interaction in which leaders and followers engage one another, it is here that we must look for the foundations of leadership.

Trust

In Principle Centered Leadership, Stephen Covey forwards that trust—or the lack of it—is at the root of success or failure in relationships and in the bottom-line results of business, industry, education and government. He goes on the propose that trust is rooted in personal trustworthiness, which springs from two sources; character and competence. (see below)



Vision

Vision can be said to be a sense of what might be. The ability to look to the future and penetrate the clouds that obscure it.

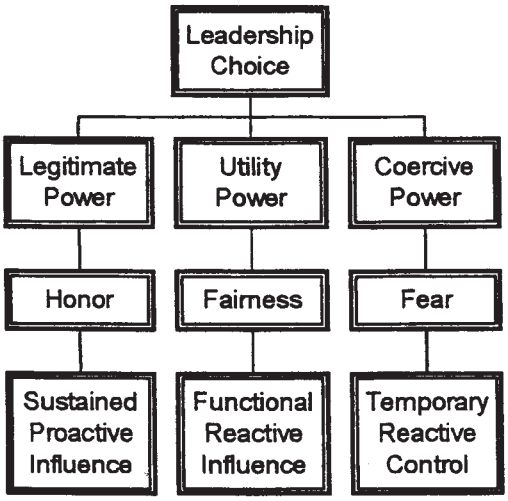
Past years seem safe ones, vanquished ones,
while the future lives in a cloud
formidable from a distance.
The cloud clears as you enter it.
I have learned this, but like everyone,
I learned it late.

Byrle Markham

For the guide, vision is imperative to taking the trip along a track and to a projected end rather than to any end reached by merely going through a series of motions. For the T.L., an aligned vision, with guides working toward common goals, is key to producing a coherent trip. The look to the future will, by necessity, be big picture and detail oriented. Considering the trip arid it's goals as a whole, as well as the experience and needs of individuals, etc.

Power

The ability to bring power (i.e. that which makes things happen) to bear upon a vision is obviously needed for there to be movement beyond that vision. Covey defines three types of power; coercive, utility and legitimate. As leaders and followers interact a choice is made as to what type of power is utilized to bring about the vision, as illustrated by the following figure.

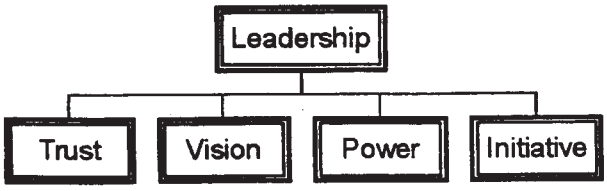


Adapted from Principle Centered Leadership, Covey

Getting to and remaining within a legitimate power base is not easy, but it is here that real trust is utilized and potentials are maximized.

Initiative

The final block in this model of leadership is initiative. We have all been faced by co-workers who have all the other elements but lack initiative. Could this be the single article that determines who is leading and who is following.



Ideas for the Guide

Trip Leader (TL)

Providing leadership for a commercial river trip begins with the T.L. We all know that showing up on time and organized for pre-trip rigging is a plus. Beyond that, sharing a particular resource (such as an article on ancient Pueblo culture) with your co-workers can be thought provoking, spur discussion and help to work toward alignment. Work to establish trip wide standards that can be utilized to enhance the clients experience. Such as: A trip wide emphasis on western water history and issues that allows for variance in guide styles; Clearly understood and agreed upon, minimum levels of interpretation. Work together and build upon the strengths of all the guides. Be proactive by setting an appropriate tone from the start and with your co-workers that sets the stage for effective leadership to be utilized.

Guides

It can be said that the relationship enjoyed by the clients and guides is the bottom line in how a trip will go. Working with leadership only reinforces our understanding of, and commitment to, developing a rapport and building tust with every client as soon as possible. We must also work quickly to communicate our vision of the trip to the clients, by sharing information, and hopefully, develop an environment that considers everyone's needs and motivations. Power, I feel, must be shared. Power in the commercial river arena, put simply, is what the guides have (e.g.: skills, information, respect). Remember that your clients can't enter with you into the social transaction that is leadership if they have no power.

Suggested Reading List

Leadership, James MacGregor Burns
The Seven Habits of Successful People, Stephen Covey
Principle Centered Leadership, Stephen Covey
Leaders, Warren Bennis
Thinking and Learning about Leadership, Thomas Cron in
Beyond Leadership, Bennis, Parikhi, and Lessem

The Mentors
of
"Life on the Rocks"

(cancellations may occur)

Christine Beekman
Damian Fagan
Randy Larsen
Rebecca Martin
Matt Robinson
Dusty Simmons
Steve "T-Berry" Young
Kara Dohrenwend
Dave Focardi
Marian Ottinger
Tamsin McCormick
Dennis Silva
John Weisheit
and others.

Otis Reed Marston

Running the Colorado River

An Oral History by Francis P. Farquhar

With many thanks to the staff at the Bancroft Library, University of California at Berkeley, for their permission to publish this oral history.

This is my first installment of a historic profile on Otis "Dock" Marston, which will be presented on a regular basis in the pages of The Confluence. Marston was the premier historian of river history for the Colorado River Basin. Francis P. Farquhar was the premier bibliographer of the Colorado River basin. Both men are now deceased. We can thank these men for their contributions to better understand the history of the Colorado River basin. ***John Weisheit***

Note: Mr. Marston edited this oral history himself and his corrections were incorporated into this manuscript.

A Brief Résumé
Otis Reed Marston

Nickname: "Dock".
Born: Berkeley, California, February 11, 1894.
Education: University of California, BS in Electrical Engineering, 1916; Cornell University, ME in Industrial Engineering, 1917.
Military: U.S. Naval Academy Ensign (T) USN, 1918; Qualified Submarine Commander USN, 1919.
Extracurricular Activities: Swimming Team, UC (swam Golden Gate); Tau Beta Pi; Eta Kappa Nu; Theta Chi.
Professional: Member Berkeley Board of Education; Securities Business, 1934 – 1947; Instructor UC Extension Div., Engineering Economics; Commonwealth Club; Berkeley Rotary Club; Bohemian Club; Sierra Club; Trustee for Conservation.
Publications: Running the Dolores River, 1948, *Colorado Magazine*, October, 1949; Fast Water, a chapter in *This Is Dinosaur,* Wallace Stegner, Editor, Knopf, 1955; River Runners: Fast Water Navigation, *Utah Historical Quarterly*, July 1960; Grand Canyon White Water, *American White Water,* May 1960;
Other: Technical Consultant for the Disney Film, *Ten Who Dared*, 1959.

Date and place of the oral history: Berkeley, March 17, 1964

Farquhar: We are in the library of Francis P. Farquhar at 2930 Avalon Avenue in Berkeley. This is an interview between Francis Farquhar and Otis Marston. Otis, you're commonly known as "Dock," aren't you?
Marston: Well, wherever I'm connected with the Colorado River that's my name.
Farquhar: And that's not "Doc," but "Dock." You're not a doctor?
Marston: "Dock" in order to let people know that I'm not a doctor.
Farquhar: Not a Ph.D or an LL.D. either – just "dock" the boat, is that it?
Marston: That's what I'm looking for, always at the end of a trip, the dock.
Farquhar: Your full name is Otis Reed Marston, then. And here in the room we have the presence of your wife; her name is Margaret Lowell Garthwaite Marston and she's here to verify what you say, or at least to tell me when you're not strictly on the truth.
Marston: That's right, I'll have to be particularly careful.
Farquhar: All right, now where were you born?
Marston: Berkeley, California, a half a block from where I now live. I never traveled.
Farquhar: Except by water.
Marston: Well, there are always the exceptions.
Farquhar: And when were you born?
Marston: February 11, 1894.
Farquhar: And you were brought up here in Berkeley?
Marston: Yes, I lived here in Berkeley up to the time I graduated from the University of California in 1916. Then I went back to Sibley College in Cornell University in industrial engineering and I got an M.E. degree there in 1917. That's an under-graduate degree, incidentally, not a graduate degree.
Farquhar: Just about that time we got into the war – and you lost no time.
Marston: Well, yes I did. They didn't like me very much because my eyesight didn't qualify so I worked for the telephone company in New York for a period of about six months.
Farquhar: Then your eyesight improved, or you persuaded them?
Marston: I persuaded them in this way: I found some eyedrops that contracted the pupils of my eyes fine.
Farquhar: And you got a commission?
Marston: Yes. First I went in as an electrician first class and served for a period of time, taking training, and then I was commissioned in the Naval Reserve. Later, after taking the short course at the United States Naval Academy, I was commissioned in the United States Navy, ensign temporary grade, United States Navy. Then later I went to lieutenant junior grade.
Farquhar: What kind of work were you engaged in then?
Marston: After I got through with the Naval Academy they sent me to the Submarine School at New London and I put in about five months up there and then went into the submarine service serving as the executive officer on the USS H7.
Farquhar: Did you sink any ships?
Marston: No, no. We went to the bottom one time in one of the boats we were on but it was only sixty feet of water and after a while we came up.
Farquhar: Then the war was over and you were out of a job?
Marston: Well, they wanted me to stay in but one of the men in the Navy talked me out of that.
Farquhar: What did you do then?
Marston: Well, I worked for a period of about ten years

straightening out a lot of family affairs – real estate, investments, legal problems of estates, that kind of thing.

Farquhar: That was here in Berkeley and San Francisco?

Marston: Yes.

Farquhar: Dock, let's go back just a little bit: who was your father?

Marston: My father was Captain William Harrington Marston, who got his training and served for a number of years in the windjammers, and then later became a port captain in San Francisco for Welch & Co. who were running a line of windjammers between the Hawaiian Islands and San Francisco carrying sugar.

Farquhar: Was he born in California?

Marston: No, he was born in Maine, as far down in Maine as you can get on the coast - Machias. My mother was born in Maine, too, but she was born up in one of the country towns.

Farquhar: You came from good stock; both of my grandmothers were from Maine, so I can appreciate what good stock is.

Marston: We left there, both of them [laughing].

Farquhar: Well, so did I. [Laughter]

Marston: Well, I did quite a little studying, but I also was on the swimming team the first two years I was there. Then I dropped that activity.

Farquhar: Seems to me I heard something about you swimming the Golden Gate.

Marston: Yes, that was part of the swimming activity.

Farquhar: Swim back?

Marston: No, just one way, that was enough. That was actually a little too much.

Farquhar: Then you graduated in 1916, and Cornell in 1917, and the war and then your ten years of organizing things here. Did you continue in the real estate business?

Marston: To some extent, but things got fairly well smoothed out there so it wasn't a demanding job and therefore I went to work in the investment supervisory work of E.F. Hutton & Co. in San Francisco. I was there with them from 1934 to 1947.

Farquhar: All the time, of course, living in Berkeley. When did you marry Margaret?

Marston: In 1925.

Farquhar: She went to the University:

Marston: Yes, class of 1915.

Farquhar: Seems to me I remember that she was in the same sorority that my wife was in, is that right? [*ΓϕB*]

Marston: May be so, I didn't know her at that time.

Farquhar: Didn't you have an interest in winter sports at one time?

Marston: Back in 1928, 1929 the field of winter sports rather appealed to me and we used to go up and ski around Donner Summit, and we also went up to Yosemite. The nice thing about it then was you could go out a whole weekend and never see a soul out on the slopes. It's changed slightly. [Laughter]

Farquhar: No doubt of that. It seems to me you had a very close connection with the Garthwaites. Didn't your sister marry your wife's brother?

Marston: That's right. At our wedding her brother met my sister, and later they were married.

Otis Reed Marston in September, 1954. Photo by Bill Belknap and courtesy of the Marston Collection at the Huntington Library, San Marino, California.

Farquhar: How many children have you?

Marston: We have three children and ten grandchildren.

Farquhar: That's a pretty good start. You have one son, and your daughters are twins? Are they married?

Marston: Yes, they're both married, and one lives in Sausalito and one lives down in Costa Mesa.

Farquhar: Now, when did you first begin to take an interest in running rivers?

Marston: Neill Wilson talked me into making a trip back in 1942. He said he thought I was crazy enough to make a trip of that sort, so I went down the Grand Canyon in 1942 with Norm Nevills.

Farquhar: That was right after the time that Neill Wilson and I went down the San Juan.

Marston: You started him on the San Juan and he said this man had shown [him] something so he would turn around and show [me] something – which makes you responsible for a lot of difficulties I'm in today [laughing].

Farquhar: Well, I'm responsible for a lot of messes, I guess, but this one turned out a little better than usual.

Marston: Well, I hope so. [Laughter]

Farquhar: That was 1942 – didn't you take your son Garth along with you?

Marston: Yes, he was sixteen at the time. And Neill took his son, Bruce, who was twelve when he started, and at Phantom Ranch he had his thirteenth birthday, and so he ended at the age of thirteen.

Farquhar: That trip really inspired you with the fast water and the great canyons.

Marston: Yes, and obviously the great canyons are just unbelievable in the various features that they offer and all kinds of interests, and here was a way that you could go down into these places, get into the mountains, you might say, without a tremendous amount of effort. The amount of effort involved in making a trip through some of these

canyons has been very much exaggerated by the myth-builders of the rivers.

Farquhar: Wasn't it a fellow named Clyde?

Marston: Clyde Eddy, Down the World's Most Dangerous River, yes, and he's admitted to me since that if he were writing the book again he'd write it differently.

Farquhar: It looked pretty dangerous to him at the time.

Marston: And it was dangerous for the equipment that he had and the skills that he had, it was a dangerous thing.

Farquhar: Isn't it just like a lot of mountain-climbing? It's dangerous if you don't have the right techniques and the right equipment?

Marston: That's exactly it. Plus a little skill and judgment that has to go along with it. Those are the elements.

Farquhar: After that first trip in 1942 with Norm did you keep it up.

Marston: Yes, I made a trip with him again, the San Juan trip, the same one that you made, in 1944. Then in 1945 I went to Cataract Canyon; 1946 went up and did the Snake and the Salmon, just as a comparison, you know. They were always comparing the two rivers. So we took Nevills's boats up there, the same boatmen, and tried it out.

Farquhar: What was your opinion about the relative experiences, both as to enjoyment and as to difficulty?

Marston: Enjoyment – it's very difficult to compare. They're quite different types of river, but you enjoy both of them as being a place where everything is different; the Colorado River is the place over the Idaho rivers. And on the difficulty Cataract Canyon and the Grand Canyon are far more difficult than anything they have in Idaho.

Farquhar: You speak of difficulties: just what are the difficulties?

Marston: Well, of course the major difficulty is in putting a boat through a series of rapids. And then there are the problems of supply and what you do in case of accident, and this type of thing. The Colorado River has a much higher degree of isolation than the streams up in Idaho. But the problem primarily is transportation over the water course – let's put it that way – and your rapids, of course, are the major barriers.

Farquhar: What kind of craft did you go in?

Marston: Well, at those times, everything was oar-powered on both the Colorado River and in Idaho. We used these plywood boats - Nevills's type called a sadiron because they're shaped pretty much like an old-fashioned sadiron. That was before the advent of neoprene that came out of World War II, and before any attempt had ever been made to operate any power craft in any of this heavy water.

Farquhar: The Nevills's type of boat was used almost exclusively for quite a few years there in the forties, wasn't it?

Marston: What Nevills did was to make a success of commercial carrying of passengers through the fast waters along the Colorado River. And he was the first real successful navigator carrying passengers in heavy water on the Colorado River system. And he developed this particular type of boat – two types really, the punts on the San Juan and the sadirons that he used in the heavy waters on the Colorado. And they did a reasonably good job.

Farquhar: As I remember it, Nevills used to say, "You do the thinking and let the river do the work." Is that right?

Marston: Well, yes, that made a good cliché; it sounded good. [Laughter]

Farquhar: And of course all of those boats – I don't suppose that he invented the idea of facing the way that you're going.

Marston: No, on the Colorado River that was first done by Flavell back in 1896, at least in a transit of the Grand Canyon. I'm sure that Galloway had developed that prior to then because Galloway started on the river back in the early nineties, about 1893. And Galloway and Richmond went through the Grand Canyon in 1897 and they were using the technique where the boatman faced the stern. Flavell faced the bow, but he [Galloway] faced downriver.

Farquhar: The earliest attempts, the Powell boats, they rowed against the current.

Marston: No, no – they rowed with the current, the Powell boats and the Brown-Stanton boats, and the Best expedition, all had two oarsmen and then a steersman. And the two oarsmen were rowing downstream, with the current, trying to make way enough so the steering was effective – and the poor oarsmen couldn't see what was happening to them next.

Farquhar: They had a good many upsets, didn't they?

Marston: Well, quite a number, not nearly as many as they should have had, though, let's put it that way. They were lucky.

Farquhar: When you went with Nevills did you have any upsets?

Marston: No, no, I never – I'll tell you, Francis, [laughing] I was upset the first time only last August, when I was going through the Grand Canyon in a seven-foot sport yak. My first upset. (I have had another since then.)

Farquhar: You've probably been through the Grand Canyon now more than any one individual, haven't you?

Marston: Well, wait a minute, I've been through the Grand Canyon more than any man; there's a woman who's been more times than I have. These commercial people, you know, who make two or three runs a year, they get ahead of me.

Farquhar: Who's this woman?

Marston: She calls herself The Woman of the River, Georgie White. I think she's now been around twenty trips, and I've been fifteen.

Farquhar: In all the history of running Grand Canyon, say from Lees Ferry down through Separation Rapids, how many people do you think had been through the Grand Canyon before you began to do it.

Marston: Oh, about eighty. And then in 1949 we tallied a hundred persons. By 1954 the second hundred, and now the number runs just about five hundred.

Farquhar: That's going way through; you don't count me.

Marston: That's right, not the partial trip.

Farquhar: My wife and I went from Lees Ferry down to Bright Angel Creek.

Marston: You'll have to go in now at Bright Angel and go the rest of the way to get in the tally.

Farquhar: I see. Well, the chances for that are getting

slimmer all the time. Now, in all this work you've been interested in the geography and the topography and also the history of the Canyon, haven't you?

Marston: Yes, plus the technique of how they run. And I might go a little further, Francis, to say that I'm interested in what the river does to the people that are there.

Farquhar: That's a very interesting subject. I hope you're writing about that.

Marston: I certainly am, I'm struggling at it.

Farquhar: How's the book coming along?

Marston: Well, it's not doing very well right now because I happen to have a river trip in mind where I'm leaving next Monday to make a transit of Cataract Canyon and I have to see some things down there before they bury it under Lake Powell.

Farquhar: How much of the river has been altered by dams in recent years?

Marston: Everything down through the Grand Canyon now is different because they're controlling the water down through there and therefore you don't have these beautiful floods that used to go. And, of course, the San Juan is completely under control. Now, the Colorado River up above the junction of the Green is relatively the same as it was, but the Green River is controlled to the extent of about one-fifth of its flow by the Flaming Gorge Dam.

Farquhar: That Flaming Gorge Dam is way up in the Uinta Mountains, isn't it?

Marston: That's right, pretty close up to the Wyoming border.

Farquhar: And now the Glen Canyon Dam has completely altered the Grand Canyon.

Marston: Yes, it's an entirely different stream.

Farquhar: I remember when the Hoover Dam was built somebody who'd been running down below said that it wasn't any fun any more, they'd taken all the electricity out of the water.

Marston: It takes the real energy out, let's admit that.

Farquhar: So the days of running the Grand Canyon the way you've done it, beginning back in the days of Powell and contemporaries, they're over now, there's nothing like it anymore.

Marston: That's right.

Farquhar: So this historical work's based on the experience that you have, and you've gotten a great deal from the diaries, haven't you?

Marston: Oh, yes, I have at least one diary of every trip that has been through the Grand Canyon up until the last two or three years when the trips have been rather frequent.

Farquhar: And those diaries tell you a good deal about the characters, you say, of the people.

Marston: Very much so.

Farquhar: Do you think they're invariably truthful?

Marston: They're fairly truthful because most of these diaries were written without any idea of publication. Now, of course, a lot of them reached publication after having some rather severe editing, but some of them are pretty straight. The straightest, I might say – other than the Powell diaries that were published by the Utah Historical Quarterly – the two straightest that are in book form are Stone's trip in 1909 which entailed only very minor editing of his diary, and the Kolb trip, Elsworth Kolb's story which he wrote from his diary telling of his trip in 1911.

Farquhar: Was Powell the first one to go through the Grand Canyon.

Marston: Powell was the first leader of a party, in which six completed through the Grand Canyon; he's the first, there's no question about that.

Farquhar: How about this fellow White. Don't some people think he was the first one?

Marston: Yes, some people think he was. I'll tell you where he went; he went from where the Mancos joined the San Juan and then he traveled across the country to the Little Colorado, and when he talks about "we crossed the Colorado and camped" he meant the Little Colorado. And then he crossed the Little Colorado and came out at Grapevine Wash which is later known as Pierce's Ferry, and then he floated from there down from Pierce's Ferry to Callville where he was picked off a log raft on September 7th or 8th.

Farquhar: He hardly saw anything of the Grand Canyon.

Marston: He didn't see any of it. Well, from Pierce's Ferry he could look up and see the lower end of it, but he wasn't in the Grand Canyon at all.

Farquhar: There are some books and articles about it that are quite emphatic that he did do that. How do you reconcile the two statements?

Marston: Well, I'll tell you, you can sell a book if you put up a logical argument that makes it appear that something happened that people can get a little excited about and it'll make a sale, and so every once in a while somebody comes up with an idea along those lines. But I haven't found anybody who has made an adequate study of the whole thing; the one that came the nearest to it was Robert Brewster Stanton, and his argument, with James Chalfant's editing, came out in the Colorado River Controversies. Now, Stanton missed one of the most important things, and that was the reporting of William J. Beggs, and he never recognized Beggs' reporting, and that reporting goes through and creates a considerable fabric of the myth that White went through the Canyon.

Farquhar: So there's no doubt in your mind that Powell was the leader of the first exploration of the Grand Canyon.

Marston: No question about it at all.

Farquhar: As you look back on it now, what kind of a trip – he made more than one trip, didn't he?

Marston: He only made one trip all the way through the Canyon. His second trip stopped at Kanab Creek when he was fifty-one per cent of the way through the Canyon and he quit because, according to his statements, the water was too high, which would make the rapids below too dangerous, and also the threat of Indians. Both of those were good reasons, but not real reasons.

Farquhar: Isn't it true that the high water is sometimes safer than the low water?

Marston: That's usually true.

Farquhar: What about that time when some men left his expedition and went up into the Kaibab country and were killed.

Marston: There were three men that left that party at what is now called Separation Rapid and they climbed out and were heading for St. George. They were killed out there and there's a question still remaining whether they were killed by the Shivwits Indians or the Mormons. The evidence is very sketchy and there is a nice bit of research for somebody to spend two or three years to find out what the truth is – it'll take just about that length of time, I guess.

Farquhar: How would they find out?

Marston: Well, one of the great things about the Mormon people in that country was that they wrote lots of diaries and so it will take a lot of digging through diaries. That's probably the best way to get it. There's some evidence about it now, but not very much.

Farquhar: How many people actually went through the Grand Canyon in Powell's time? With Powell.

Marston: The entire party that ended, including Powell, was six.

Farquhar: Did they go through in one continuous trip?

Marston: Yes, that first party went all the way from Green River, Wyoming to the mouth of the Virgin, the six.

Farquhar: Powell left before that, didn't he?

Marston: No, he went all the way through. He was in and out on the second trip, in 1871-1872; he didn't make the entire transit from Green River, Wyoming, to Kanab Creek, in 1871-1872, he skipped a couple of places, but they were inconsequential.

Farquhar: In summary, then, we can say that Powell really was the pioneer in going through the Grand Canyon by boat.

Marston: That's right.

Farquhar: Who followed him?

Marston: The second trip through was Robert Brewster Stanton's party in 1890.

Farquhar: That was quite a few years later.

Marston: Oh, well, the way Powell wrote up his trip was enough to scare most people out. It frightened a lot of people, but it didn't frighten Stanton any, he was a spunky little fellow. His second trip he had probably one of the finest crews ever through the canyon, it would stack up very well with some of the best crews of today which are carefully selected.

Farquhar: As I recall, Powell didn't give credit to all the members of his party in his book.

Marston: Well, he didn't mention the members of the second crew, but he just told the whole story as if everything he knew about the river he'd learned on the first trip. He didn't mention the second trip at all, however a lot of people said that he used a lot of material out of the second trip and included that as part of the first trip in his book. But I don't find very much of that; there's some, a little bit, but not very much.

Farquhar: But the actual published report sounds as if there were one trip. Actually there were a few places where he put in things that happened on the second trip.

Marston: That's right. He dictated that report to the Smithsonian in 1874 --it was published in 1875 – and he didn't want to do it anyway and obviously that length of time after his 1869 trip there were many things that he would have forgotten, and which trip they belonged to. He's been rather severely condemned for that, and I can hang him for other things but I don't –

Farquhar: You're going to evaluate a good many of these things in this book that you're writing.

Marston: Yes, I am, very much so.

Farquhar: What is the present status of this book?

Marston: I have it virtually all done in rough form, and right at the moment, after I get through this tape here with you, I'd like to discuss with you the final form to put it in.

Farquhar: Well, it's going to be a monumental and definitive work on the history of river-running and particularly the Grand Canyon. Are you going to cover the upper part of the river?

Marston: Yes, I'll cover important trips. I find that I'm going to cover the river fairly well, everything except the Gila. Where it is not in the Grand Canyon I will not be as specific about it, I will sketch it very quickly.

Farquhar: How about this fellow Adams who used to write to Congress or something?

Marston: Oh, he played around down on the lower river and pushed up to the head of Boulder Canyon and looked at that big basin up above there which is now the mouth of the Virgin and that big part of the lake down there, and then he went up and later when he couldn't get in the Powell party up there at Green River, Wyoming, he jumped over and made a run part way down the Upper Colorado, in which he –

Farquhar: That was called the Grand River then, wasn't it?

Marston: Yes, the Grand. There's been a lot of shifting of the names of that, you know, between the Grand and Blue – they changed around.

Farquhar: As I understand it, the "Colorado" was originally applied to what is now the Little Colorado.

Marston: I believe so.

Farquhar: It just means red river.

Marston: That's right. I think that's true that that was the first application.

Farquhar: And then it moved onto the main river and you had the Grand and the Green uniting to form the Colorado.

Marston: And that "Little Colorado" became the Flax.

Farquhar: And then the political people in Colorado thought that the river must have been named for their state, and of course it was named two hundred years before the state.

Marston: I didn't hear that they thought that it had been named for the state; I just heard that they thought it would make a good plug for the state of Colorado.

Farquhar: Of course they were named for entirely different reasons. The red rocks over in the Garden of the Gods started the name "Colorado" for the state. And the "Little Colorado" with its red mud that came in flood time was quite a different matter.

Marston: I might say we saw a flood down at the mouth of the Little Colorado when we were down there last August and it wasn't red, it was pretty black. [Laughing]

Farquhar: Oh. By he way, we haven't mentioned the fact that my wife, Marjory, and I went through the upper part of the Grand Canyon, and you were my boatman – you and

Margaret were in the boat with me -- and Garth, your son, was Marjory's boatman. We had a pretty good trip.

Marston: Very good, that was a good trip.

Farquhar: And we got good pictures. Now, let's see. Besides this book you've written some articles, haven't you?

Marston: A few. I've avoided articles because while you advised me some time ago that I ought to get a few things into print in order to become known, at the same time I find that the writing articles does take time, so I've tended to avoid them. If anybody comes in and really wants one I'll write it. You take that thing I did for the Utah Historical Quarterly, that took me about a week, and a week of time is a week of time.

Farquhar: You did something for Colorado Magazine one time.

Marston: They took my diary, and that was the first trip ever made down the Dolores River.

Farquhar: And then you wrote a chapter or so for that Dinosaur [This is Dinosaur] book that Wallace Stegner edited.

Marston: That's right, I wrote a chapter describing the use of the rivers up there.

Farquhar: And what is this other magazine?

Marston: American White Water, a little magazine; however they have swung away over into the field of kayaks and that type of thing. I got separated from their type. But they had a series in their magazine on the various canyons and they wanted me to do a thing on the Grand Canyon which I finally did for them. I wrote it for them at first and they didn't like it because it indicated too much danger, so then I did a little mild editing of the thing.

Farquhar: What is your opinion of these people who want to run the river in kayak?

Marston: Oh, a lot of the sections of the river are all right for kayaks. Zee Grant put a kayak through the Grand Canyon, last year when he had --

Farquhar: Weren't some other people coming along behind him to pick him up?

Marston: Yes, and he also had some special pontoons. But there were a couple of kayakers who went through last year on this low water now held back by the dam. And I rather imagine that the Grand Canyon limited to some of the low flows as it is now from by Glen Canyon Dam will make a pretty fair kayak stream.

End of Oral History

Main Topics "Life on the Rocks"

Moab Geology
Geomorphology of Rivers
Paleontology of the Region
Geologic History of the Colorado Plateau
Riparian Ecology and Threats From Exotics
Origin of Mineral Deposits: Uranium, Potash and Placers

Clarence King and the Great Diamond Hoax

by Steve "T-Berry" Young

Introduction

AN EXCERPT FROM THE ARIZONA MINING JOURNAL: Report of Clarence King, United States Geologist. *San Francisco, November 11, 1872. To the Board of Directors of the San Francisco and New York Mining and Commercial Company: I have hastened to San Francisco to lay before you the startling fact that the new diamond fields upon which are based such large investments and such brilliant hopes, are utterly valueless, and your engineer, Mr. Henry Janin, the victims of an unparalleled fraud. Having convinced you verbally that my investigations have been made upon no other than your own ground, I beg, herewith, to give a brief statement of my mode of study, and its unanswerable results. Feeling that so marvelous a deposit as the diamond fields must not exist within the official limits of the geological exploration of the 40th Parallel, unknown and unstudied, I availed myself of the intimate knowledge possessed by the gentlemen of my corps, not only of Colorado and Wyoming, but the trail of every party traveling there, and was enabled to find the spot without difficulty, reaching there on November 2nd.*

After examining the camp ground, water notices and general features of Diamond Mesa, I next traced the boundaries of your claims, and then began to study the distribution and mode of occurrence of the precious stones.

Our first day was devoted to the sandstone table rock, at the head of Ruby Gluch, where about all the stones collected by your parties have been gathered, and had our critical work ended with the close of this one day, we should have left the ground confident believers in the genuineness and value of the fields. My suspicions were, however, aroused early in the second day's work, and at once determined to make an exhaustive series of 'prospects,' of which the following are the results:

MOST RIVER RUNNERS THINK OF JOHN WESLEY POWELL and his regional survey when they think of "the opening of the West". But Powell's survey was only one of four surveys that trampled around the areas west of the One Hundredth Meridian. Names that should ring a bell, in the topic of western surveys, that were as important as Powell's would be, for example, Lewis and Clark and John Fremont. More names might include the not so successful surveys like, John Gunnison and Zebulon Pike.

In the history books, next to Powell's survey, you will see the names of three more great American surveys that occurred around that time Powell busied himself around the Colorado Plateau. They are: 1) Clarence King and his *United States Geological Survey of the Fortieth Parallel*, which surveyed a swath of land north and south of the Union Pacific/Central Pacific rail line from California to western Colorado. 2) *The United States Geological and Geographical Survey of the Territories*, lead by Ferdinand Hayden, which first started in

Nebraska, then into the Yellowstone area, and finally into south-eastern Wyoming, most of Colorado, and eastern Utah. 3) *The Geographical Surveys West of the 100th Meridian* under Lt. George Wheeler, which surveyed the area of southern California to New Mexico, with a little up-river boat excursion into the lower Grand Canyon. Most of the place names we now see applied to the great eye-catching features of the West were documented and created by these National surveys.

Clarence King. From the book *The First One Hundred Years of American Geology;* Yale University Press.

Since King, Powell, Hayden and Wheeler were each vying for appropriations from Congress, things were accomplished on very tight budgets (especially Powell). However, time and money were often wasted by duplicating the efforts of others (especially Wheeler). The National Academy of Sciences advised Congress to consolidate the National surveys into one organization and, in 1879, Congress created the United States Geographical Survey (USGS) as a bureau under the Interior Department. King was appointed as the first director of the USGS; Powell succeeded King in 1881 (King decided to enter into the commercial mining industry).

Before King finished his survey and embarked on his bureaucratic highway with the USGS, an interesting thing happened to King and his geologists/surveyors in 1872. The following story is about how the Diamond Mountain (s) near Dinosaur National Monument got their names, and how Clarence King was at the center of the controversy.

CLARENCE KING AND THE UNITED STATES GEOLOGICAL SURVEY OF THE FORTIETH PARALLEL were well under way studying the marvels of Nevada and Utah when reports of a large diamond field had appeared from somewhere in the western United States—in the year of 1871. Of course the leader of this complex survey realized if a huge diamond field had been located in the land surveyed by his colleagues, what would this say about the thoroughness and quality of the work being done? Also, the scientists in the survey had diverging thoughts—they began to dream about finding the fields and pocketing a couple choice stones to offset their arduous labors and low pay. So, from these outlooks, the King Survey had a desire to investigate this rumor and document the diamond field before the termination of the survey at hand.

It all started sometime in early 1871 when two miners named John Slack and Philip Arnold deposited, for safe keeping into the Bank of California, a large bag of fine-looking stones. Rumors about the two dirty prospectors and their large bag of diamonds spread through San Francisco amazingly quick. After the deposit, the prospectors left town long enough for the most influential business minds to play into the consistently growing rumors about the source of the diamonds. After some time, a group of interested wealthy parties found the miners and coerced them into forming a mining company. All parties involved with this grandiose diamond mine moved slow, of course, to cautiously protect themselves from fraud. Slack and Arnold, making a show of sincerity to their new partners, made a "good faith" trip alone to prove the validity of the diamonds in the field and to bring back more. This so called questionable trip brought back a second sack of fine stones, that were given to the expected principle partners. The partners, upon receipt of the stones, were amazed by their lovely charm. The new prospective partners were so enamored by the diamonds that it was hard to send the stones off to New York for appraisal. In New York, Mr. Tiffany (who founded the store Tiffany's) said the diamonds were of good quality, but not of exceptionable value.

The initial investment by the principle partners was sure to be an excellent moneymaker, if all was as perfect as it seemed to be. So the last hoop before incorporating was for some of the partners to see the site for themselves, with the help of a mining expert by the name of Henry Janin. Henry Janin's reputation was well known for clear and concise judgments, which had made numerous individuals wealthy in California during the Gold Rush. When the team returned from the still secret area this mining expert, who had yet to make a mistake on any assessment, gave his approval by wanting to become a principle partner. With this proof that the site existed, the investors began calling it the "New Golconda" and planned to make San Francisco the diamond capital of the Western World.

July 30, 1872 was the filing date of incorporation for the *San Francisco and New York Mining and Commercial Company*. Under the original agreement the two prospectors would sell their claims to the investors for $600,000 (including another $30,000 for expenses). Stock for the company started at $80,000 for twenty five investors; this $2,000,000 became the start-up money for the operation before the winter of 1872/73. Philip Arnold, who had power of attorney for John Slack, excepted the $630,000 for the two men and soon disappeared. Since it was late in the season and winter was already setting in, the mining company planned to avoid development of the site till spring .

During the summer of 1872, Clarence King and his men gathered the last bits of data needed to complete their survey. The rigors of the land and the problems of field life were not easy, especially when the West was alive with rumors of diamonds. For over a year these men went to bed dreaming of

the day, while surveying, that they would come across a field of diamonds; each of the dreamers imagined filling their pockets full of diamonds. Unfortunately, those dreams shattered in the fall of 1872.

King and his associates perceived the coming end of the Fortieth Parallel survey. King's confidence in his own abilities nagged him. What if this wonderful diamond field was located in the area studied by the Fortieth Parallel survey and they missed it? His men never even found a precious stone let alone a geological area that could support such a thing in the quantity that the rumors lead people to believe. Were they wrong on some of their conclusions about the geology? One thing was sure, if the diamond mine was in the land surveyed by the Fortieth Parallel, King's reputation would be on the level of dirt—in the tailings pile.

Towards the end of the summer King narrowed down the possible areas of the rumored diamond fields. The investors from San Francisco had spent very little time visiting the fields, nor applying for the necessary mineral and water rights to the area. One thing was for sure, their access to the area was by way of the Union and Central Pacific rail line, which ran through Wyoming. Could they be traveling all the way to Arizona by horse, where the geology best supported the idea of diamonds? The amount of time the diamond miners spent in the field was to short to support a long pack trip to Arizona, but King did not rule that possibility out until a meeting with his geologists the following October. The most obvious thought was—the area was within a couple days of riding from the only railroad route across the West at the time.

At the end of the season's field work several of King's geologists were planning to meet with King in San Francisco to discuss the diamond rumors. King had planned the meeting after the work season to keep his men on task. It was on the way to this meeting in San Francisco, in October, that Samuel Emmons and James Gardner boarded the train in Nevada to find several men that could be stereotyped as California diamond financiers. Before learning who they really were Emmons and Gardner learned some clues about the location of the mine from these train passengers. These clues and a thorough knowledge of the area associated with the Fortieth Parallel survey, lead the two men into some conclusions about where the diamond fields could be. Before King even got to the arranged meeting in San Francisco, his other geologists met with Emmons and Gardner and the four pinpointed the area; the two other geologists were A. D. Wilson and James Hague. As it turns out, simultaneously (though King was not at the meeting yet), King and his geologists deduced where the site was according to their knowledge of the area and other clues they had found in Wyoming. When the geologists were reunited with their boss, the two theories were interchanged with the very same conclusions.

Between October 20 and November 10 King, Emmons, Hague and Wilson were away from the comforts of San Francisco trying to find out the truth about the rumors of diamonds. Very quickly the team found the mining claims based on their deductions (in the very north-western corner of Colorado). Wilson was the geologist who spent the most time in the area for the survey and was the reason for finding the actual site so quickly. The icing on the cake was finding the

S. F. Emmons

mineral and water rights notices posted on the trees. The team also noticed a "table shaped rock" marking the center of highest concentration; as you left that site of highest concentration, the odds of diamond recovery were smaller. Normally if diamonds are in an area of high concentration they will wash down side gullies and spread out through natural means. The gullies leaving from the table rock showed no sign of diamonds. The geologists were also baffled as to why rock formations that normally produce diamonds were not to be found in the area. Another question arose as well: Why was it they found a ratio of diamonds to rubies that was consistent throughout the area (Mother Nature is very chaotic)?

Did they stumble on some enterprising new geological erosion patterns never seen before? Up to this point King and his men thought they had found a real diamond field in an odd geological place, but finally they stumbled on the truth. Near the table rock one of the men had started to slowly remove the dirt from a large area. Eventually the scientist noticed a pattern in the dirt. Diamonds would be found at the bottom of a cylindrical dirt anomaly. It was soon figured out that the cylinder shaped area above the diamond in the dirt was from a rod being pushed into the ground to make a hole. Bringing attention to this, the men slowly covered the area away from the planted site and found other refilled holes in the dirt. Slowly and systematically they studied the area and found more clues to support the signs of fraud. As they found more obvious signs of the fraud James Hague stumbled on the biggest and most obvious clue to hoax, a cut diamond was found planted in the soil (a cut diamond is a diamond that has started to under go the human change needed to become jewelry.).

Now enters the sketchy, dark-cloaked bad guy! Up comes riding, to the cold and numb surveyors, J. P. Berry who followed King and crew to the site with eight of his henchmen. J. P. Berry, a mine promoter formally from New York, had the railroad watched all summer to watch for people and/or their trail coming to the mining area. His motive was to sell off the mining rights around this area to other investors. After King and crew told Berry the truth it seemed obvious that Berry didn't really care about the mine's validity. He would sell it anyway and no unsuspecting investor would know about the fraud until after Berry collected his money. As Berry left to bivouac at his camp the geologists needed a plan of action to get King to San Francisco before Berry could start a fraudulent diamond rush to the area during the winter. So that night King rode to the rail line, 45 miles away, in extremely cold weather with one river crossing; he caught the train to San Francisco the next morning.

When King arrived in San Francisco he met with the

owners of the now created diamond company and told them the truth. The truth resulted in yet another trip to the site, before the dead of winter, in sub-zero temperatures, to show how the planting of the diamonds took place. If King's information wasn't enough, soon after, a report came back from England where all the previously collected diamonds had been shipped for sale. This report claimed that the diamonds were worthless and, in fact, had been documented and sold over a year previously to an American who paid $30-35,000 for an enormous amount of worthless, garbage diamonds and rubies.

It took years to pay back stockholders and find the swindlers. By now Philip Arnold was in Kentucky living the good life. He had bought a 3000-acre farm and built a large house with a strong-arm guarded safe that contained over $300,000. It was odd that Arnold stayed visible after the obvious fraud. He was well liked in Kentucky, so it was impossible to find a judge to give an impartial trial. The mining company settled out of court and got back only $150,000. Slack on the other hand was never found and questions arrived as to whether he ever got his share. Maybe he was buried somewhere in a shallow grave, and his money went to buy Arnold's house and other fine things.

The actual site of this hoax is in the very north-western corner of Colorado, north of Brown's Park. Somewhere about 3.5 miles south of the Wyoming border and 7 miles east of the Utah border. The author, though, has read that the Diamond Mountain east of Vernal ,Utah, has the above written history attached to it. So you have a choice of two localities to tell your story from. There is sound proof that the site exists in Colorado. On the train ride east, to access the place of the hoax, they all got off on the west side of the Green River and crossed the river above Red Canyon, which means the site is on the east side of the river. Diamond Mountain, near Vernal, is on the west side of the river.

One other note: The Uintah Mountains, in north-eastern Utah, are also home to numerous peaks named to honor members of the Fortieth Parallel survey, such as, King, Emmons, and Marsh peaks. Also included in this roster are the peaks named for members of the Powell and Hayden surveys.

Resources

The Great Diamond Hoax. The author is now forgotten, but the book was published turn of the century and was one of the investors swindled. The book was located at Idaho State University in Pocatello.

The Diamond Discovery of 1872, USGS Library in Denver, Field Records Library, see #1162-A from NARA RG57, #1113-S. F. Emmons.

Clarence King, A Biography, Thurman Wilkins, and Caroline Lawson Hinkley, published by University of New Mexico Press, Albuquerque.

Great Surveys of the American West, Richard A. Bartlett, published by University of Oklahoma Press.

Unfortunately, everyone who was part of this hoax documented a different story, creating a serious challenge to sort out this information cohesively.

Eddying Out

by Eve Maher

Q. Where do retired river guides go?
A. To the old floats home!

Oh, pulease! O.K., how about,

A. They spend their twilight years traveling and living comfortably on their boatman's pension.

Very funny. The first answer is more realistic.

Q. So where do they go?
A. Well, hopefully, they launch into that "other" world, carrying as much of the river as they can in their back pocket.

Anyway, that's my goal. Dusty Simmons suggested I write a few goodbye thoughts when I told her, "Nope—absolutely no more—my EMT license is expiring and I have another job. I really mean it this time—no more commercial trips. Is she trying to call my bluff? Whatever the case, I jumped at the chance to say a big 'bye' to the river community at large, contemplate out loud, and set the record straight. (Those strawberries were going bad anyway, a guest must have snuck that gorilla suit along and most people did remain clothed.)

How twelve years do fly. It seems like just a couple springs ago it was my turn to be the newbie guide, camping out along the river road, getting the bejeesus scared out of me by the unexpected spectacle of the *Canyonlands by Night* show. Then one day a few seasons later I woke up, and, like so many others I know, realized I had myself a career.

Looking back, I'm stunned by all I learned. For starters, I was forced by various "Tag Hag," river *Divas of Style* to serve a long, arduous apprenticeship in the *Art of Sarong Tying*. Besides the 303 ways a sarong can cover various body parts, I discovered it's usefulness as a sail, a sling, a hammock, a Z-drag component, a beverage drag bag, and as a way to subdue an entire hot and grouchy French family of four. I also trained in sand castle design, studied B.S.ing as a lifestyle, and gathered an extensive array of swimsuits. Somehow along the way the river skills happened too and I became a guide.

For everyone who has chosen to work along the last semi-uncontrolled bit of the Colorado you know the experience of being a part of this river's natural ebb and flow. We've all cowered (admit it) through its temper tantrums, or laughed almost as often as we took a breath during its calm, sweet days. Because of this I came to understand the River as a living being. Subsequently, for a short time, I became superstitious, sacrificing chickens and watching the skies for the right sign that would tell me the river gods were going to smile on me and my run that day. It took some friends suffocating under a river of snow in the La Sal Mountains (miss you Mara) and a few deep, scary swims of my own to realize it's real truth, and

that is, that nature didn't necessarily value our little human life, or the quality of it, more than our little human death. Worrying about all that stuff was up to us. All of us.

So I notice, just now as I move away from guiding professionally, this truth is something that deep down every river person worth the sand in their belly button knows. You bet we pay our respects to the River (why push it?), but when my plan 'A' run at the Big Drops turns into my plan 'B' run and so on down through the entire frickin' alphabet, I'm not praying for benevolence from the rapid as much as I'm grabbing for that thank-you, thank-you, thank-you throw rope from my friend. And it's not just co-workers. It reaches beyond our immediate cliques or company loyalties. You people, working season in and season out, are a life affirming thread running through these canyons. Yes, you drank all my Tanqueray and Tonic, threw banana walnut pancakes in my boat, finagled the best camp, chatted my ear off as I tried to fall asleep next to you, snored through the night, slept through breakfast and took the best/only take-out spot. You've also taken, without hesitation, that 6:30 AM cold spring dive into the drink even though it was MY sleeping bag that got blown in. You've given a tow to boaters you've never met, as they try to row off Reservoir Powell. I've witnessed you picking each other up, dusting each other off, watching each other's back. We've helped dry each other out, which will always work a zillion times better than any mandated drug test. Over the years you've nursed me through hang ups, break ups and rig truck break downs. You grew me up.

Big Linda told me once, years ago, that after 100,000 river miles your ammo can just turns to gold, and that's the boatman's retirement plan. Well, I just checked, and you know what Linda? It's been gold all along.

Thanks everybody.

Photo: Eve in Westwater

Mining Company in Westwater Canyon Pulls Out as Part of Lawsuit Settlement

*A press release from **Friends of Westwater**, Grand Junction, Colorado: March 22, 1999.*

Pursuant to this week's settlement of a lawsuit brought by the U.S. Department of Justice against a mining company, spectacular Westwater Canyon along the Colorado River will be protected from gold mining. This settlement is a triumph for Friends of Westwater Canyon, a Grand Junction Colorado-based river conservation group, which succeeded in its four year effort to halt on-going gold placer mining activities inside of the Westwater Canyon Wilderness Study Area. Westwater Canyon is located on the Colorado River in Utah near the Colorado-Utah border and is managed by the Bureau of Land Management.

The United States Department of Justice, after filing a lawsuit in federal district court in Salt Lake City against Pene Mining Company of Grand Junction in late 1998, announced that it had settled its claims against Pene Mining for trespass, noncompliance with environmental regulations, and on-going impairment of a wilderness study area. The settlement includes the relinquishment of all placer and lode mining claims within the WSA and the immediate removal of mining equipment, backhoe, and trailers. Reclamation of disturbed lands will become the responsibility of the BLM.

Upon hearing the news from its legal counsel, the Western Mining Action Project of Boulder, Colorado, Friends of Westwater President, Greg Trainor, thanked all of those who contributed their time and their money to support this effort. Trainor said: "We could not have done this without the support of the Utah Guides and Outfitters, the Southern Utah Wilderness Alliance, Colorado boaters and outfitter organizations, the Mineral Policy Center, and a host of individuals who contributed to save a very special place." Trainor continued: " This is a great victory for a true grassroots organization."

The settlement also closed a long standing dispute over the legality of the mining claims held by Pene Mining. In 1998 the Department of Interior issued a separate complaint against Pene Mining declaring the mining claims invalid. Friends of Westwater and the Southern Utah Wilderness Alliance were parties to that case. This case, pending before an Administrative Law Judge in Salt Lake City, was filed after a lengthy mineral validity exam concluded there was no economic mineralization at Westwater. Earlier the Interior Department had withdrawn the Westwater WSA from mineral entry for 50 years. The relinquishment of the claims will moot the claims dispute since there are no more mining claims in the area that has been withdrawn from new claims.

The battle regarding Westwater Canyon is not over. Westwater Canyon WSA, part of the Citizens Proposal for Wilderness in Utah and an area recommended by the BLM for wilderness needs to be officially protected. Until that happens, the Friends of Westwater will be working to help the Utah Wilderness Coalition and the Southern Utah Wilderness Alliance to achieve its wilderness goals in Utah.

Trainor concluded: "FOW is not against mining, per se. It

is against mining when conducted in the wrong places, in the wrong way, and without adequate oversight. The fact that mined land reclamation and environmental repair remains for the public to complete at Westwater is one of the problems with the Mining Law of 1872 and the administration of our public lands."

"It was a shame that the federal government was forced to spend resources and money in their multi-year effort to remove uneconomic and illegal mining," noted Roger Flynn, attorney with the Western Mining Action Project in Boulder, Colorado, which represents Friends of Westwater. "However, the BLM should be applauded for recognizing that some places such as Westwater Canyon are more precious than gold.

Unfortunately, the 1872 Mining Law which allowed the filing of the mining claims in the first place is still on the books and continues to hold other special places around the West hostage."

FOW thanks the helping hands:

Dave/Lori: You were there when we photographed the illegal drilling. **Peter:** You convinced the BLM to proceed with a mineral validity examination, confronted the drillers about their drill pads and off-road work, conducted your own mineral validity studies, reviewed the BLM mineral examinations, photographed the mine site from the rim and put together the pictures that told a thousand stories. **High Country News:** You broke the story in 1995 and pictures of that skinny little ex-BLM ranger trying to stop the deletion of 1,800 acres of Westwater from the Utah Wilderness bill. **Utah Guides and Outfitters:** You passed resolutions supporting the protection of Westwater, bought t-shirts, sent money. **"The Rio"** in Moab: You sold more t-shirts. **Colorado River Outfitters Association:** You dedicated conservation funds for protection. **Aimee and Mineral Policy Center:** You gave us direction when we didn't know where to turn and helped us find Western Mining Action Project. **Puck:** Your help with membership lists and maintaining the e-mail lists helped get the word out. **SUWA:** In 1995/1996 your staff kept in touch daily. **Colorado Plateau River Guides:** John, Dusty, Susette, Michele, T-Berry, and Darren you couldn't hold your outrage and THAT kept us going. **FOW Board:** you came to all the meetings and never doubted we would succeed. **Skip:** You got us into the solicitor's office. Go Vols! (Skip and Bruce Hill are alums of Tennessee!) and spent a fortune of your own money in phone calls and copying charges. **Steve:** Thanks for helping Skip with his original report and testimony to the Utah delegation. **Kate Kitchell:** Thanks for the 50-year withdrawal and being fair to all sides. (When you beat your competition, you want them doing their best.) And finally, **Ron Pene:** If it wasn't for you tearing up the slopes and gullys at Westwater, none of these great people would have ever gotten together...

Congratulations FOW!

Questionnaire Summary

1998 Summer Issue, The Confluence

Compiled by John Weisheit
Secretary/Treasurer, CPRG

For those who participated in completing the questionnaire thank you for your time and commitment to help this organization direct it's course. The following is a results summary with commentary.

The number of years that participants have guided:

It would appear that CPRG is mostly comprised of senior guides.

High: 18 years
Low: 3 years
Average: 12 years

The river reaches where we guide the most:

The answers surprisingly resulted in several ties and are thusly recorded.

1. Horsethief, Ruby and Westwater canyons
2. Canyonlands, Grand Canyon and San Juan Canyon
3. Moab Daily and Dolores River
4. Desolation and Gray canyons, Green River Daily, and Labyrinth Canyon
5. Dinosaur National Monument

Other rivers: *Some participants included river reaches that indicate many members actively participate in private trips. It would appear that some professional guiding is done by the membership on the Salt River, Verde River, and the Rio Grande River.*

It has been suggested that we change our name to (for example) *Colorado Plateau Guides* and become an organization for guides that conduct trips both on the river and the land. What is your opinion on this issue?

The majority opinion is to keep CPRG orientated to serve river guides. Comments are as follows.

- Too little to late. The heart of CPRG is the river. The change would seem like an unconvincing political gesture.
- Keep it as it is.
- I think its fine just the way it is.
- I would like to see CPRG focus on the river.
- I prefer to remain a river guides organization with river emphasis.
- No. Keep it an organization of river guides. I think there is too much difference in issues between land and river guides.
- No way. Maintain your river focus. If we get too broad, we get spread too thin.
- If you've got 20 "land" guides knocking down the doors ready to carry the flag—do it. If not, stick to the river focus.
- The difficulty of focusing on two separate issues should be apparent after seeing what we've been going through just dealing with rivers. Are there four or five totally dedicated land guides willing to do the equivalent amount

of work that John, Susette, T-Berry, and one or two others have done? Spreading ourselves too thin will be detrimental in the long run. On the other hand I have no problem seeing letters regarding shared issues in The Confluence.

- I think if people want to be involved and contribute to CPRG, then great! What involves us on the river, involves those on the land! We're all connected as guides.
- I agree. Education of the Plateau can then circulate into a larger audience including jeeps, canyoneers, hikers, pilots, and bikers.

We are moving forward with the concept of hiring a Director to conduct guide training programs; this would include an office for CPRG. What is your opinion about this issue?

The majority opinion is to proceed; perhaps with caution and sound guidance. Comments are as follows.

- As long as it doesn't take money away from The Confluence.
- Makes sense, but charge a nominal fee.
- If the grant money is there and this person can also raise the money—do it. Or, if the demand for guide training can help offset the cost of the Director via fees—sounds good.
- How would CPRG determine this hire process for a director? Where to advertise? What credentials would the applicant have to have? Where would the money come from for salary, rent of office space, office supplies, travel fees? What are the duties of director? I would want to know and the membership would want to know?
- Holy Shit! Where's the money going to come from? I watched the AMGA (American Mt. Guides Assoc.) go from running from an outfitters closet to a place with two full time paid staff-both respected guides, and real office equipment. They did this by getting AMGA board members with deep pockets and a love for climbing to get things off the ground. It was sort of like inviting your favorite rich clients to be board members. Nice folks, pretty much wannabes, but it worked. Then, of course, there were the deep pockets like Yvonne Chouniard & REI that got things going, too. Is it possible to get large national manufacturers to contribute to a regional group? Now, on to the training issue. There are some moderately to completely incompetent people who want to become river guides. Is it OK to send them through a course and call them river guides? It is perfectly possible to pass all the required courses and still be useless to dangerous out there. What if they don't have the head for emergencies? What if they don't have that ability to anticipate a guests needs? What if they are trustafarians who just don't have that down deep Puritan work ethic that comes with the need to make money—not just be someone who does a lot of river trips? Is there a way to quantify that and therefore be able to deny them the "Guide Certification" without it being a popularity contest? One response could be that it is up to the outfitter to decide to hire this person, but what is the purpose of doing the training program in the first place? Is the purpose to actually teach the necessary skills to be a quality guide, or is it to allow outfitters to tell their clients and insurance companies that their guides graduated from the CPRG Bronze River God School and therefore are professionally qualified to interpret their vacation for them, and make sure they are alive at the end. Boy, you think there's a wait list for Westwater, the Yampa, Grand, and etc., now wait till these courses have been around for a while.
- Let's do it. Tom Corcoran would make a good Director.
- Probably a good idea. Economical?
- Good idea
- Sounds fine.
- Yes!

The board of CPRG has endorsed the mission statement of Glen Canyon Institute, which is to restore a free-flowing river through Glen Canyon. What is your opinion on the issue of draining Reservoir Powell?

The majority opinion supports the CPRG board's decision (Fall, 1996) to endorse the mission statement of Glen Canyon Institute (GCI). Comments are as follows.

- Drain it! If we don't endorse the mission, we might have to change the name to Colorado Plateau Reservoir Guides.
- I agree.
- I think that it's appropriate for the organization that has stated in it's mission statement "protecting the rivers of the Colorado Plateau" to endorse the draining of the Powell Reservoir.
- Mo faster—mo betta! Good job CPRG board of directors!
- Of course support the draining of Lake Powell.. The silt, flood control, salinity vs. concrete issues of the Lake itself have barely been addressed as it is, let alone the attention the downstream effects are just starting to receive. If all we can do for the next 50 years is draw attention to these issues we'll at least be ahead of the game when it comes time to actually do something about the dam—which is an inevitable certainty.
- A great experiment.
- Go for it! As long as we can run Cataract Canyon to Hite Marina without trouble.
- Do it. Support GCI.
- It's fine to endorse the mission statement, but let's not spend very much of CPRG's time or money on the cause—that's for Glen Canyon Institute to do.
- I am not convinced that we should drain it.
- I do not endorse draining Powell. I would endorse the study of the possibility and alternatives. I'd like to see an article of what GCI means to achieve by draining Powell. What the problems they think they'll resolve and I'd like to see an article from another point of view. Both saturated in science.

What can we do to improve our journal *The Confluence*?

The members like The Confluence, especially the history articles. We need to purchase high quality software to improve the graphics of our journal, and to better understand and utilize computer technologies. Special features are currently in the making which include a biography of Otis Marston, a synopsis of Desert Waters 98, Desolation Canyon and the San Juan River. Comments are as follows:

- Get a photo scanner and Photo Shop program. It's less expensive than you think (I can't make out anything of the most recent cover photo). I love the historical articles and the simple layout/format.
- I look forward to The Confluence and the historical perspective that some of it's articles provide on different

rivers. Also appreciate the info on the dam and reservoirs.

- Improve photo quality; access a better scanner, printer???? Give the editor a raise.
- Can we get a symbolic relationship with a color magazine? Some of our articles deserve color photos.
- The Confluence is pretty good the way it is. I am fully in favor of maintaining an open door policy on all submissions regarding content. Points of view that are neither vituperative nor false all deserve a hearing. Its good to know what the enemy is thinking.
- I like the historical info.
- Keep John Weisheit as editor and have him write more.
- Do something with those terrible photo reproductions. They're worthless.
- I really enjoy it as it is.
- Great job! You guys are amazing. I would like to do what I can, but am very busy like you. I don't know how you do it.

Would you be interested in helping produce *The Confluence?* What possible contributions could you make? We especially need people to help produce an oral history project; we also need artists.

- Yes. I can provide Colorado Plateau themes about Everett Ruess, Marlboro Adventure Team, and draining Reservoir Powell.
- No—it's a thankless, time-consuming job. Actually, I'd like to see it done on Pagemaker. Maybe I will help with that.
- I'm currently working on oral histories for The Confluence and have an assistant doing a video from the San Juan interp trip of 1998. Possibly for sale Spring 1999.
- Yes, I would be interested in helping produce the confluence. I have a PC with Microsoft Word 6.0.
- Not at this time.
- My grandfather has photos of Glen Canyon in 1955. I could do something with that.

Is there another issue that you would like to address?

- Sure—why don't motorscaters pay a recreation fee at Reservoir Powell? Why don't flightseers pay to fly over CNP or Arches? And why do we pay so much to float the rio?
- Educational influence (Moab Information Center lectures or spring interp) of Navajo, Ute or other Native American influence on the Colorado Plateau. Working with search and rescue for a training opportunity on the San Juan or the Daily.
- How about updates on the river management plan? Perhaps I should get off my ass and get in touch with Dave Wood on that one. What about unionization? Ha Ha Just kidding. What about illegal drug testing?
- I would like the river from 32rd to the Loma launch to be life jacket optional.
- Please feel free to contact me regarding issues in Dinosaur.
- Increased canoe activity on the Green River to The Confluence.

Thanks again for participating in this questionnaire.

1999 Professional Guide Training

Swiftwater Rescue Technician I & II

by The Rescue Company
Head Instructor: Tim Kellahan
Hosted by Sheri Griffith River Expeditions

Swiftwater Rescue Technician I

Prerequisite: Must be 18 years or older. This class is an intensive three-day, 30-hour program. This includes developing self-rescue skills, controlling in water rescues, understanding hazards and obstacles, setting up basic technical rope systems and understanding swiftwater dynamics.

Swiftwater Rescue Technician II

Prerequisite: Swiftwater Rescue Tech I. This class is a 20-hour advanced level program that will include rescue scene management, advanced rope system, stokes litter operations and search and rescue organization.

When: May 7, 8 & 9, 1999—SRT I
May 10 & 11, 1999—SRT II
Where: Moab, UT
Times: 8:00 a.m to 6:00 p.m.
Cost: SRT I—$300.00 ($100.00 deposit)
SRT II—$200.00 ($100.00 deposit)
Registration: Contact Scott Solle at (801) 467-6273 in Salt Lake City or Jeff Brown (435) 259-8229 in Moab.

Westwater River Rescue

By Canyonlands Field Institute
Instructors: Barry Miller and Rachel Schmidt

April 23-25. For experienced boaters (Class III), river researchers and rangers, course starts with a full-day class session in Moab followed by a river trip on Westwater Canyon. Special considerations for rafting high-volume rivers: instream rescues, rigging, swimming rapids, righting flipped rafts, Z-lines, safety talks, rescue scene management. Meals included; boats/logistics provided; 25-hour course certificate.

Fee: $300.00 ($285/CFI members) **Deposit:** $100.00

Canyonlands Field Institute
P.O. Box 68
Moab, UT 84532
1-435-259-7750
1-800-860-5262
Email: CFInfo@canyonlandsfieldinst.org
Web: www.canyonlandsfieldinst.org

Canyonlands Field Institute also provides interpretive courses for guides on a per request basis at reasonable rates and flexible schedules. Please contact CFI for more information.

THE A. G. TURNER INSCRIPTION(S)

By Jim Knipmeyer

After running through Rapid 12 in Cataract Canyon (Belknaps' Canyonlands River Guide), an observant boatman looking back to the right bank might dimly espy a faded black paint inscription reading simply, "A.G. Turner." This is the signature of Alonzo G. Turner, Glen Canyon prospector and miner, and was most likely left during his solo river voyage of 1907. While this inscription has no date (at least none that can be read at the present time), two other reported A. G. Turner inscriptions above and below this one are accompanied by the year date of 1907.

It was the Kolb brothers who, during their movie-making boat trip of 1911, first questioned who A.G. Turner was. In their book Through the Grand Canyon from Wyoming to Mexico, author Ellsworth stated, "At one point in the lower end of Cataract Canyon we saw the name and date A.G. Turner, "07." A few pages farther on, he explained, "A short distance below this [the Dirty Devil River] we saw a tent, and found it occupied by an old-timer named Kimball. Among other things he told us that he had a partner, named Turner, who had made the trip through the canyons above, and arrived at this point in safety. This was the man whose name we had seen on the walls in Cataract Canyon."

This Turner inscription reported by the Kolb brothers, however, is evidently not the one remaining at Mile-206.6. Raymond Cogswell, a member of the 1909 Julius Stone river expedition, mentioned an "A.G. Turner 1907" signature painted in- black at Dark Canyon Rapid. In the Kolbs' individual journals of their 1911 trip, they both relate seeing the Turner name during the same day they portaged Dark Canyon Rapid. This, obviously, is some 24-miles below the one still to be seen today, and fits much better with the book's statement "in the lower end of Cataract Canyon."

Lon Turner (he was always referred to with this shortened version of his first name by people who had known him), according to the epitaph carved onto his gravestone, was from Sharon, Pennsylvania, just inside the Ohio state line and not too many miles south of the shore of Lake Erie. Figuring from his age when he died, he was probably born sometime in. 1854.

In a 1965 newspaper article by Hanksville, Utah, resident and local historian Barbara Ekker, whose family had known Turner, after Cass Hite's arrival in Glen Canyon in the fall of 1883, the news soon spread of gold on the Colorado River and the canyon became alive with prospectors. "Lon Turner was one of these." This is substantiated by fellow prospector and miner Billy Hay, who said, "I was instrumental in practically all of the developments on the Colorado River in the last 30 years where I spent most of my time up to 1914. Messrs. Kimball and Turner, L.M. Chaffin and myself were practically partners all of that time." Thirty years previous to 1914 would have been 1884.

There is also an unsubstantiated report that before going to the Glen Canyon area Turner and Frank Kimball owned a ranch in the present Fruita, Utah, area which they called Sulfa Ranch (this would be where Sulphur Creek enters the Fremont River in the heart of what is today Capitol Reef National Park). It was said to be the first ranch in that area. However, National Park Service records show no mention of settlement or deeds of ownership by either Turner or Kimball.

According to a Wayne County, Utah, history, there was a Benjamin G. Turner family who arrived and settled in the Loa-Lyman area, not too many miles west of Fruita, about 1879, and a Lorenzo Turner who settled in the Blue Valley area, not too many miles to the east, soon after 1883. But both of these families were staunch Mormons, while Alonzo Turner's gravestone epitaph states that he was a member of Knights of Pythias Lodge 398 back in Sharon, Pennsylvania.

Before his 1907 solo trip, Turner made at least one, and possibly two other voyages through the rapids of Cataract Canyon. In a statement made to Colorado River historian Dock Marston in 1956, Louis Chaffin. said that he went through Cataract with Lon Turner looking for gold about 1894. He (Chaffin) had gone in by way of the Spanish Stairs trail and joined Turner, who had evidently come downriver by boat. They then went on down to Moki Bar in Glen Canyon. Chaffin added that Turner was "just looking," prospecting in other words. This story is given credence by Lou Chaffin's buying out of his partners' (Billy Hay, Frank Kimball, and Lon Turner) interests in the Moki Bar in the fall of 1895.

In his testimony during the so-called "River Bed" case in 1929, Chaffin also told of a river trip in the fall of 1904. He and Turner floated from Greenriver, Utah, down to The Confluence, where they cached one of their boats, and then rowed and poled the other up the Colorado to a gold placer prospect near Moab. On their return to Glen Canyon they simply floated back down to The Confluence, picked up the second boat, and went on through Cataract.

According to Chaffin the boats were light, sixteen-footers, decked over at both ends, and fully loaded drew only 6 to 8 inches of water. They never had any serious trouble getting through Cataract. They ran all of the rapids except three, where they portaged their equipment around and then lined the empty boats down with ropes. Chaffin did testify, however, that at one place Turner's boat got on a rock, tipped over, and threw him into the water.

Chaffin described Lon Turner as "a careful fellow, a man with a pretty good head on him. I tried to do as he wanted to do...." This statement would seem to indicate that Turner was the "leader" of the two boats. Chaffin concluded by saying that while Turner did run a couple of the rapids stem foremost "a time or two," most often they ran them 66 pointed the regular way."

By all accounts Turner took life pretty seriously. One time Billy Hay wanted him to go out in a boat on the river so that some of Hay's friends could take pictures. Lon thought that this was a rather foolish reason to go boating on the Colorado and so refused. Hay, then, went out in his boat, and while running the small rapid at the mouth of Trachyte Creek, overturned. Turner went in after him and saved his life.

On the 1907 voyage Turner was by himself, taking freight from the town of Greenriver down to the placer claim locations in Glen Canyon. According to John Hite in a 1912 letter, Lon had seven or eight hundred pounds of supplies and was eighteen days making- the trip. Being alone he ran all of the rapids of Cataract Canyon without any accident whatsoever. But in later years a fellow prospector, Frank Lawler, said he had heard Turner tell of his 1907 run, that it was just luck he had gotten through, and at times he could not control the boat.

In John Hite's letter he also stated that Turner's eighteen-day trip concluded at Hite in Glen Canyon on December 13, which would mean that he left Greenriver on November 26. Turner's only inscription in which he also included a day and month is located about a half-mile below Water Canyon on the Green River, not far above The Confluence. The date is November 27 and was probably made at Turner's evening camp for that day. This would mean a voyage of approximately 116 miles down the calm and slow Green River; a pretty fair distance for two days of travel!

Lon Turner placer mined all through Glen Canyon: Wright Bar, New Year Bar, California Bar, and at the mouth of Red Canyon. Late in 1914 he and Frank Kimball reportedly bought the Red Canyon claim from Bert Loper for "$50 and their claim to California Bar. "During the winter of 1920-21, Frank Lawler said that he "placered a couple of months" with Lon Turner at Red Canyon and they "took out $1,047."

But Turner was not just a gold placer miner on the bars of Glen Canyon. He was also a quartz (gold ore) miner in the nearby Henry Mountains. It is reported by Barbara Ekker that Turner and Kimball started working the Bromide Mine property in the early 1900s. Arthur Chaffin, brother of Louis, said in a 1962 letter to river-runner and historian P.T. Reilly, that he had met Lon at the mouth of Hall's Creek late in 1903, while Turner was picking up a gasoline engine "to take back to the Henrys to run his little stamp mill."

According to Pearl Baker, a Greenriver resident and historian, Turner and Kimball mined up in the Henrys at a claim on what was later known as Turner Peak. She said that they would work this mine during the summer months when it was too hot to work their claim at Red Canyon down on the Colorado River. Baker also related that the two partners said that some of their Henry Mountains ore ran $44 a ton in coarse gold.

Cass Hite, the original Glen Canyon prospector and miner, was a good friend of Turner's. Lon would visit him quite often at Cass' cabin, a short ways up Tickaboo Creek. He would always bring his violin and the two of them would team up for duets "that would make the canyon echo" with music. It was Lon who, during one of his usual visits late in February of 1914, found Cass dead. He and Bert Loper buried him in his garden near the cabin at Tickaboo.

In late 1918 or early 1919, Turner and Kimball sold their property in the Henrys and at Red Canyon. Lon wanted to go to California and moved to near Blyth in 1919. Not long after, however, upon the death of Kimball at Hite, Turner returned to southern Utah to see about the burial of his longtime friend. Another account says that Lon went away to mechanic's school in Phoenix, Arizona, and while he was gone Kimball died at Hite in 1919. Be that as it may, Turner stayed in Wayne County, where he took up a partnership with Arthur Chaffin in a garage business in Bicknell.

But like his California residency (or Phoenix!), this did not last long either. In the winter of 1920 Turner and Frank Lawler returned to the Red Canyon area where they leased some of the old placer claims. By the spring of 1921, however, Lawler had given up mining and begun trapping, and by 1922 Turner was placer mining back on California Bar.

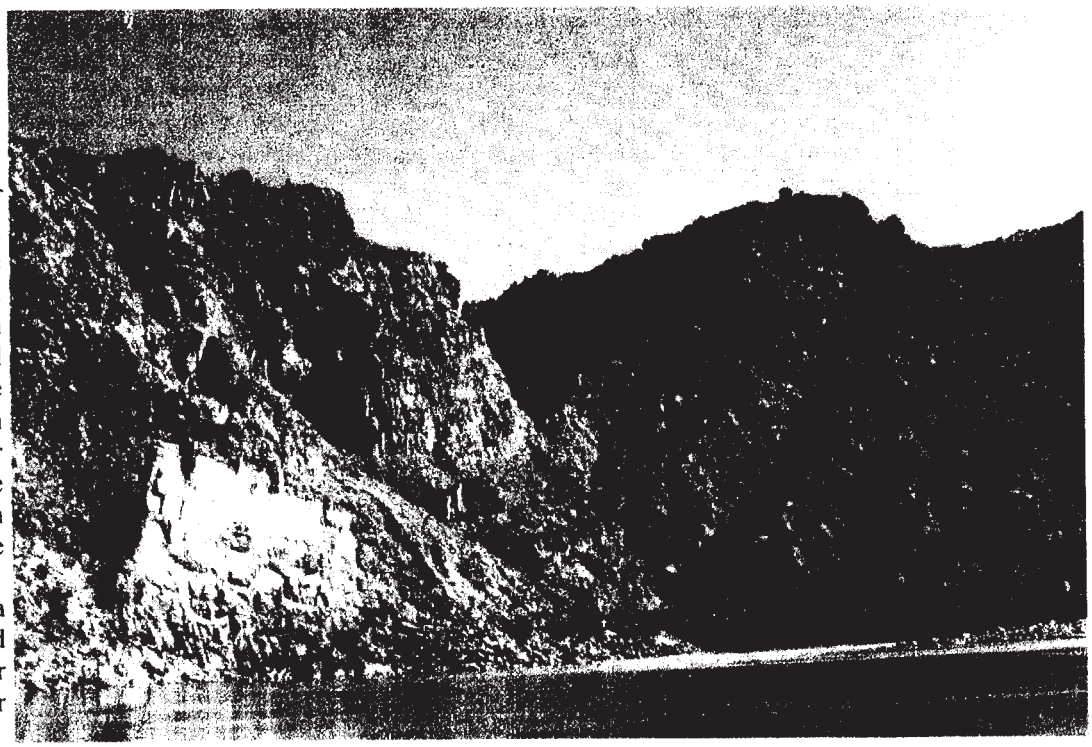
He lived the remaining months of his life in a two-room cobblestone cabin which he and Frank Kimball had built years past. Lon had contracted tuberculosis earlier in life, and now he became quite ill with TB. Doctors could do nothing for him, and in late April of 1923 he was found dead by Arthur Chaffin and Lawrence Lee.

By his own request, Turner was buried there at California Bar in Glen Canyon. According to Billy Hay, one of his old partners, he was laid in a coffin "box" made out of driftwood, dressed in his black suit of clothes ("He looks like he's going to a party," Billy said), and buried in a six-foot deep prospect hole. It was found out later that Turner himself had dug this particular prospect hole months earlier.

Arthur Chaffin cast a hand-mixed cement headstone at Hite, brought it down to California Bar and erected it, setting a fence built of light metal water pipe around the grave. The inscription on the gravestone was also hand-inscribed in the still-soft concrete. The name read: A.G. TUNER (sic). The "r" in his name had been left out, but once the misspelling was noted, it was too late to back up.

The cold, dead waters of Glen Canyon reservoir now bury Alonzo G. Turner's lonely grave, as they do his 1907 inscription near the mouth of Dark Canyon. But his other signatures, in middle Cataract and below Water Canyon on the Green, remain as epitaphs to this longtime prospector, miner, and river runner.

Photo: The A. G. Turner inscription site at Rapid 12 in Cataract Canyon. Looking upstream from the eddy that is formed by the deepest plunge pool in Cataract Canyon (80 – 100 feet). The inscription is written in charcoal on the limestone face in the lower left quadrant of this photo.



"LIFE ON THE ROCKS"
MAY 14 –16, 1999
Hosted by Colorado Plateau River Guides

REGISTRATION FORM

Please complete in full for each person registering. Type or print clearly. Feel free to make photocopies this form.

Name Of Organization/Company You Are Representing:_____

Your Name:_____Age:_____Gender: M F

Mailing Address:_____E-Mail Address:_____

City:_____State:_____Zip:_____

Phone (home): (_____)_____(work): (_____)_____

Participation in "Life on the Rocks" is limited to 100 guides. The event is rapidly filling. Please send in your registration as soon as possible to insure your participation.

Program fees: $25.00

Make check or money order payable to CPRG

Total due: $_____

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Please describe your river experience if any:_____
_____
Please describe briefly your personal expectations for participating in this event:_____
_____

Health:
VERY IMPORTANT: Please list any current medical conditions, medications, ailments, or other health problems:
_____
Are you allergic to bee stings, certain foods, medications, etc.? What is the reaction?:_____
_____
Are there any foods you absolutely do not eat? Vegetarian? Please describe:_____
_____

Colorado Plateau River Guides is one of the main driving forces to provide a quality educational experiences for commercial guides working on the rivers of the Colorado Plateau. CPRG is dedicated to the protection of rivers on the Colorado Plateau and to the celebration of the unique spirit of the river community. We invite you to become a member of CPRG. Membership falls into two classes: guide membership and general membership. Guide members are constitute the voting portion of CPRG and are eligible for positions on the Board of Directors. General membership is open to anyone who wishes to support CPRG. All members receive The Confluence quarterly, flyers, and notifications concerning issues and events. Membership is $20.00 annually.

There are no dogs or glass containers allowed at this event

A Progress Report
Life on the Rocks
May 14-16, 1999

Note: A tentative schedule of speakers and events as of April 1, 1999 (subject to change).

FRIDAY EVENING: A keynote address by a noted author or scientist (in process).

Quartzite Falls — video and discussion.

Event location: The keynote address will be held in the Grand County High School Auditorium (the fee is still being discussed). The high school is located on 400 East between Hwy 191 and Mill Creek Drive. Time: ?

SATURDAY: 8:00 a.m. registration and welcoming remarks. The stations will be 90 minutes each; (45 minutes for presentation, 30 minutes for mentoring, and 15 minutes allowed for changing stations). Two stations will be done in the morning and one will be done after lunch.

Event Location: Gold Bar Campsite on the Potash Highway (Utah Hwy. 279), 11 miles from it's junction with Hwy. 191; that junction is north of Moab and across the Colorado River bridge on your way to Arches National Park. Bring your own tent and sleeping bag. Food, water and toilets provided. No glass and no dogs please.

9:00-12:00 First two stations.
12:00-1:00 Lunch and raffle for prizes.
1:00-2:30 Last station.
2:45-3:30 Interpreting controversial issues. Diane Allen (NPS).
3:30-4:30 Special needs populations skills training. Dottie Shinpock (S'PLORE).
4:30-5:30 River conservation discussion. Friends of Westwater, and Utah River Council.
5:30-6:15 Set up camp/free time.
6:15-7:15 Dinner and River Trust presentation.
7:15-8:15 Atlas tailings pile discussion. Bill Hedden.
8:30-? Campfire presentation of Buzz Holmstrom's life by Brad Dimock.

Stations:

I. Origin of mineral deposits: Uranium, Potash, Placer.
Expert: Will Bussard
Mentor activity: discussion, sites visited along Colorado Plateau rivers.
Possible mentors: John Weisheit and Matt Robinson

II. Geologic history of the Colorado Plateau. Origin of the layers, faults, etc.
Expert: Gene Stevenson
Mentor activity: rock identification and classification.
Possible mentors: T-Berry and Randy Larsen

III. Moab geology
Expert: Lynn Jackson
Mentor activity: interpretive skills.
Possible mentors: Rebecca Martin or Christine Beekman

SUNDAY: 7:30 a.m.-8:30 a.m. Coffee, breakfast, and orientation of the day's activities. The stations will run on the same schedule as the previous day.

9:00-12:00 First two stations
12:00-1:00 Lunch
1:00-2:30 Last station
2:30-3:30 Leave No Trace training. Rick Ryan (unconfirmed)
3:30-4:00 Evaluations/goodbyes

Stations:

I. Paleontology of the region.
Expert: Donald Burge of C.E.U, James Kirkland, or Rod Scheetz
Mentor activity: interpretive skills.
Possible mentors: Marian Ottinger

II. Riparian ecology and threats from exotics: tamarisk, Russian olive, etc.
Expert: Dr. Rich Valdez of U.S.U.
Mentor activity: plant I.D. hike
Possible mentors: Dennis Silva, Kara Dohrenwend, and Damian Fagan

III. Geomorphology of rivers
Expert: Dr. John Schmidt of U.S.U.
Mentor activity: discuss differences & similarities of the plateaus' rivers/map exercise.
Possible mentors: John Weisheit and Dr. Tamsin McCormick

This event is land based and camping is encouraged at the site. Hiking shoes, hats and daypacks with snacks, sunscreen, and water bottles are necessary for each day. Plan for both rain and hot weather conditions. Along with the BLM's low impact camping regulations, there are no dogs or glass containers allowed at the site.

If you have any questions feel free to call Dusty Simmons at (435) 259-3951, John Weisheit at (435) 259-8077, Tom Corcoran at (435) 259-3527, or Tamsin McCormick at (435) 259-2718.

If you would like to e-mail your comments, please send them to cprgutah@hotmail.com

Be There!

"Frenchy"
A Rock Creek Ranch Stone Mason

by Jim Strong

AN EXTREMELY WORRIED MOTHER WALKED slowly along the path following her shadow, which was beginning to fade away. She felt the cool evening air coming from the mountains so she began to draw her shawl closer. Her evening walk was not a happy stroll but a serious walk during which she must think. She hardly saw where she was going as she pondered what she should do. Mrs. Eraud (pronounced Ehroh) had already lost her husband and two sons in wars, and her worry now was for the safety of her last son. It was just before the turn of the century in 1896 and he faced conscription into the army. To her that meant the same fate for him, as for his father and brothers. Eugene Eraud had been born next to where the Swiss, Austrian and Italian Alps come together. As she looked up at the majestic mountains, she paused a short time, then suddenly turned around and walked briskly back. She had made up her mind. Her plan to save her son required drastic action and by her action she could not possibly dream that one-day he would be on the Rock Creek Ranch in Desolation Canyon on the Green River in Utah, a place no map at that time, especially in Europe, would even show.

She did what was almost unthinkable by putting her son all alone aboard a sailing ship bound for California far across the ocean. Her son looked over the railing of the ship and waved good bye to his mother not realizing how she agonized at his departure. As the ship faded into the distance Eugene didn't know he would never see France or his mother again. He was only 16 years old.

He arrived in California in 1896 the same year Utah became a state. His mother had given him instructions to go to a town named Price, in Utah, where he could meet a French family named Bouvier who years ago, in France, had been friends of his mother. Those who knew Eugene are not sure whether he ever met the Bouviers.

It took him nearly five years to work his way over the Sierra Nevada Mountains, across Nevada, and half way through Utah to Price. He earned his livelihood as a sheepherder and along the way while herding sheep he studied rocks, specifically those with valuable minerals, because he found some gold. No wonder it took him five years!

My wife, Marjorie, and I traveled to Castledale, Price, and Wellington, specifically to learn what we could about this 16 year old boy who came from France and had been given the nickname "Frenchy." A nice white-haired lady, Margaret Magnuson the city recorder in Castledale, and her co-worker, Caroline Jorgensen the city secretary, were eager to tell me they remembered Frenchy. They were gracious enough to put me in touch with John Jensen, who had known Frenchy and had been with him when John was a boy. He, along with others, told me what they knew about Frenchy's life as they remembered it.

Rock Creek Ranch is located fifty-four river miles up the Green River from Green River, Utah. The distance is measured in river miles in Buzz Belnap's map of Desolation/ Gray Canyons. The main ranch house was made of local sandstone and is gradually falling down after a fire destroyed the roof years ago. If you look carefully you will notice that the main house rockwork is not as well done as the addition to the house which extends north toward the mountain and which still stands with a dirt roof over it. The addition is made over a dugout cellar and it has stone blocks matched and fitted far better than those of the main house. The edges of the blocks are superbly shaved and edged and fit to such a close tolerance that if you look along a joint line it is as straight today as it was when it was put together in the 1920's. River guides have a chance to show this superb rockwork that is still standing after so many years.

Rockwork on the main ranch building at both Rock Creek and down stream at McPherson's Ranch, is of inferior quality compared with the addition. Likely the same man did the rock work on both main ranch houses judging by the rocks are put together. I have taken people on raft trips passing Rock Creek ranch 216 times and until now never could tell them anything about who did the rockwork of the main house, the additional room, or the rock chicken coop. I could see a difference in the quality of the work, but had no idea why there was a difference, or who did any of the work. The Rock Creek ranch house masons have been a mystery just as who made the petroglyphys we see on the canyon walls. We now know who did such fine work on the additional room at the Rock Creek Ranch house, and who built the rock chicken coop on a ranch situated in such an inaccessible place, far from any town, and in such unknown territory.

A lot of the information I have gathered of what Frenchy did is circumstantial but much more comes from those who were with him and knew what he did. I have found a witness who, by seeing his picture, has confirmed that the mason for the addition and the chicken coop was Frenchy. Lou Downard told me his father learned from the Seamountons, from whom he bought the ranch, that a man called Frenchy had built the ranch house addition and the rock chicken coop. In the early 1920's, when the Seamounton brothers owned Rock Creek Ranch, they got in touch with Frenchy at Rufus Wilberg's, where they bought bulls for the ranch. In their dealings they got Frenchy to agree to build the addition to the main ranch rock house and a rock chicken coop. The chicken coop still stands and no chickens ever had a stronger home. With his love for mountains, deserts and wilderness, places where he could spend time by himself, it would not have been hard to

lure him away to that part of the country to do that bit of work. The question arises though, how did he know how to do rock work if he left France when he was only 16?

There are three possible answers. The first is the most logical. The other two are possible but most likely fit in with the first. The apprenticeship way of teaching a young man a profession was successfully used in Europe during the nineteenth century. It is quite possible that Frenchy was apprenticed at an early age to a stone mason since he lived near the Alps and could have been working with stone before his mother put him aboard the ship for America. In the old country he would certainly see and would have been taught the ways of how to do the best type of rockwork. Or, Frenchy may have worked with rock in the Sierra Nevada mountains while he herded sheep; he could have learned a lot in five years which included learning to find gold. That would certainly have spurred his study of rocks. The third possible answer is Frenchy could have learned the art after he got to Price. According to Fred Wilberg, Frenchy was a very literate person who read much and learned things by himself. And being a loner he could have practiced stone work and no one would have known about it. Fred said Frenchy was a self-taught mineralogist and he spent time prospecting in the mountains he loved. He herded sheep on Buckhorn Flat for the Wilbergs where they had a homestead. He would have plenty of time to learn the different rocks and to practice the art of shaping, edging and fitting rocks. No one I have talked to has suggested that Frenchy would not or could not be the mason on the Rock Creek addition. A cementing fact that Frenchy did the work is that Fred told me Frenchy talked about being over at Rock Creek on the Green River and that he loved the mountains there.

Frenchy was wealthy at one time and did own a ranch according to Edna Wilberg, wife of Rufus Wilberg. To own a ranch would account for two things: 1) From his finding gold he would have money to buy a ranch, but Gold, the magic metal of the ages, has been the making of some men and the downfall of others. 2) From owning a ranch, he would come into contact with ranchers of the area, but owning a ranch doesn't mean you have the ability to be a successful rancher. Apparently he lost, or gave up his ranch, and went to work for Rufus Wilberg on his ranch. The work he did gave him time to be in the mountains, and after herding or rounding up cattle he had time to search for rocks, and continue to do with rocks what he did when he came over the Sierra Nevada's. He prospected, staked some gold claims, and even sold some of his claims. He prospected in the Prickly Pear area east of Castledale and even had a mine there. Frenchy said he wanted Kelley McClanahan to have it but to this day no one can find the mine. Kelley has died without having received any benefit from the mine.

John Downard and his son Manuel Downard, who bought the ranch from the Seamountons, also went to Rufus Wilberg in Castledale to buy bulls for Rock Creek Ranch. On a couple of these trips Lewis "Lou" Downard, John's grandson, went with his dad to the Wilberg Ranch in Castledale. Here he saw

Frenchy and Rufus Wilberg.
From the Cyrus Wilberg Collection.
Courtesy of Linda Wilberg and John and Beverly Jensen

Frenchy and heard him talk. Lou, who lives in Coalville, Utah, identified both Frenchy and Rufus from the picture accompanying this article. Manuel Downard and Luella, Lou's mother and father, took Lou to Rock Creek Ranch when he was only five months old. Lou lived there until he was eighteen. "When I heard him talk," Lou told me, "He sure did talk funny." Frenchy's French accent would certainly command a boy's attention.

I went to the cemetery in Castledale, Utah, with John Jensen who had been the sexton for that cemetery for years. He showed me where both Rufus and Frenchy are buried in the same plot. Now only a white piece of stone marks Frenchy's grave but Fred Wilberg is going to place a gray sandstone headstone where the small white marker now stands. As we stood on the west side of the cemetery John pointed to the northwest up on the mountain so I could see where two significant places are located, Burnt Spring and Pine Creek. Wilberg's cowboys herded the cattle from Joe's Valley to Pine Creek where Frenchy would cook for them. Besides John other young boys from age 9 on up like Gary Blackburn, now of Grantsville, Utah, and Elwood and Dee Miller of Castledale, went on the cattle drives, or herded the cattle, and became acquainted with Frenchy.

The Wilbergs had their headquarters down on the side of the mountain at Pine Creek where they had corrals and kept feed. But Frenchy preferred to stay at Burnt Springs some distance below Pine Creek. He would walk or scoot up to Pine Creek in time to fix the food for the cattlemen. He preferred to

walk up to Pine Creek and never rode a horse up there. He cooked with Dutch ovens over an open fire and had a way of putting the meat, potatoes, and vegetables in the Dutch ovens, then putting on the lids and covering them up with the coals so the meal would be done when the men came in. Frenchy would dig a three-foot deep trench in the ground, and John and the other young boys would have to cut sagebrush, so Frenchy could burn it in the hole and line the bottom with coals. Frenchy and river guides have something in common, because if a river guide could only take one cooking utensil on a trip, he would certainly take a Dutch oven.

When Frenchy spent time in the mountains or in the desert he lived in a tent. And when his supplies were gone he would walk to town for supplies or load up his two horses, like pack horses, with a good supply of what he needed. He lived on venison and pheasants. He would trap the pheasants with chicken wire and a loop. John tells the story that one evening a game warden, one who would arrest "his own mother," came to the camp the herders had in the mountains just as they sat down to eat. Of course all they could do was ask him to join them. After awhile the game warden asked, "Say, what is it we are eating tonight?" No one answered. After a time he repeated the same question adding, "...what is this meat; its taste is familiar." Again no one said anything. After the game warden had asked that same question a couple more times, one of the men at the table spoke up and said, "For Hell sakes Carl, eat your dinner and shut up!" The question was never asked again.

Frenchy had a knack with horses and cattle, but I have yet to find anyone who ever saw him ride a horse. That is strange since at one time he hunted donkeys for the government. When he was not working on the ranch, mostly in the winter, he loved to go out into the desert. He had a bunch of "colts," as he called them, but they were really 10 to 12-year old horses that were gentled and who followed him around like pet dogs. Frenchy was skilled at many things but what seems important is whatever work he did, whether it was ranch work, stone work, carpentry, cooking or herding, all were extremely well done. According to Gary Blackburn, who now lives in Grantsville, Utah, he made a sprayer out of wood to spray the backs of the bulls. You could suck water up into the sprayer which had a plunger and by pushing the plunger the wooden sprayer would send the water out in a spray. He had the bulls gentled so he could go among them just as he did with his "colts." However, Carl Wilberg remembers an incident in which Frenchy wasn't so gentle. The Wilbergs, who had bulls for sale as a part of the ranch business, had two bulls get into a fight. Old "Frenchy" went into the corral with a stick and began whacking each bull on its head. He kept whacking them until he actually made them stop fighting.

Frenchy never married and never owned a home. His home was the desert, or the mountains, which may have reminded him at times of a far distant homeland. As he grew older he had a falling out with Rufus and went to work for By Johansen. By was in the cattle ranching business, so Frenchy worked as a ranch hand. He would be good at that because, although he was not a large man, he was a very strong man. The Johansen home is on the National Register, and today, is marvelously kept up. By built Frenchy a one room log house to live in on the back of his property in Castledale. He had a stove in it with which to cook and warm the place, but eventually things did not go well and he had a falling out with By. Frenchy went back to work for Rufus, who had a ten by ten-foot shack made out of two by fours built for him.

As Frenchy got older, he developed a toxic urinary problem. In February of 1952 Fred's mother, Edna, found Frenchy in distress. She got him into the car and stopped by the school to pick up Fred to help her. By the time she arrived at the school and picked up Fred, Frenchy was semi-conscious. They sped on toward Price, but as they approached the city, his breathing became irregular. As they hurried toward the hospital his breathing slowed and his life gradually ebbed away. The 16 year old boy who had been saved by his mother from death in war, so many years ago, died peacefully far away from his homeland, but close to the mountains and desert in which he had spent much of his life. He left little to remember him by except a legacy of superb rockwork which only those who visit Rock Creek Ranch will see. For river guides, passengers, and anyone else who is privileged to see it, his rockwork has a message; whatever you do, if it is worth doing, it is worth doing well.

Lou Downard, the grandson of John Downard who was the second owner of the ranch at Rock Creek in Desolation Canyon.

Photo by James Strong

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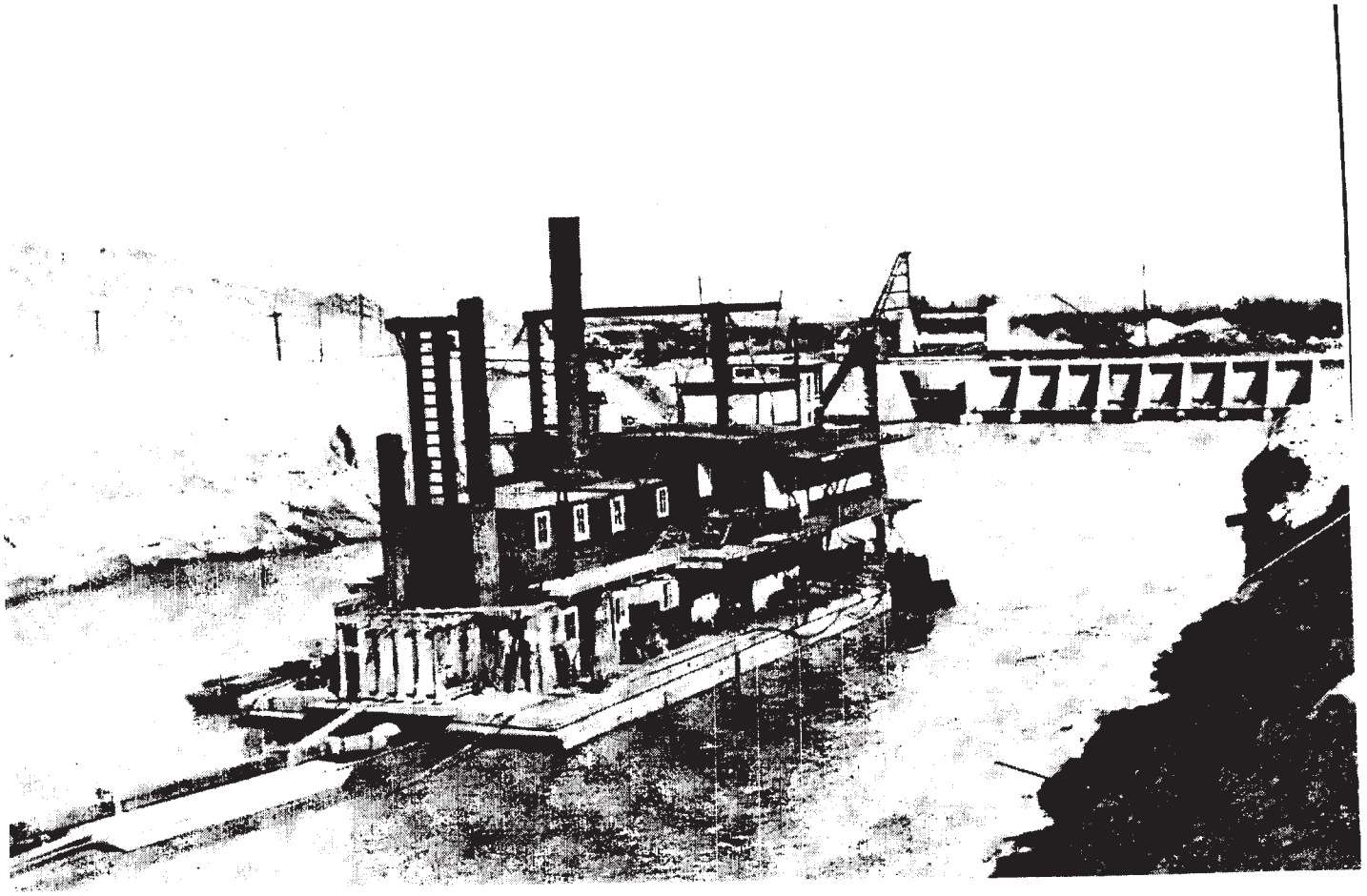

A suction dredge immediately below Hanlon Heading, Imperial Canal (circa 1916). According to the Fall/Davis Report (U.S. Reclamation Service, 1921) the irrigation works of the Imperial Valley were at jeopardy until a high dam was built to control floods and store silt. The Fall/Davis Report also stated that the silt stored behind that high dam would jeopardize flood control due to the displacement of that silt stored in the reservoir. The beginning of the end would be one century after the construction of that high dam. That high dam is now called Hoover and began to store silt in 1935. Rethinking Western water will become a mandate as we enter into the 21st Century. USGS photo.