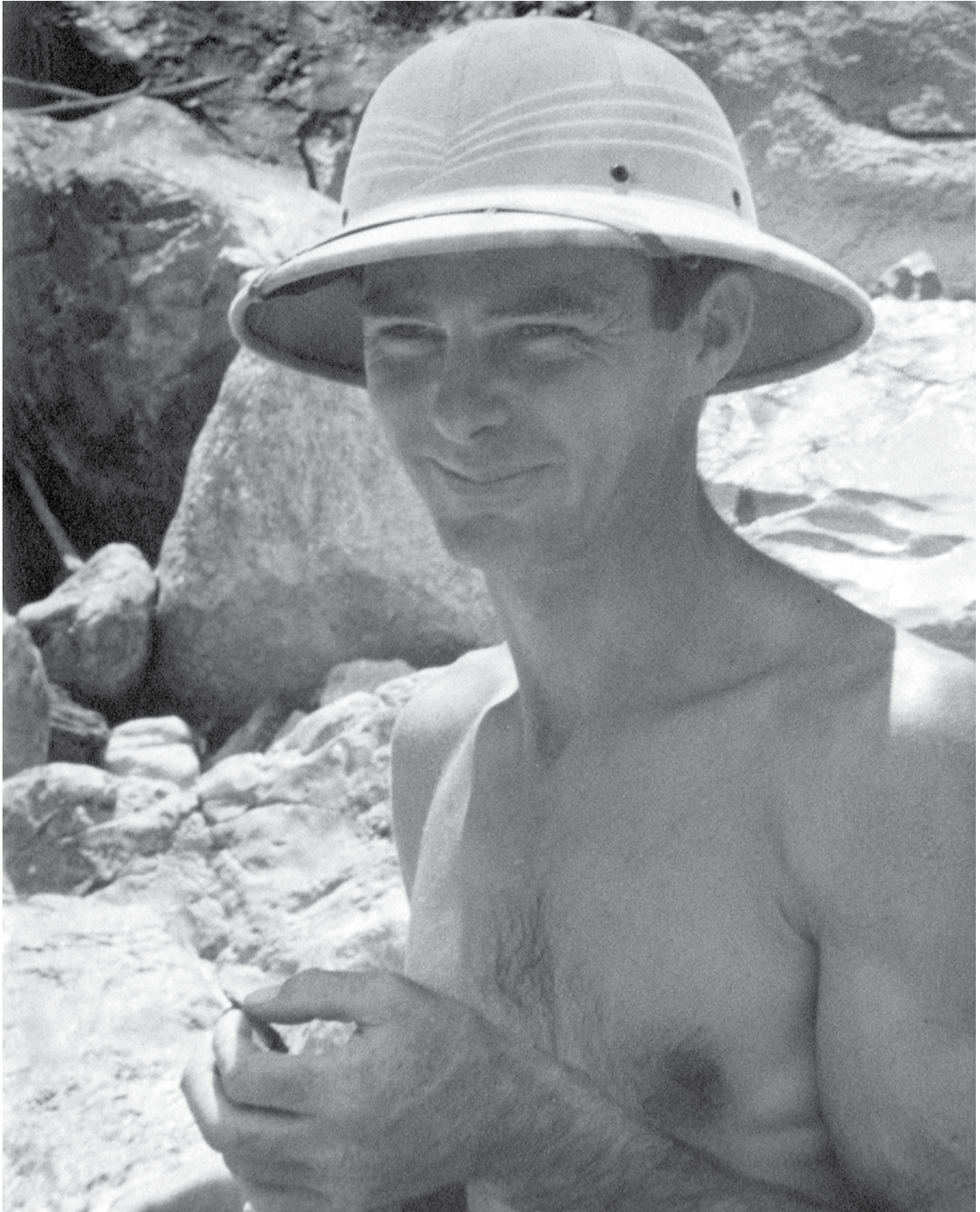


# boatman's quarterly review

the journal of Grand Canyon River Guides, Inc | volume 17 number 1 | spring 2004

*Photo courtesy of Special Collections Department, J. Willard Marriott Library, University of Utah.*



## Norm Nevills

CRMP Update • Prez Blurb • Protecting Ruins • GCY • GC Lava Dams  
Medical Control Quandries • Whale Foundation • 2004 Dam Ops  
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## boatman's quarterly review

...is published more or less quarterly  
by and for Grand Canyon River Guides.

**Grand Canyon River Guides**  
is a nonprofit organization dedicated to

*Protecting Grand Canyon  
Setting the highest standards for the river profession  
Celebrating the unique spirit of the river community  
Providing the best possible river experience*

General Meetings are held each Spring and Fall. Our Board of Directors Meetings are generally held the first Wednesday of each month. All innocent bystanders are urged to attend. Call for details.

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Our editorial policy, such as it is: provide an open forum. We need articles, poetry, stories, drawings, photos, opinions, suggestions, gripes, comics, etc. Opinions expressed are not necessarily those of Grand Canyon River Guides, Inc.

Written submissions should be less than 1500 words and, if possible, be sent on a computer disk, pc or mac format; Microsoft Word files are best but we can translate most programs. Include postpaid return envelope if you want your disk or submission returned.

Deadlines for submissions are the 1st of February, May, August and November. Thanks.  
Our office location: 515 West Birch, Flagstaff, az 86001  
Office Hours: 10:30-4:30 Monday through Friday

Phone	928/773-1075
Fax	928/773-8523
E-mail	gcrg@infomagic.net
Website	www.gcrg.org

## CRMP Update

The National Park Service (NPS) is planning to release the Draft Environmental Impact Statement (EIS) for the Colorado River Management Plan (CRMP) for public review and comment in May 2004. The NPS will seek public comment on the Draft EIS once a notice of availability has been posted in the Federal Register. A schedule of public meetings will be announced following release of the draft.

The Draft EIS will analyze a full range of reasonable alternatives as well as a draft preferred alternative for managing recreational use on the Colorado River from Lees Ferry to Lake Mead.

Issues being addressed in the planning effort include, but are not limited to:

- the range of services and opportunities provided to the public,
- appropriate levels of visitor use consistent with natural and cultural resource protection and preservation mandates,
- allocation of use between commercial and non-commercial groups,
- level of motorized versus non-motorized raft use,
- non-commercial river permit system, and
- continued use of helicopters to transport river passengers from the Colorado River near Whitmore Wash.

Public and stakeholder involvement has been and continues to be very important in this planning process. Information relating to the release of the Draft EIS and how the public can be fully involved in the process will be provided in a variety of ways including postings on the park's website at [www.nps.gov/grca/crmp](http://www.nps.gov/grca/crmp).

The NPS is committed to completing a final National Environmental Policy Act (NEPA) compliance document by December 31, 2004. We appreciate your interest in Grand Canyon National Park and look forward to your continued participation in the revision of the CRMP.

*Rick Ernenwein*  
CRMP PLANNING TEAM LEADER

## Prez Blurp

THE BIGGEST NEWS THIS WINTER is the following, “The National Park Service (NPS) is planning to release the Draft Environmental Impact Statement (EIS) for the Colorado River Management Plan (CRMP) for public review and comment in May 2004.” I wrote in my previous column, “Hopefully by the time you read this, the Colorado River Management Plan will be out in draft form...”. Well, it won’t be.

In fact, if the Park releases its draft when they say they will, it will be the worst time possible for river guides to read the draft EIS, formulate a reasoned opinion, and make constructive comments. In May, most of us will be packing for a trip, or packing for the season to move closer to Flagstaff or Kanab, or already down river on our first or second or third trip of the season.

Our CRMP mail may arrive at our winter home, our summer home, or at the outfitters. Then if it catches up to us, we can read it on our trips, after the fourteen hour day, write up our comments, find a stamp and an envelope, and mail them from Phantom Ranch, Grand Canyon Caverns, or Meadview.

Hopefully that fits in with the 30 or 45 or 60 day review period that the NPS will schedule. Sixty days may seem like a long time to review a document, if you are sitting in an office, waiting for it to arrive. But if you are working a full season in the canyon, maybe taking only single trip off to go to a wedding, 60 days will come and go in a flash.

It is going to be hard for the GCRG Board to come up with a position on the draft EIS, because we will all be on the water, on different trips, trying to touch base with each other, coming off on different days, going back on this week or next. We will be formally requesting that Grand Canyon National Park (GCNP) develop a *very* abbreviated executive summary of the Draft EIS, listing what would change between the current system and the proposed alternative. We are hoping that this would be easy for guides to take with them on the river and short enough to attempt to read. GCRG will be doing whatever we can to get information out to members in time for them to comment on the Draft EIS. If you have any ideas about the Draft EIS, or anything else going on, please contact us at [gcrg@info-magic.net](mailto:gcrg@info-magic.net) or PO Box 1934, Flagstaff, AZ 86002.

I think the next most important issue that GCRG has been discussing this winter is the increasing level of wilderness medical certifications that are being required. Most of us now have quite a bit of training that has become mandatory. Much of which, we have been told not to use unless: 1) we are in a wilderness setting, 2) we have medical protocols in writing, at

the company we work for, and 3) our company has “medical control”. GCRG has asked GCNP to be very specific about what they want us to be doing for people in a wilderness setting. The letter we sent to the park is in this issue.

On a lighter note, I was lucky enough to attend the Second Annual (I hope) “Whale Foundation Wing-Ding” in Flagstaff on the last weekend in January. A lot of Canyon-related art and gear was auctioned off, much good food consumed, and many old friends met and enjoyed. I hope a lot of money was raised. Looking around at the Wing-Ding, I was reminded of Bill Beer’s comment at a GTS a few years ago, “You’ve got a tremendous organization with a tremendous group of people.” I saw a number of folks there doing great things, accomplishing plenty, and not worrying who got the credit. That sounds like a good river trip to me. And it was a celebration—a chance to get together and laugh, and tell an old story, or hear a new one, and maybe summon up the courage, or the good sense, to let your friends know how important they are to you. If you’re lucky, you don’t need a celebration to do any of those things, because your friends are close by, and close. Just hanging out at the Wing-Ding, I’m reminded how lucky we are in the river community; we have more friends than we know sometimes. It’s amazing how fast a river season will go by, and how good it is to see friends year around.

Speaking of celebrations, the GTS will be coming up soon, and we are hoping for a great turnout, for the land session and for the river session. We’ll be meeting Friday, March 26 at the Old Marble Canyon Lodge for the annual GCRG meeting. We’ll move from there to the Hatch warehouse for dinner and a party. The GTS will be at the Hatch warehouse, Saturday and Sunday, March 27<sup>TH</sup> and 28<sup>TH</sup>, starting at 8 A.M., coffee and breakfast earlier. Please come if you can; I know it often conflicts with work, school, skiing, jury duty and everything else in life. The GTS is always the best place I know to learn something about the Canyon, meet an old friend, make a new one, and celebrate our community.

I hope to see you there.

*John O’*



## Protecting the Canyon's Ruins

ONE OF THE MOST INTERDISCIPLINARY research ventures sponsored by GCMRC launched from Lees Ferry on May 4, 2003. The research group of geologists and archeologists—including representatives from the US Geological Survey, UC Santa Cruz, Grand Canyon National Park, the Hopi Tribe, the Hualapai Tribe, and Western Area Power Administration—set off to see the effect of Glen Canyon Dam on the sand that has been preserving Native American archeological sites. After examining the arroyos that are formed by water running down the canyon walls and seeing the archeological sites exposed in the arroyos, there are two questions on everyone's minds. If Glen Canyon Dam didn't exist or was operated to allow more sand to be retained in the system, would more sand be blown in from the bars along the river to fill in the arroyos? If there were more wind-blown sand, would it be slowing or preventing erosion of the ruins?

At the time the dam was built, environmental concerns focused on the area that was to be submerged beneath Lake Powell, upstream from the dam. Later, the Environmental Impact Statement (March 1995) for Glen Canyon Dam operations identified water, sediment, fish, vegetation, wildlife and habitat, endangered species, and cultural resources as some of the issues to be analyzed in detail, and studies have documented a number of impacts to the Colorado River downstream from the dam, below the high water line. There has been relatively little research on impacts above the old high-water zone. The archeologists and geologists on this trip are concerned that the dam may also effect that environment. The river corridor contains nearly 500 places of past human activity. The Grand Canyon Protection Act of 1992 mandates that Glen Canyon Dam be operated to protect downstream natural and cultural resources. If the dam operations have directly contributed to the erosion of cultural sites in the canyon, dam operations may need to change or other measures taken to ensure preservation of those resources.

Jan Balsom, National Park Service Cultural Resources manager, explains to the assembled group of scientists

that 10,000 years of human history may be buried in the sands of the Grand Canyon. "With active arroyo cutting of archeological sites, many sites have recently been exposed, creating a huge problem for preservationists." Can the creation of arroyos be slowed and the archeological sites preserved? What the Park Service wants, Balsom makes clear, is a "system-wide" strategy that will relieve her staff from trying to repair every exposed site individually. For the two-week trip, the archeologists pick more than 30 representative sites to visit, revealing a range of problems.

One stop is a site that National Park Service archeologists have monitored over the past 20 years, and they have reported that each time they return, more artifacts are exposed. The archeologists have identified the site as being occupied approximately 900 years ago. It is impossible to walk without stepping on pottery. There are several identified ceramics, including Tsegi Orange Ware distinguished by its bright red color with black lines and flecks of white. There is a



*Photograph of malachite pendant found at eroding archaeological site.*

type of burned clay used in house construction known as daub. For a brief instant, the geologists forget about sedimentary structures, becoming amateur archaeologists, looking for artifacts and evidence of the past.

Each day, rising with the sun, the scientists trek across beaches, past blooming milkweed and blossoming cactus. They hike along sandy paths, walk over river terraces and onto rocky ledges overlooking the river. At one site, Balsom shows the top of an arroyo cutting into the posts and roof beams of a 1000-year-old structure. She explains that a structure even older is revealed below. At site after site, the scientists see fire-cracked rock, fire pits used to roast agave, ceramics, and carved and worked stone known as lithics. At one site where there is no visitor traffic, whole terraces are filled with archeological sites, and potsherds are scattered across the landscape. At other sites the archeologists show off check dams built by the Zuni Conservation Program. Some look like random scatterings of driftwood, others look like piles of rocks, all are placed to stop erosion, trap wind-blown sand, and prevent exposure of nearby artifacts and structures.

David Rubin, a U.S.G.S. sedimentologist, directs the

geologic research. The question for the geologists is whether the sand up on the plateaus, at the edges of the beaches, and atop the sand dunes is fluvial or eolian (whether the sand was deposited by water or wind). With shovels, trowels, Brunton compasses, and a Chinese calligraphy brush, the geologists march up and down the beaches, looking at the sedimentary structures in the cutbanks. At one site not far from the water's edge, Rubin sees ripples migrating right to left and upward, and identifies them as fluvial climbing ripples. At another site, the geologists agree that the sand is probably fluvial, either from a 300,000 cfs flood of the Colorado River, or from flooding of a nearby side creek. At the next site, closer to the river, and lower on the plateau, all agree that the 10 foot wall of mud, pebbles, and rocks is from the side creek.

But many sites show evidence of eolian sand deposition. Wind-blown sand is found on the beach near the water's edge, and up in canyons, far from the river. At one newly exposed site, Rubin considers that "if the sand bars were bigger, less vegetated, and less frequently submerged, more sand would blow up the canyon and up to the area of this site." The geologists look at another site and consider the incredible amount of sand and wind it would take to provide protection to the area, noting that the sand would need to travel quite a distance from the river, blowing over boulders, reaching well above water level. But Balsom recalls seeing sand dunes form up on the ledges of the Redwall Limestone, well above river level. Other researchers recall times in the canyon when the wind is blowing so hard the sky is sand-colored, when the wind blew sand into their eyes while they rafted down the middle of the river. The geologists note that the cactus and bushes in the area all appear on mounds that are being undercut, a sign that there used to be a lot more sand in the area. Their examination completed, they agree that with the 40-50 mile wind gusts common in the spring, and with more sand in the system, it might be possible for eolian sand to reach up to the sites that are now being exposed.

Another site has extensive pottery scatter and is believed to have been occupied during much of the time from 900-1640 AD. Seven cultural features had been identified at the site. Four have already disappeared, victims of erosion. The scientists all agree that the site is a good place for an excavation to integrate the sciences of archaeology and geomorphology.

The preliminary investigation completed, several of the geologists think that reduced wind-blown sediment might be a significant factor causing erosion of the archeological sites. To determine whether the dam is, in fact, depleting the sand source, the geologists outline the investigation. Geologic maps and air photos will be used to determine a site's position in the larger landscape. Anemometers will be placed to record winds and sand

#### PLEASE DON'T MIND THE EQUIPMENT

In November 2003, instrument stations were set up by the U.S. Geological Survey and National Park Service to monitor eolian (wind-blown) sediment transport at several locations along the river corridor. By gathering data at a few carefully-selected sites, we hope to predict how changes in dam management might affect areas where archaeological sites are threatened by erosion. Would deposition of new sand at low elevation from a beach/habitat building flow (BHBF) result in more eolian deposition at higher elevation, helping to preserve archaeological features?

To help answer questions like this, we have set up temporary instrument stations that are maintained regularly by science trips. This equipment, which will be removed after the 2004 season, has been placed in areas that are not campsites or frequent stops for river trips. We have camouflaged instruments as much as possible, while realizing that it is not possible to hide them completely. All equipment will be removed at the completion of this study without leaving any impact on the sites. If you come across any of these instruments while on a river trip, please ensure that your group respects them—they are used to help us understand how to preserve and manage valuable cultural resources.

If you have any questions please contact Dr. Amy Draut, USGS, Santa Cruz, CA 95060, 831-427-4733, [adraut@usgs.gov](mailto:adraut@usgs.gov).

*Dr. Amy Draut*

traps will be set to measure transport of wind-blown sand. Historical photos and statistics from completed surveys will be used to compare bar size and vegetation over time. Amy Draut will conduct this research for her post-doctoral fellowship funded by GCMRC.

The investigation is wide-ranging. On a small beach, the grasses have grown into a 10-foot-tall, nearly impenetrable barrier, covering all but a narrow 15 foot strip of sand at the water's edge. The role that these new plants play in the preservation or erosion of archeological sites is unknown. If the vegetation were removed (or at least reduced) and the sand bar made bigger, would more sand be blown up to the archeological sites above the high water line of the river? Or would the beaches and arroyo banks erode further without the vegetative protection, further reducing the sand available to protect

the archeological sites? Until now, the geologists have considered the role of the vegetation only when lamenting the loss of good camping beaches and when cataloging the changes that have occurred since erection of the dam. The analysis changes if the vegetation is either protecting or harming the archeological sites.

On the river, the water is incredibly clear. In the shallow places, individual rocks on the bottom of the Colorado are visible. The sparkling water confirms that the canyon is depleted in sand and mud. A little later, the water clouds slightly, confirming that sand is being taken off the already depleted beaches. Does this sand get washed completely out of the canyon, or does it end up on downstream beaches, where it might blow onto archeological sites?

With so many archeological sites at stake, the study's conclusion is being excitedly anticipated.

*Michelle Rubin*

## Farewell

**J**OHAN B. (JACK) RIGG, 77, passed away December 31, 2003. Jack was born in Omaha, Nebraska and grew up in Grand Junction, Colorado, where he met his childhood sweetheart, Shirley, and married her in 1946.

Jack had an adventurer's spirit and independence. Frank Wright and Jim Rigg (Jack's brother) were encouraged to take over the Nevills Expedition river running business after the untimely and tragic accident that took the lives of Norm and Doris in September of



1949. They did so after considerable discussions and soul searching. At the same time, Jack Rigg took over the lodge at Mexican Hat. When Jim and Frank split their operation, Frank took the cataract boats and Jim took the power boats. The operation then became "Mexican Hat Power Boat Expeditions." Jack was on the initial Power Boat run in 1952 and also on the 1955 run. In 1955 Jim, Jack and Bob Rigg also ran three Chris Crafts through the Canyon in the very high water of that year—three brothers and three boats. According to Dock Marston, Jack was the 151st person to run the Colorado River in Grand Canyon.

Jack was active in the mining industry throughout his career. As an executive in the U.S. Department of the Interior, Jack served under three U.S. Presidents, with responsibility for numerous agencies, including the Minerals Management Service.

Farewell beloved husband, father, and grandfather.

*Nancy Rigg*

## Announcements

### FOR SALE

16-foot whitewater aluminum dory with custom wood trim and paint. Comes with Baker trailer, excellent condition. \$6,500. Contact Jack Irby (970) 259-1132 or [irbyjack@frontier.net](mailto:irbyjack@frontier.net)

## What's New at Grand Canyon Youth

**T**HE 2004 SEASON IS LOOKING to be a full and fantastic one for Grand Canyon Youth (GCY). Currently, we have the potential to serve over 200 youth with five San Juan trips, three Grand Canyon trips, and four Lower Grand Canyon trips. GCY is collaborating with the Youth Volunteer Corps in two school clubs at Flagstaff High School and Northland Preparatory Academy. So far, this partnership has provided several wonderful community service opportunities for youth in Flagstaff, as well as spread the word about Grand Canyon Youth throughout the community. If you know any middle or high school youth who would benefit from a Grand Canyon Youth experience, have them contact the office for trip dates and other information. Grand Canyon Youth is still in need of financial support and volunteers to run these valuable programs.

### GUIDES NEEDED AT GCY FOR THE 2004 SEASON

Grand Canyon Youth is looking for licensed Grand Canyon guides interested in youth river trips to take part in our exciting four-day Lower Grand Canyon programs, (Diamond Creek to South Cove).

This is a great way to kick-off your season and support GCY!

Trip Dates are: March 18–21, April 9–12, April 13–16, and April 29–May 2.

We will be able to pay our guides a per diem this year for their help. Even if you are not available for trips this season, you can be put on the list to be contacted with future trip information. Please contact Emma at the Grand Canyon Youth office either by phone (928) 773-7921, email [info@gcyouth.org](mailto:info@gcyouth.org), or snail mail PO Box 23376 Flagstaff, AZ 86002. Get involved doing trips with youth. It's an experience you won't soon forget.

### ADOPT-A-YOUTH PROGRAM

Our Adopt-A-Youth program is supported mainly by guides sharing the mission of Grand Canyon Youth with interested passengers on commercial trips. "GCY Guide Kits" are available for guides to pick-up at our

office (515 West Birch), and will be available at this spring's GTS, or we can send them directly to you. "GCY Guide Kits" include twenty brochures, an information sheet about GCY, and a great GCY sticker for you to display in the location of your choice. Thank you to all the guides who have helped to spread the valuable message about Grand Canyon Youth the past six years. We couldn't have done it without you.

### 4TH ANNUAL ART AUCTION AND RIVER RUNNERS FILM FESTIVAL

The 4TH Annual Art Auction and River Runners Film Festival is April 4, 2004 4–9pm at the Orpheum Theater in downtown Flagstaff, 15 W. Aspen St. Flagstaff, AZ 86001.

This years Art Auction and River Runners Film Festival is sure to be a great time. Come early to enjoy delicious food, delightful music, mingling with friends and to take part in the silent auction. There will also be a raffle with fabulous prizes. Then, grab your popcorn and sit-back to enjoy several river related films. Mark

your calendars, tell your friends, and look forward to sharing a night of fun. All the proceeds from this event go towards getting youth on the river and involved in education and community service. Besides, it's a great way to get the river season off to a roaring start.

In order for this event to be a success, contributions of artwork, financial sponsorship, and time are gratefully welcomed and needed at this time. Contact Marieke Taney, the most excellent GCY Art Auction Coordinator, at [rmталces@hotmail.com](mailto:rmталces@hotmail.com) or Emma Wharton at the GCY office. We hope to see you there!

*Emma Wharton*





# A Fresh Look at Western Grand Canyon Lava Dams: Dating the Rocks

**A**T ONE POINT OR ANOTHER, anyone who has worked in Grand Canyon has had these questions posed to them: “How old is Grand Canyon? How long did it take to form?” The answers to these questions are often full of ages produced by the geoscientists who have studied rocks and minerals of the Canyon for decades. For over thirty years, geologists have used the position and age of lava flows in western Grand Canyon, Toroweap Dam in particular, to constrain the timing of incision of the Colorado River through the Grand Canyon (McKee et al., 1968).

Before our work in western Grand Canyon began in the mid-1990s, nearly all the age constraints on lava flows relied on a technique called potassium-argon dating, also known as K-Ar ages. K-Ar ages rely on the radioactive decay of potassium to argon gas. Radioactive potassium is a small part of all the potassium that make up minerals within western Grand Canyon lavas. Over time, as the potassium decays to argon, the gas accumulates and is stored within the minerals. Because the decay rate of potassium is well known, geochronologists use the amounts of potassium and argon present in rocks today to determine the age of the rock. This technique was used by geochronologists to study the ages of lava flows in western Grand Canyon during the 1960s and 1970s (Damon et al., 1967; Dalrymple and Hamblin, 1998).

In using K-Ar dating, geochronologists assumed that the lava had no argon gas in it as it erupted out of the earth’s interior and flowed out onto the Uinkaret Plateau. As soon as the lava cooled and formed rock, the

potassium in it started to turn into argon. The scientists soon noted, however, that there appeared to be “extra” argon gas in the lava, most likely brought up from the earth’s interior trapped in microscopic “bubbles” in

minerals brought up with the lava. Because the lava was bringing up and storing extra argon before it cooled into rock, measurements made by scientists made it appear that the lava had been rock for a much longer period of time than actually had transpired. K-Ar ages of western Grand Canyon lava flows range from 10,000 years (Vulcan’s Throne) to 1.8 million years (Prospect Dam). Argon-argon dating, a newer



Figure 1—Photograph of Toroweap Dam, a lava flow overlying ancient river gravels approximately 100 feet above the present-day river level. The photographer (Dominic Oldershaw) is standing on river left at river mile 179 on the Prospect debris fan, looking across the river.

technique also known as  $^{40}\text{Ar}/^{39}\text{Ar}$  dating, is very similar to K-Ar dating, but  $^{40}\text{Ar}/^{39}\text{Ar}$  dating is more accurate and can account for most—but not always all—of this extra gas brought up from the earth’s interior. New  $^{40}\text{Ar}/^{39}\text{Ar}$  studies of western Grand Canyon lavas (Pederson et al., 2002; Luchitta et al., 2000; McIntosh et al., 2002) show the oldest lava flow, the Black Ledge flow, is approximately 600,000 to 650,000 years old. The youngest flow (Esplanade Dam) dated with Ar/Ar or K-Ar techniques is 110,000 years old (Dalrymple and Hamblin, 1998).

In 1995, we began in earnest to re-evaluate the ages of the lava flows and dams in western Grand Canyon using a new technique called cosmogenic dating. This allowed us to investigate the accuracy of the K-Ar ages that have been reported in Grand Canyon studies since the 1960s. In a nutshell, cosmogenic dating is like dating the suntan of a rock, or dating how long the surface of a rock has been exposed to cosmic rays coming in through



the earth's atmosphere from outer space. These cosmic rays are simply high-energy protons that have enough energy to move through the earth's magnetic field and into the earth's atmosphere. These protons cause a cascading shower of nuclear interactions in both the atmosphere and in the surface of rocks on the ground. The longer a rock has been exposed to these cosmic rays, the older the cosmogenic age of the rock. In the case of western Grand Canyon, the olivine crystals within basalt are dense enough to trap helium gas that is spalled off oxygen, magnesium, aluminum, and silicon—just about all the elements that make up olivine—and the buildup of that helium ( $^3\text{He}$ ) indicates that amount of time that the rocks have been “sunbathing.”

Which of these three age-dating techniques you use can radically change the interpretation of the age of western Grand Canyon. The Toroweap Dam (Figure 1) is a lava flow exposed on river right just upstream from Lava Falls Rapid

(RM 179). This structure has a K-Ar age of 1.2 million years (McKee et al., 1968) and is widely cited within the scientific literature dealing with the age of Grand Canyon. This lava flow has been incised and eroded by the Colorado River, exposing the base and interior of the lava flow where it overlies an ancient reworked debris-flow and old Colorado River gravel deposits.

The base of the lava flow, thus, the top of the gravels, is about 100 feet above present-day river level, and for several decades, geologists have used the position and age of this dam to say that, after initial incision of the Grand Canyon began, the river downcut to within 100 feet of its current level by 1.2 million years ago (Hamblin, 1994).

The active Toroweap fault runs north-south across the river, offsetting by different amounts lava flows, river gravel, and hillslope deposits of different ages, including the Toroweap and Prospect Dams (Figures 1 and 2 respectively). These offsets occur over time during

large-scale earthquakes (magnitude seven or higher on the Richter scale). The last earthquake strong enough to rupture the earth's surface along this fault occurred about 3,000 years ago (Jackson, 1990; Webb et al., 1999), and it has been inferred that this fault has been moving for the past million years or so (Jackson, 1990; Huntoon, 1977; McKee et al., 1968). Both the Toroweap and Prospect lava dams have approximately 145 feet of displacement along the fault, but interestingly enough, the flows have K-Ar ages that differ by 600,000 years. Our research, which uses cosmogenic  $^3\text{He}$  dating rather than K-Ar dating of rocks, shows that the Toroweap fault has been moving at the same rate for at least the past 400,000 years (Fenton et al., 2001), and because the offsets in the Toroweap and Prospect lava dams were essentially the same, that the ages of the lava flows should be the same as well.

Cosmogenic ages of lava flows on the Uinkaret Plateau range in age from 1,000 to 400,000 years and for

the most part, agree with Ar/Ar ages of the same flows. In some cases, the K-Ar ages agree with the cosmogenic ages, as well, however, the K-Ar ages are usually two to three times older than ages provided by the other methods. In cosmogenic dating, we assumed little to no erosion of the surfaces we dated, but we did notice that the older lava flows, particularly the Prospect Dam, had cosmo-



Figure 2—Photograph of Prospect Valley and the Prospect Dam taken from near Toroweap Overlook on the north rim, just above Lava Falls Rapid. Toroweap fault runs down the axis of Prospect Valley (essentially out of the page).

genic ages that were younger than  $^{40}\text{Ar}/^{39}\text{Ar}$  ages of the same flow (Fenton et al., 2004). The Prospect Dam has a cosmogenic age of approximately 395,000 years, one K-Ar and several  $^{40}\text{Ar}/^{39}\text{Ar}$  ages of approximately 500,000 years, and one K-Ar age of 1.8 million years. The 500,000 year-old age is likely most accurate, whereas the 1.8 million year age is likely affected by extra argon gas, and the 395,000 year age affected by erosion of the rock's surface. So, as you can see, all of these dating techniques have their own sources of error. Because the offsets in the flows on either side of the canyon are about the

same, this strongly suggests that the Prospect Dam and Toroweap lava flows should also be about the same age. We draw this conclusion despite the uncertainties in the age dating.

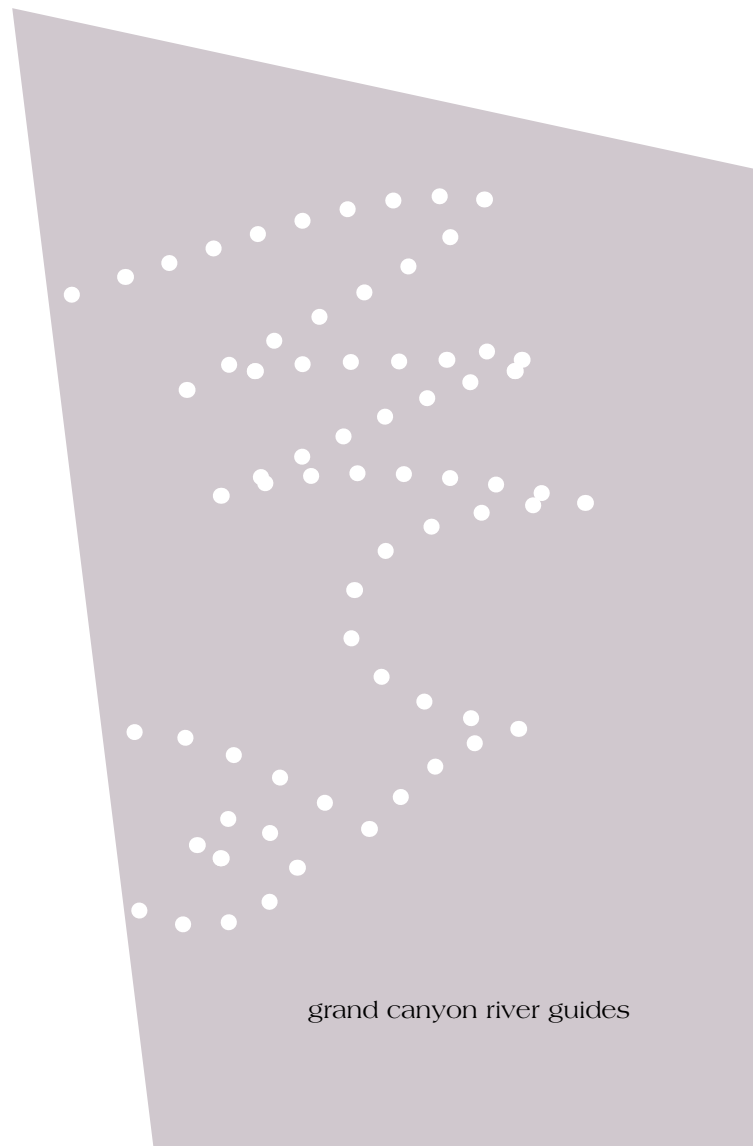
The take-home message from all of this is that every age reported in scientific literature, as well as every dating technique used to produce these ages, have their own uncertainties and sources of error. No age is, in fact, “set in stone,” but by using a variety of dating techniques to date the same lava flows or deposits, geologists produce ages that begin to converge on a “true age” of the lava flows or deposits. So, when people ask you “how old is the Grand Canyon?” or “how long did it take to form?”, gently explain to them that science has helped constrain the age of the big ditch to five to six million years old, depending upon whether you believe in creation science or not, but that the really interesting thing is that the age of the canyon beneath Toroweap Point is much younger than previously believed. Our work, combined with other researchers, suggests that this part of the canyon formed less than a million years ago and the river at Lava Falls arrived within 100 feet of its current depth about 500,000 years ago. By anyone’s idea of speed, that’s fast downcutting.

*Cassie Fenton & Bob Webb*

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## No Shit, There I Was...

**N**O SHIT, THERE I WAS...in tranquil repose, my nylon shorts around my knees, contemplating another fine Canyon morning from my perch atop The Unit. Another gorgeous September day, about one week into a vegetation monitoring trip. The Little Colorado River was a short distance downstream; most of the grueling, scratchy, mucky marsh transects were behind us. Easier botanizing and the fun big water lay ahead of us. Life was fine.

I watched idly as a canyon wren flitted down out of the foliage and landed near the 20mm ammo can lid that was propped against a tamarisk about thirty feet away, marking the turnoff to the Unit. He (or she—can't really tell with wrens) hopped around, behind, under, and finally on top of the lid, bobbing and flicking his tail, thoroughly investigating this odd foreign object that had mysteriously appeared within his territory.

This was a bonus to an already fine morning—who among Canyon junkies doesn't love a canyon wren? That mellifluous, descending warble, pure and beautiful in the deep silence of a slot canyon; their energetic and boundless curiosity. Once, on a previous trip, I watched a wren descend upon an unoccupied boat on the beach and check out the boat and its contents for a good ten minutes. After that, he hopped over to a life jacket clipped to the bowline and inspected it inside and out, hopping into the neck hole and peering out from an arm hole. Curiosity and a high comfort level with manmade objects and nearby human activity seem to be characteristic of wrens in general; in the Southeast, Carolina wrens routinely nest in people's yards and porches, occupying flowerpots, kayaks, and other suitable domiciles conve-

niently provided by humans. One pair raised a brood on our back porch in my husband's backpack.

So I watched quietly to see if this wren would move closer to inspect the yellow seat cushion I'd dropped on the ground halfway between the ammo can lid and the Unit. Sure enough, once the ammo can lid was satisfactorily inspected, he flew over to the seat cushion, perched on it and gave it the once-over. From there he followed the logical progression, landing on the ammo can immediately next to the throne, inches from my elbow. I was practically holding my breath as he scrutinized the toilet paper, the bleach bottle, and other appurtenances of the Unit. He then looked up at me, I looked at him, and he hopped onto my shorts between my knees. He inspected my shorts, peered briefly into the black void below me (whoa, little buddy, don't go there), then from his perch on the crotch of my shorts, turned and calmly looked me up and down. When I finally had to take a breath, the slight movement startled him and he flew off into the tammies.

Judging by the length of his inspections, I am apparently slightly more interesting than a seat cushion but less fascinating than a roll of toilet paper. Be that as it may, I now know something I'd never have known without this up-close encounter: the tiny light-colored specks in a canyon wren's plumage, which appear whitish or beige and are depicted that way in bird books, are actually a beautiful blue, like mountain bluebirds, like little chips of the Canyon sky.

*Patricia Corry*



# Medical Control Quandries

THE FOLLOWING *is a copy of a letter sent to Superintendent Joe Alston from the GCRG Board of Directors on January 31, 2004 regarding medical control.*

The Grand Canyon River Guides board received, and has discussed at length, your December 5, 2003 response to our letter dated January 27, 2003. There were several questions regarding first aid certification requirements that remain unanswered, although we have been discussing this with Grand Canyon National Park (GCNP) for four years. As the National Park Service (NPS) moves toward requiring that guides be certified as Wilderness First Responders (WFR), these concerns must be answered, and quickly.

The commercial season is approaching and guides who have been forced to learn advanced wilderness medical protocols still have not been told why this training is deemed necessary, nor which protocols are appropriate for them to follow. We ask you to please respond to these questions promptly and thoroughly, in writing, before the beginning of the 2004 river season. We also request that a GCNP representative attend the Guides Training Seminar, and be prepared to respond to these questions:

- 1) Which of the protocols (list attached) are approved by the NPS?

When a minimum of Advanced First Aid was the NPS requirement, although many guides had higher levels of training, the expectation of standard of care was unambiguous. Guides were expected to provide advanced first aid. Changing the minimum requirement in the Commercial Operating Requirements to WFR raises the implied standard of care beyond that which we can legally provide. The advanced protocols taught in WFR courses require medical control, which most outfitters have been unwilling or unable to acquire. Our question has been, and remains, without medical control, which of these protocols are appropriate for guides to use?

In your letter, you stated that "If you do not have medical control you may not perform invasive procedures, such as administering of medications and reducing fractures."

You must understand that this vague statement only complicates the matter. Pulling traction on an open femur fracture, for example, drastically reduces pain, bleeding, and tissue damage. Advil is a medication used to reduce pain and swelling. Electrolytes are used for heat and dehydration emergencies. Your letter ruled out these protocols, as well as many others.

First aid courses do not distinguish procedures on the

basis of "invasive" vs. "non-invasive." Cleaning a wound would doubtless be considered invasive and, according to WFR protocols requires medical control. Are you saying we should not clean wounds?

Protocols vary widely depending on the company teaching the course, and by the individual instructor, because there is no standard for WFR. Attached is a list of wilderness protocols that could be considered "invasive." Because the NPS is requiring this level of training, you should review this list, correct it as necessary, and clearly state which protocols are appropriate for guides to use in GCNP, and which are not.

- 2) Why require this level of training for every guide when the bulk of the course teaches protocols that, without medical control, we should not use?

If the NPS is unwilling to approve or disapprove of protocols, or believes that none of them are appropriate, then why should guides be compelled to be trained in them? According to one instructor, "these protocols are what make WFR a WFR. Without them, they would be first responders."

- 3) At the meeting between board members and NPS personnel last January, Sherrie Collins, Deputy Chief Ranger, told us that "WFR is the national standard." How, specifically, did she reach that conclusion?

To which "industry" was Ranger Collins referring? The job of a guide, after all, is not providing Emergency Medical Service (EMS); it is preventing illness and injury. A guide who is honing his first aid skills in Grand Canyon isn't doing his job very well. But regarding river guiding, the industry standard clearly is not WFR. In California, Oregon, Idaho, Utah, North Carolina, South Carolina, Tennessee, and Montana, land management agencies require basic or advanced first aid.

Each WFR course is different; protocols vary, and course lengths range from 60 to 100 hours over six to eleven days, because there is no standard, nor is there an overseeing organization that defines what a WFR certification means. Because of this, providers of the training often won't recognize each other's courses when it's time to recertify.

Is WFR recognized by the state of Arizona? We are investigating this now, because it is not recognized by the state of Utah, nor by the state of New Mexico. In both these states, someone certified in WFR who follows WFR protocols, is considered to be practicing medicine without a license. Is the same true in Arizona?

Please understand, we agree that wilderness medical training is valuable. Many guides voluntarily took these courses long before they were required to, and they will continue to do so. But the level of training required of guides implies a standard of care. Yet there is no standard for WFR, and guides cannot legally follow the protocols. This sets us up for a very scary lose-lose situation.

When a trip participant is injured or becomes ill, guides are expected to decide quickly, in the heat of the moment, what action to take. Because we have asked these questions, verbally and in writing, for over four

years, we reasonably expect the NPS to deliver a clear response by the weekend of March 27, this year.

Until these concerns are addressed, it is unreasonable for the NPS to raise the minimum first aid certification required by the Commercial Operating Requirements beyond the level of Advanced First Aid.



## GTS 2004

**T**IME IS SIMPLY SPEEDING BY. The Guides Training Seminar (GTS) is just around the corner and we couldn't be more excited about the speaker line up for the GTS land session! We've got topics ranging from geology to astronomy, old boats and old boaters to old hikers, resource issues to dam releases, Paiute perspectives to Havasupai concerns, the Whale Foundation Health Fair to financial planning strategies. And that's doesn't even cover everything! We just want to give you a little inkling of how the weekend is shaping up to really whet your appetite (for knowledge, that is). The GTS weekend is not to be missed! Send in your \$30 registration fee before March 1st or pay \$35 after that (unless you're sponsored that is, in which case your outfitter will pick up the tab).

The GTS river trip is rapidly filling. The trip is going to be simply amazing! If you've never gone before, sign up now! If you've gone in the past, but it's been a while, consider going again! We've got *great* speakers on both halves and it will be a fabulous cooperative experience with guides from different companies learning from one another, newer guides learning from more experienced guides, interpretive training in human history, vegetation restoration topics, geology, astronomy, tribal perspectives, hydrology, ranger issues and more. Remember that the GTS river trip counts towards not one, but two trips towards trip leader status. Send in your GTS postcard now! If you don't have one, call the GCRG office at (928) 773-1075 and we'll send you one.

Just as a reminder, here's the schedule once again. Mark your calendars in permanent ink because you know you gotta go!

### FOOD HANDLER'S CLASS

Date: Friday, March 26th, 2004. 10 A.M.—2 P.M.

Place: Old Marble Canyon Lodge (Marble Canyon, AZ).

Contact: Marlene Gaither, Coconino County Environmental Health at (928) 226-2769 or email her at [mgaither@co.coconino.az.us](mailto:mgaither@co.coconino.az.us) to sign up.

### GCRG SPRING MEETING

Date: Friday, March 26, 2004 (starts at 3 P.M.)

Place: Old Marble Canyon Lodge (Marble Canyon, AZ).

Discussion of: GCRG board nominations, CRMP, conservation issues, etc...

Dinner and party follow at Hatchland afterwards. Come and offer your ideas!

### GTS LAND SESSION

Dates: March 27–28, 2004 (8 A.M. to whenever).

Place: Hatch River Expeditions warehouse, Marble Canyon, AZ.

Lodging: On your own (camping, or staying at one of the local lodges).

Cost: \$35 (covers food for the weekend) or \$30 if you sign up by March 1.

Note: If you're sponsored by an outfitter, please sign up and we'll bill them later.

Bring: a camp chair, a mug, dress warmly and in layers and plan on staying for the weekend!

### GTS RIVER SESSION

Upper Half Dates: March 30–April 5, 2004 (Lees Ferry to Phantom Ranch)

Cost for Upper Half: \$165

Lower Half Dates: April 5–15, 2004 (Phantom Ranch to Lake Mead)

Cost for Lower Half: \$185

Note: If you're sponsored by an outfitter, please sign up and we'll bill them later. Requirement: The river session is open to guides/trainees with work for the 2004 river season.

*Lynn Hamilton*

EXECUTIVE DIRECTOR GCRG

# Back of the Boat— The Whale Foundation News Bulletin

## A WHALE OF A YEAR

**D**URING 2003 MEDICAL PHYSICIANS saw seven guides and donated \$830 in services. Mental health professionals including counselors, psychologists and a psychiatrist saw fifty guides and donated 294 hours of service including Liaison Training worth approximately \$10,400. Twenty-six of the counseling hours were billed at fifty percent. The Whale Foundation was able to pay some of the guide counseling in full.

If you need help in any way, please call our confidential hotline toll free at 1-866-773-0773. We also have a plethora of information at [www.whalefoundation.org](http://www.whalefoundation.org). If we can be of assistance in anyway or if you have suggestions or comments, get in touch. We would love to hear from you.

## THE KENTON GRUA MEMORIAL SCHOLARSHIP, MAKING A DIFFERENCE

Following is a letter from a first year recipient of the Kenton Grua Memorial Scholarship:

*It's hard to believe that eighteen years have passed since I first began working as a guide in the Grand Canyon. Looking back, I can't imagine a better way to have invested those years. At the time, a college education was the furthest thought from my mind. I was young and single, and freedom from responsibility was my battle cry. Along the way, I met my wife-to-be, also a Grand Canyon guide, and together we spent our summers rafting, and our winters working in the warm waters of the Caribbean Sea. I was living the dream.*

*Two years ago, quite unexpectedly, I began thinking about a college education. As I closed in on forty years of age, I realized I wouldn't be able to keep up with the physical demands of guiding forever. Beverly, my wife, and I entertained the thought of starting our own dive shop along the coastal shores of Mexico's Yucatan Peninsula. The more I thought of the investment in not only our time, but also all of our savings, I began to have cold feet. It wasn't that I doubted our abilities to be successful in this endeavor, as it was my fears of natural disasters wiping us out. One hurricane, with a silly name like Egbert, could easily turn our dive shop into an artificial reef. I needed something to fall back on.*

*The drastic shortage of nurses, not only in the United States, but the world, was splashed all over the media a few years back. I began speaking to nurses on my trips through the canyon about their jobs. The more nurses I*

*spoke to, the more I realized this was the direction I was heading. I've been an EMT; on and off, for the past ten years, and always have enjoyed the work. Nursing would give me the opportunity to enter a dynamic field in an area of study, which I already knew I enjoyed.*

*Once I made the decision to begin school, it seemed everything just fell into place. The interest rates on home loans were at an all time low—possibly the lowest I would ever see in my lifetime—so we bought a home in St. George, Utah, where High Desert Adventures, the company we were working for, was based. St. George, also, is the home of Dixie State College, an institution with a respected nursing program. I applied for grants, which I didn't receive, but refused to be swayed from my decision. Instead of incurring any more debt, we dipped into our savings and paid for my first semester. The following summer, Meg Viera spoke to me about a scholarship program, managed by the Whale Foundation, in memory of Kenton Grua. I applied, and was pleasantly surprised to learn I was one of three guides awarded a scholarship. The funds greatly helped to offset the financial burdens a college education can be. In addition to the Kenton Grua Memorial Scholarship, this semester I was also awarded an academic scholarship from Dixie State.*

*In summary, change is not only a positive experience, but also an inevitable one. Twenty years ago, I couldn't imagine working anywhere but the Grand Canyon, nor would I have guessed I would be a freshman at the age of 38. My advice to anyone entertaining the thoughts of a career change, at any point in their lives, would be to plow on full steam ahead. Assistance, in many forms, is available to make the transition easier. I give my profound thanks to the board of directors of the Whale Foundation for their generosity, and their desires to make a difference in the lives of others.*

Mike Caifa

The Kenton Grua Memorial Scholarship application is available on the Whale Foundation website at [www.whalefoundation.org](http://www.whalefoundation.org). It's not too early to be preparing your application for the 2004–2005 scholarships. The deadline is June 1, 2004. During 2003 the Whale Foundation awarded three \$1,000 scholarships to Grand Canyon river guides. We are proud of recipients like Mike Caifa and look forward to seeing more guides go back to school and receive assistance from the Whale Foundation.



#### THE FIRST ANNUAL WHALE FOUNDATION HEALTH FAIR

As a reminder, the 2004 Spring GTS will feature the first-ever Whale Foundation's Health Fair. This inaugural event is aimed at promoting healthier lives and lifestyles for the guiding community. It's open to all guides, and it's free!

On Saturday, March 27<sup>TH</sup>, there will be two designated time slots for Health Fair participation. The first will follow the last of the morning presentations, beginning around 12 noon or so, and continue for one to one and a half hours during the lunch break. Health-fair stations will be set up within the Hatch warehouse where participants may access to a variety of volunteers from the medical community (doctors, nurses, physical therapists, etc.) who will be providing a range of free basic screenings and information on a variety of medical problems including: high blood pressure, glaucoma, skin cancer, low back pain, and repetitive motion injuries. In addition, vouchers to obtain free or discounted medical tests will also be given and will include: cholesterol (for heart disease-risk screening), blood glucose (for diabetes screening), PSA's (for males at higher risk for prostate cancer) and mammograms (for women at higher risk for breast cancer). If you miss the first session, no worries! The scenario will be repeated in the late afternoon, around 5 P.M., following the last of the afternoon presentations, and continuing for about one hour around dinner. Then on Sunday, the 28<sup>TH</sup>, the Whale Foundation is also sponsoring a presentation on financial planning as part of its effort to help guides attain financial as well as physical health.

More good news is that nothing is required of participants for the Health Fair other than showing up. That's right—no prerequisite fasting, embarrassing exposures or body orifice probing. So relax, enjoy the weekend! And remember it's free! We hope to see you there!

#### SHANA COUPLAND MENTAL HEALTH MEMORIAL FUND

A new fund has been set up with donations earmarked for mental health services in memory of Shana Coupland. This fund was established by a supporter of the Whale Foundation who wanted to help others with donations given in remembrance of a young and vital woman who lost her life to suicide as a result of depression.

#### GCE SIGNS ON

Grand Canyon Expeditions has announced that it will pay for mental health services provided by the Whale Foundation. Welcome aboard, GCE.

#### 2005 CALENDARS

The Whale Foundation 2005 calendar is out and filled with the artistic talents of 12 contributors from our river community. The calendars are \$12 and can be purchased through the Whale Foundation at other locations to be announced.

#### WINGDING SUCCESS

The second annual Whale Foundation WingDing was held on Saturday, January 31, 2004 at the Coconino Center for the Arts. At this year's WingDing, over 350 people attended for food, drinks, music, live and silent auctions—and just to have a great time. The Whale Foundation cannot begin to thank all of the individuals that made this event happen. For fear of leaving someone out, we wish to just extend our heartfelt thanks to everyone that made this event so successful. Donations came pouring in for sponsorships, auction items, entertainment, food, signage, etc. The generosity we received was unbelievable!

When we first began talking about the WingDing, we wanted to create a party where the river community could get together to not only celebrate our old friend Whale, but also catch up with one another at a relaxing, fun event. We believe we accomplished what we set out to create. Whale was there in spirit—everyone who attended can attest to that. Many in attendance ran into friends they hadn't seen in years. This was exciting to experience. The success of our event will allow us to further extend the programs the Whale Foundation offers to the guiding community.

Once again, we wish to thank everyone who donated and/or attended the second annual Whale Foundation WingDing. If you weren't there this year—we missed you and we hope to see you all again in 2005! Thanks again.

*Meg Viera*



*WingDing snapshots continued on pages 46 & 47.  
Photos by Dan Dieter*

# 2004 Dam Operations; Some Questions and Answers

**I**TALICIZED EXCERPTS ARE FROM: *Glen Canyon Dam - Lake Powell Operations & Experimental Flows*, Bureau of Reclamation monthly update, Feb. 4, 2004, Tom Ryan

## EXPERIMENTAL FLOWS

—Daily high fluctuating releases from Glen Canyon Dam, as part of the Glen Canyon Dam experimental flows, are being implemented from January through March 2004... between a high of 20,000 cubic feet per second (CFS) to a low of 5,000 CFS.

—Beginning February 4, 2004 the high fluctuating release pattern is being adjusted [2 more hours/day of the 20K CFS high release Mondays-Saturdays, and only 8K CFS release on Sundays].

—Scientists have recognized that the humpback chub population has been in general decline since highly fluctuating flows were curtailed in November of 1991. Those flows helped keep the non-native fish, especially the rainbow and brown trout, in check.

—The Finding of No Significant Impact on the experimental flows can be found at [http://www.uc.usbr.gov/amp/flow\\_fonsi.pdf](http://www.uc.usbr.gov/amp/flow_fonsi.pdf).

Why is the Bureau of Reclamation releasing experimental flows from the dam?

Scientists determined that Record of Decision flows from the dam were failing to conserve sediment and endangered native fish in Grand Canyon. So, they designed dam release experiments that may stem the loss of those critical resources. They are also conducting mechanical removal of non-native fish from the river near the mouth of the LCR and in the mouth of Bright Angel Creek to reduce competitive pressures on the chub.

Why the high daily fluctuations from January through March?

These are called trout suppression flows. This is the second year of a two year test to see if large daily fluctuations can 'knock back' the yearly trout spawn, assuming the trout are responsible for eating and competing with the endangered humpback chub. It's also hypothesized that this will improve the Lees Ferry trout fishery by fostering the growth of larger trout.

Why are the trout suppression flows being changed midway through the experiment?

Western Area Power Administration miscalculated the hydropower costs. They originally thought this would be an economic boon, but found they had to buy energy on the 'spot market' for the first two hours of each day at exorbitant rates to satisfy their long-term peaking power contracts. This caused a reduction in revenue from the dam's generators.

How do we know that high daily fluctuations in dam releases helped keep the trout in check?

We don't understand the cause(s) of chub decline. Cause-effect relationships are complex and probably multiple. Other possible causes include: changes in the Little Colorado River flows due to changes in watershed management, climatic variation, increased handling of native fish by scientists, and changes to the aquatic food base.

## DAM RELEASES FOR 2004

Monthly release volumes in February, and March 2004 are scheduled to be 744,000 and 807,000 acre-feet, respectively, which averages out to about 13,000 CFS per day. In April, high fluctuating releases will end. Releases in April, 2004 will likely be 600,000 acre-feet which averages out to about 10,000 CFS.

What will dam releases be during the river running season April-October, 2004?

Dam releases will likely be similar to last year. A minimum of 8.23 million acre feet of water must pass through the dam annually and it is apportioned as 12 monthly volumes. Larger daily fluctuations occur with higher monthly volumes, smaller daily fluctuations with lower monthly volumes. An average daily flow of 10,000 cfs means that daily fluctuations will range from about 7,500 to 12,500 cfs each day (April-May). Average daily flows will likely increase to 13,000 CFS (June-August) then decrease to 8,000 CFS (Sept.-Dec.).

## CURRENT BASIN CONDITIONS

—As of February 4, 2004, snowpack in the Colorado River Basin is 96 percent of average. Because of the extended drought, the snowpack lies atop a mantle of very dry soil. This scenario is not favorable for this spring's runoff, as much of the melting snow will be absorbed by the soil. The

National Weather Service's February inflow forecast is calling for 6.5 million acre-feet of unregulated inflow to Lake Powell in April through July. This is only 82 percent of average.

—The Colorado River Basin is now in its 5th year of drought. Inflow volumes have been below average for 4 consecutive years. Unregulated inflow in water year 2003 was only 53 percent of average. Unregulated inflow in 2000, 2001 and 2002 was 62, 59, and 25 percent of average, respectively. Inflow in 2002 was the lowest ever observed since the completion of Glen Canyon Dam in 1963.

—Low inflows have reduced water storage in Lake Powell. On December 5, 2003, the elevation of Lake Powell dropped below 3600 feet. The last time the water surface elevation was this low was in 1973. The current elevation (as of February 3, 2004) of Lake Powell is 3,591 feet (109 feet from full pool). Current storage is 11.0 million acre-feet (45 percent of capacity).

What is meant by the term 'unregulated inflow to Lake Powell'?

This is the amount of water that would enter Lake Powell if there were no dams or diversions upstream. So, it's approximate, not actual.

How much longer will this drought continue?

It's anybody's guess, but it's shaping up to be worse than the 1930s dust bowl drought. Climatic studies of the Colorado Plateau suggest that it may continue, on and off, over the next couple of decades.

Andre Potochnik

## Where Are the Amphibians?

THE USGS SOUTHWEST BIOLOGICAL SCIENCE CENTER is conducting an amphibian survey in the Glen Canyon/Grand Canyon area and we need your help. River runners and hikers in Grand Canyon at some point find themselves in amphibian habitat, that is, along the main river channel, hiking up one of the sidestream tributaries, or possibly at a spring area high up on the Tonto platform. During your sojourns, you may come across a frog or a toad, and we are very interested in your observations. Information from you will help address the question, "Where are the amphibians in Glen and Grand Canyons?"

Information we need includes location of the sighting, date, species, and life stage (egg, tadpole, adult). Please include descriptive notes as well, particularly how you identified the species. If you can, take a photograph. We are particularly interested in the northern leopard frog, *Rana pipiens*, which has become very rare in the Glen Canyon / Grand Canyon area, but we welcome any and all amphibian observations. Send your information to:

Lisa Gelczis

USGS COLORADO PLATEAU FIELD STATION

928-556-7197

[lisa.gelczis@nau.edu](mailto:lisa.gelczis@nau.edu)



Northern Leopard Frog (*Rana pipiens*): note smooth skin, green or brown coloration overall, prominent dark spots, large eyes, pointed snout; active, strong jumper—much quicker and more active than any of the toads; most likely to be seen in water or in dense vegetation immediately adjacent to stream.



## Book Reviews

“HIJACKING A RIVER: A POLITICAL HISTORY OF THE COLORADO RIVER IN THE GRAND CANYON” BY JEFF INGRAM, 2003, VISHNU TEMPLE PRESS, FLAGSTAFF, 479 PAGES, PAPERBACK, \$17.95

I’LL CONFESS AT THE OUTSET that when I agreed to read and review this book, I didn’t think that I would enjoy it or have much good to say about it. It was, as I expected, limited in a number of ways, but in spite of it’s flaws I think *Hijacking A River* deserves a larger audience than it is likely to find.

During the period from 1966 to 1969, as interest in Grand Canyon boating was taking off (no doubt in part due to the post-Glen Canyon dam river environment), author Jeff Ingram was intimately involved in the controversies over the management of the river. As he states in his introduction, “As the author of this book, I have a definite point of view, shaped over almost twenty years in the 1960s and ’70s fighting to protect the Grand Canyon and to enhance peoples ability to enjoy it in ways that do not damage the place and allow us to enjoy it on its terms. The fighting was necessary, is still necessary, will continue to be necessary, because others see the Canyon very differently.”

Ingram is an unapologetic opponent of motorized boating in Grand Canyon, an advocate of designating the river as a non-motorized “Wilderness,” as well as a severe critic of the National Park Service and the companies that run commercial trips on the Colorado River. And in the mid to late 1960s, he was on the staff of the Sierra Club, their Southwestern Representative, opposing the construction of more dams and fighting for his vision of good management for the Colorado River, in opposition to the rapidly expanding interest in commercial boating.

Consequently, this “history” is told from a very personal point of view. Ingram does not like commercial operators, and makes no bones about it. They are deliberately trivialized as “comm ops”, just as some folks have dismissed Sierra Club conservationists with the term “tree huggers.” Nor does he have anything good to say about motorized boating in the Grand Canyon—he doesn’t like motors, and thinks they have no place in the “wilderness”—which is what he believes the Grand Canyon would, and should, be, if it were not for the pernicious influence of commercial outfitters and their cronies in the National Park Service.

Like most true believers, Ingram never bothers to consider the possibility that people holding different points of view might have as much reason for their opinions as he has for his own. Consequently, rather than engaging anyone with different views on managing

the river, he dismisses them—and their opinions—as obviously wrong, if not downright evil. This “holier than thou” attitude was, no doubt, at least part of the reason that the Sierra Club’s—and Ingram’s—plan for managing the river went nowhere. He’s definitely preaching to the choir here.

Most of *Hijacking a River* details events and controversies of the late 1960s and 1970s. The interesting decade of the 1980s—when Ingram was no longer an active player—is quickly skipped over. There’s nothing about the floods of ’83 and ’84, while Glen Canyon Environmental Studies is mentioned twice, both times in a single paragraph. Grand Canyon River Guides, and the successful three year campaign that led to the passage of the Grand Canyon Protection Act, isn’t mentioned at all. While Ingram obviously sympathizes with private (i.e. “non-commercial”) boaters—and does mention their lawsuit which restarted the Colorado River Management Plan (CRMP) process—it’s easy to get the impression that his knowledge of private boaters is limited, at best.

In spite of these shortcomings and others—a jarring style of writing stands out—there’s a lot of interesting material here. The early history of commercial Grand Canyon boating, and its spectacular growth during the late ’60s and early ’70s, was before the time of most current guides. The current controversies over allocation, wilderness, motors, and the relative importance of preservation versus recreation, to mention a few, have a long history that predates the involvement of most of the folks now embroiled in these issues. Arguments about the importance, accuracy, and relevance of research in managing the canyon go back a long time.

There’s an entertaining account of how human waste was ignored, until that became impossible, then containerized in privies made of 55 gallon drums buried in sandbars near popular camps (until they became un-approachable), then voluntarily carried out (by a few companies) before the NPS finally recognized (a decade after the Sierra Club) the necessity of hauling all waste out of the canyon. This brought back fragrant memories of my early trips. A similar toe-dragging, head-in-the sand attitude was adopted in regard to epidemics of communicable disease on river trips, following the shigella incidents in ’72 and ’79. However, Ingram is clearly impatient with both outfitters and the National Park Service, who were—to be honest about this—struggling to invent and manage something entirely new (for themselves, their customers, and future visitors). Characterizing them as greedy (outfitters) and incompetent (NPS) seems to me to greatly oversimplify the situation, and demonizes everyone who did not hold the Sierra Club party line.

Between the covers of *Hijacking a River* you'll find the names of some familiar characters—perhaps a third of the outfitters from the early days are still active—but, like me, you may not recognize all of them from Ingram's descriptions. Ingram has clearly bought into the idea that motorized boating dominates the Grand Canyon because, way back when commercial boating got started, the outfitters were obsessed with the economic efficiency of large groups, quick trips, and large passenger to crew ratios. I think he's all too eager to ignore the obvious, that then—as now—it's easier to sell a one week vacation trip than it is to sell one that is two or three times as long, and more expensive besides. Most people take their vacations a week at a time.

Ingram and his sympathizers obviously subscribe to the notion that a long, slow, non-motorized trip is the best way to see the canyon, but they go a bit further and argue that if you aren't willing to do it their way, well, you should just stay home and make more room for people like them. I'm inclined to think—and the history of the past couple decades seems to demonstrate—that millions of other Americans simply don't agree.

In summary: this book has some rough edges and a very one-sided point of view. But it's still very interesting, and—considering the on-going controversy over the Colorado River Management Plan—it tells an old story, but one that is still relevant. Others really do “see the Canyon very differently.” Ingram has written from a front-row seat perspective, and documents his side of the story with hundreds of references to documents, papers, testimony, meetings, newspaper articles, etc. You probably won't agree with much of what he has to say, or how he says it. But like it or not, it may be too important to ignore. In the controversy to come over the Draft CRMP, some folks will be using *Hijacking a River* as their bible, history book, and call to arms: those who disagree should at least know where they are coming from.

*Drifter Smith*

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“THE BOOKS OF THE COLORADO RIVER & THE GRAND CANYON A SELECTIVE BIBLIOGRAPHY” BY FRANCIS P. FARQUHAR, EDITED AND ENDNOTES BY DANIEL F. CASSIDY, EXPANDED INDEX BY RICHARD D. QUARTAROLI, 2003, FRETWATER PRESS, FLAGSTAFF.

“THE BOOKS OF THE GRAND CANYON, THE COLORADO RIVER, THE GREEN RIVER & THE COLORADO PLATEAU 1953–2003 A SELECTIVE BIBLIOGRAPHY” BY MIKE S. FORD, 2003, FRETWATER PRESS, FLAGSTAFF

GRAND CANYON BIBLIOMANIACS need no introduction to “Farquhar”—as this rare and long out of print classic is known. Farquhar's little book is the standard reference to the most collectable, and readable, literature of the Colorado River. In it he lists, and briefly describes, his favorite 125 works on the Canyon and the River, from the earliest accounts up until 1953, when it was first published. In it you'll find your old favorites by Powell, Dutton, Dellenbaugh, and Kolb, and dozens of other classics, with a brief description of each, and notes on various versions and editions (updated by Dan Cassidy), with an expanded index (courtesy of Richard Quartaroli).

Brad Dimmock has performed a great service for folks interested in the Grand Canyon and Colorado River, by making these volumes available in attractive matching editions. Farquhar has been long out of print, and is itself on the order of a rare collectable. In honor of the 50th anniversary re-issuing of Farquhar's classic,

Mike Ford has prepared a companion volume listing his picks for the best of the last fifty years, an additional 225 titles. It would be a very empty ammo box that doesn't have at least a couple of Mike's favorites, and a very good library that had them all.

The literature of the Grand Canyon continues to grow at an exponential rate, and just trying to keep up with new books as they are published would probably be more than a full-time occupation, if not an impossibility. If you want to include the classics of the past as well as new releases in your reading, you'll appreciate the value of these two little gems, which will give you lots of ideas about how to round out your acquaintance with the best of Grand Canyon literature.

This is not to say that either Farquhar or Ford has absolutely the last word on what's worth reading: any well-read person interested in the Grand Canyon and the Colorado River would come up with a slightly different list. However, there would certainly be a very large amount of overlap. Even the best libraries, which might have many of these titles, won't have them all shelved in the same place for your convenience. Browsing Farquhar's and Ford's selective bibliographies can save you some time while looking for a good book to read next, and is interesting in its own right.

*Drifter Smith*

# Super Guide Map

**T**HE GRAND CANYON SUPER GUIDE MAP is more than just a map. It is like having a park ranger in your back pocket. It is double-sided, water resistant, and tear resistant. The front side covers the 280 mile span between Lake Powell and Lake Mead and is packed full of geologic diagrams and essays. The back side zooms in on the Canyon's central corridor, and is full of facts, figures, and historical anecdotes. The Grand Canyon *Super Guide Map* labels every major temple, butte, side canyon, point of interest, rapid and trail within Grand Canyon's limits.

For those who have wanted more information in a map, Bronze Black—designer, photographer, geologist, and Grand Canyon river guide—has created this comprehensive, user-friendly, guide-map to the Grand Canyon.

The maps are available March 2004 for \$9.95 (ISBN: 0-9740027-1-2). If you are interested, please contact Bronze Black, Dragon Creek Publishing, LLC, P.O. Box 546, Flagstaff, AZ 86002-0546, gc@superguidemaps.com, (928) 525-0359.



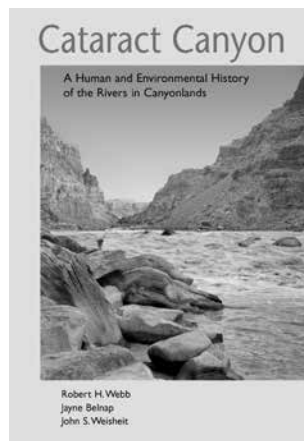
## Book Announcement

**A** NEW BOOK REGARDING the Colorado Plateau has reached the shelves: *Cataract Canyon: A Human and Environmental History* by Robert H. Webb, Jayne Belnap, John H. Weisheit.

This ambitious book will enthrall armchair naturalists and river runners alike, offering a stunning tour through the natural, environmental, and human history of Cataract Canyon. Setting the stage with preliminary chapters on geology and hydrology, prehistory and geography, biology, and river-running history the authors take the reader on a “downriver journey,” narrating an exploration of the river that is breathtaking in scope.

Robert H. Webb is a research advisor with the us Geological Survey in Tucson, Arizona. Jayne Belnap is a biologist with the us Geological Survey in Moab, Utah. John Weisheit is a senior river guide and cofounder of Colorado Plateau River Guides which publishes the journal *The Confluence*.

The book (480 pp., 7 x 10; 125 illustrations, two maps) will be available in April 2004. A cloth bound version is \$60 (ISBN 0-87480-781-60) and a paper back version is \$26.95 (ISBN 0-87480-782-4).





## Historic Inscriptions At Lees Ferry

LEES FERRY HAS TRULY BEEN the crossroads of the canyon country when taking into account both river travel up and down the Colorado and over-land travel between Utah and Arizona. It is located at the mouth of the Paria River where, for a ways, the confining walls break down and lower between the foot of Glen Canyon upstream and Marble Gorge downstream. This has long made it the primary crossing place of the Colorado River between what is now Moab, Utah, some 279



*Lees Backbone and Echo Cliffs*

miles above, and what was Pearce Ferry, almost the same exact distance below. Indeed, the late P.T. Reilly was able to author a tome of 542 pages concerning just the Lees Ferry area.

Though utilized by Native Americans for over a millennium, whites, with our Euro-centric concept of history, first came to what would one day be called Lees Ferry in 1776. Today, nearly two-and-a-half centuries later, it remains the embarkation point for thousands of whitewater river-runners heading downstream on the Colorado through the Grand Canyon, while Highway 89 crosses not far to the south. It should not be surprising, therefore, that at least some of the myriad travelers that have gone through Lees Ferry over the years have left a record of their passing in the form of names and dates on the surrounding rocks.

These inscriptions have been both carved and painted on the cliffsides, rock boulders, and even into the stone walls of one of the 19<sup>TH</sup> century buildings still standing at the site. Some of these signatures are easily seen and are well known to modern tourists and visitors. Others are familiar to backpackers and hikers who range away from today's boat-launching area. However, there are some that are only seen by ardent searchers and enthusiasts.

Of the five separate localities in the Lees Ferry area where these historic inscriptions can be found, the best

known is the old Lees Ferry fort. Situated facing towards the river, it is only a few paces north of today's parking lot and concrete boat-launch ramp. The one-story, stone building was constructed in the summer of 1874 by the Mormon Church to serve as a combination trading store and fortification for dealings with the Navajo Indians across the Colorado to the south.

On the face of the large stone lintel above the eastern door, a discerning eye can make out the weathered remnant of at least two words, painted on with what was probably axle grease. The first four letters can be made out to be "Andr—," but the remainder is no longer readable. The possibility exists that it may be the name "Andrew Gibbons," one of the leaders of the fifteen-man Mormon building crew. Also dating to the construction period is the name "E.W. Stevens," incised into one of the building stones on the back of the trading store-fort. Immediately underneath are the letters "Jul." A long one, or a short two days' journey to the west, the same name, E.W. Stevens, but this time with a complete date of "Jul The 3, 1874," is carved at House Rock Spring.



*E.W. Stevens inscription, Lees Ferry trading post*

Four other inscriptions carved into the fort walls date from an 1891 prospecting-river trip. Initiated by Denver capitalist James S. Best, the plan was to descend the Green and Colorado Rivers from the railroad town of Greenriver, Utah, to a silver vein located in the depths of the Grand Canyon below Lees Ferry. They would also prospect for other possible mineral resources as they boated down the rivers. They reached Lees Ferry on August 14, and it was soon decided to end the river portion of their expedition here and continue on to Bright Angel Canyon (near the mouth of which was the reported silver prospect) over land with packhorses.

While Best and one other member of the expedition traveled out to Kanab, Utah, to secure horses, the rest of the group stayed in the "old John D. Lee fort," and



spent the next few days cleaning out the building and generally tidying up their camp. Names incised into two adjacent stones of the structure, to the left of the western door, are those of expedition members “E. Kane” and “McCormick.” Elmer Kane’s is dated “Aug. 20. 91,” while James A. McCormick’s is “Aug. 18–91.”

As events unfolded, Best was called back to Denver to meet with the mining company board, and as a result the men languished at Lees Ferry for over two months. Member Luther H. Jewel left “LH Jewel Sept 20–91” incised into the back wall of the fort on the left, close to E.W. Steven’s inscription. Undoubtedly, it was also sometime during this two-month waiting period that John Hislop carved “J. Hislop” to the right of the eastern front door.

With the eventual return of Best, the party finally departed Lees Ferry on October 17. The silver prospect turned out to be a bust, and by the end of the month the expedition subsequently broke up. One other inscription, lightly scratched into the back wall of the Lees Ferry fort, near that of Jewel’s, reads, “JRB 91+Nov.” None of the members of the expedition had these initials, the closest being James S. Best himself. Though the date would be in agreement with when any of the members of the now-dissolved prospecting party might have returned to Lees Ferry, this inscription probably does not relate to the Best expedition.

In 1871, John Doyle Lee was sent by the Latter-day Saint church president, Brigham Young, to the mouth of the Paria River to establish a crossing place on the Colorado River for future Mormon settlement into the Little Colorado River region of northern Arizona. Lee and his family arrived on or close to New Year’s, 1872. Later that fall the first ferryboat was constructed for use by the colonizing expeditions of the coming year. The point chosen for the ferry crossing was about half-a-mile upstream from Lees farm and residence. Here, at the foot of Glen Canyon, various ferryboats would transport hundreds of travelers back and forth across the Colorado from 1873 until 1928.

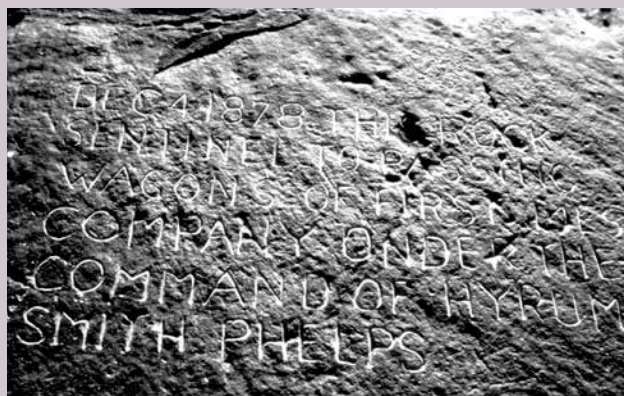
About halfway up to the ferry crossing, carved into a low rock wall immediately adjacent to the river, is the following inscription: “G.M. Wright Nov. 17, 1892.” Perhaps inspired in part by the newspaper publicity surrounding the Best expedition the year before, prospector George M. Wright had been hired by a mining company in Salt Lake City to follow in Best’s “footsteps” down the Green and Colorado Rivers, searching for possible mineral locations. As did Best, Wright ended his river voyage at Lees Ferry, reaching that point on November 17. The inscription probably marks his landing and/or camping place. He subsequently remained in the Lees Ferry area for the next couple of years prospecting, before finally drifting farther south in Arizona to new mining opportunities.

On the opposite, or south side of the ferry crossing,

a rough wagon road had been constructed which followed back downstream for a short ways before angling up the steep ascent of Lees Backbone. On some rocky outcroppings to the left of this road can still be seen several names left by travelers. One, painted on with what was probably axle grease, reads, “E.A. Burk Nov 21 —.” Unfortunately, the year date has been nearly weathered away, but appears to be “89.” Luckily, this same person left another inscription some forty miles to the west along the Mormon Wagon road at House Rock Spring. This carving provides much more information: “Edgar A. Burk Of Farmington Cut This In Sep 22 1880 Going To Arizona A.D.” The November 21 date at Lees Ferry indicates, obviously, a different trip.

Very close to the Burk inscription is one reading, “Val. Wightman May 10 95.” Wightman also left his name and the date incised at Willow Springs, farther south on the Mormon wagon road, but three days earlier, on March 7. This would, of course, indicate that he was traveling from Arizona north to Utah.

From the south bank of the Lees Ferry crossing, the Mormon wagon road soon began its way upward along the steeply sloping incline of the large rock ledge named, facetiously, by early travelers “Lees Backbone.” Part way up the mile-long climb a lengthy inscription can be found deeply carved into a boulder: “Dec 4 1878. This Rock Sentinel To Passing Of First Mesa Company Under The Command Of Hyrum Smith Phelps.” Phelps, from Bear Lake County, Idaho, piloted a group of 83 individuals from that region, and also from Salt Lake County, Utah, to reinforce the relative few Mormon settlers who had come “over the rim” of the Colorado Plateau to the



Hyrum Smith Phelps inscription at Lees Backbone

valley of the Salt River in central Arizona the preceding spring.

Farther south, shortly before the old route descends to the comparatively flat level of the Marble Platform, another early traveler left his name and the date incised near the bottom of a roadside boulder: “Isaac Miller 24 Jul 1885.”

From the beginning, early travelers complained about the rugged, jolting, slow route up and over Lees Backbone. As a result, beginning in 1878, a lower ferry crossing was established below the mouth of the Paria River, thus avoiding the obstacle of the “backbone” and attaining the level of the Marble Platform via a comparatively short dugway constructed up from the south side of the Colorado. However, the high spring floods made a crossing here extremely difficult and dangerous, and therefore this lower ferry crossing was only utilized between August and May. By 1897 it was abandoned altogether.

Old names and dates can still be seen on both banks of this lower crossing site. Those on the north side, painted in axle grease on exposed rock ledges, have almost entirely weathered away. The only one still readable today is the initials “J.C.K.,” with a date of “Mar 21 88.”

Close to the south side landing of the ferry, in a more sheltered overhang of the cliff, a dozen names, also painted in axle grease, remain to be seen. The oldest is probably that of “H. Cluff.” Below the name, and more weathered, can be read, “Oct 14.” The year date, however, below the month and day, can no longer be made out. The extended Cluff family first settled on Silver Creek, one of the headwaters of the Little Colorado River in east-central Arizona, in 1877. Various members of the family left several inscriptions at different places along the old Mormon road between Utah and Arizona, with dates ranging from 1876 to 1893.

Other travelers’ names still readable under the rock overhang at the south bank ferry landing include, “J.A. Teeple Sept. 10th. 92,” “I.T. Kempton Oct. 92,” “Annie Hunt 1892,” “C.H. Mar. 29/95,” and “Alice” and “Jack Rowe Nov 13/96.”

Before there was a wagon road linking the established Mormon towns of southern Utah with the fledgling settlements in northern Arizona, trails came to the Colorado River at the mouth of the Paria. Prior to 1874 this point was little used as a stream crossing; the depth of the river was simply too great. The main crossing point before that time was some forty miles upstream, at what was variously known as the Crossing of the Fathers, or simply as the Ute Ford. As the latter name indicates, for most months of the year, the Colorado here was shallow enough to be used as an actual ford; boats or ferries were not necessary.

Native American foot trails, and later used by horses, reached this river ford from the Lees Ferry area only after climbing the thousand-foot face of the Paria Plateau to the north. The trail followed up the Paria River about three miles, before abruptly ascending the north side of the canyon via some cascading sand dunes and scalable rock ledges. Known simply as the Sand Trail, or later as the Dominguez Pass Trail, it remained the principal foot

and horseback egress to the north from the Lees Ferry area until 1910.

At the bottom of the Paria canyon, very close to where the Sand Trail begins its climb upwards, a large talus boulder sits a few feet off of the path. Carved into two of its sides are the initials “P.W.J.” and “F.T.J.,” with the year date “1896.” Price William and Frank Tilton Johnson were two of the sons of Warren M. Johnson, who operated Lees Ferry for the Mormon Church from 1875 until November 1896. Very likely the initials and date mark the Johnson boys’ memorial and good-bye to the place where they were born and to the only home they had ever known.

One last inscription site is found in the Lees Ferry area. It is intriguing in the fact that, while it does date back into the 19<sup>TH</sup> century, it is not as “old” as it seems. About three miles straight west from Lees Ferry, at the foot of the Vermilion Cliffs, is what is shown on today’s maps as Fisher Spring. Beneath the green cottonwoods a weathered slab of rock bears the names “C.E. Holladay 1857,” and immediately below, “C.A. Huntington.”

This inscription would be important as far as Lees Ferry regional history is concerned, for it would predate the earliest known Anglo-American visit there by one year; Jacob Hamblin’s first missionary and exploratory expedition to the Hopi pueblos in 1858. However, written records and oral testimony show that C.E. “Gene” Holladay and Clark A. “Al” Huntington, two Mormon prospectors, did not actually come to Lees Ferry until 1889. For the next few years they made Lees Ferry their “base” for making short prospecting trips into the surrounding region. Very probably it was during this period that one, or both, of the men carved their names at Fisher Spring, said to be one of their favorite camping places. Why they put the 1857 date is not known; perhaps just a “joke” on their part.

All of these inscriptions are important historical records of Lees Ferry’s past. Many of them, especially those “painted” onto the rock, are succumbing naturally to time and the elements. Modern-day visitors do not need to hasten the process by touching them or “adding to” them. Remember the old adages you have heard since you were a child: “Look, but do not touch,” and “Take pictures, but leave only footprints.”

*Jim Knipmeyer*

## Sincerest Thank You's ...

**W**E ARE THRILLED, HONORED and quite tickled pink to be able to announce that our year-end fundraising drive raised over \$11,000 for Grand Canyon River Guides and our many important programs! It is extremely gratifying and even humbling to know that our members are such steadfast supporters of our efforts. The list below reflects all year-end contributors as well as those unsolicited donations received within the last two months. We wish we had space to list everyone who has donated to GCRG over the year. Each and every one of you has our sincerest appreciation! We also apologize for anyone we may have missed in this listing, so please let us know.

Mr. & Mrs. Philip R. Albright  
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Dick Warner  
Michael Wehrle

Greg Woodall  
Tim Yanacheck

GCRG would also like to thank our wonderful funders who have awarded us grants over the last six months (since our July 1 fiscal year commenced). Their significant funding support has bolstered many of our programs:

Ceres Foundation—general support  
Chehalis Fund of the Tides Foundation—for the *boatman's quarterly review* \*  
Grand Canyon Conservation Fund—Guides Training Seminar, Adopt-a-Beach Program, Adaptive Management Program activities, and Grand Canyon Plant Field Guide  
Flagstaff Cultural Partners—Grand Canyon Plant Field Guide  
Grand Canyon Monitoring & Research Center—Adopt-a-Beach program  
Norcross Wildlife Foundation—oral history project  
Walton Family Foundation—for the *boatman's quarterly review*

\*on the recommendation of Mr. Drummond Pike

All in all, we thank *every one* of our members and *all* of our funders for standing behind us and believing in our organization and our goals. You buoy us up and make us strong.

*Lynn Hamilton*  
EXECUTIVE DIRECTOR GCRG

## ... But Could You Please Help Some More?

I KNOW IT MAY SEEM STRANGE to thank our contributors and then ask for more help in the same breath (or at least the same page), but that's pretty much par for the course. GCRG could *always* use more of your help in a variety of ways. Here are just a few suggestions:

1. The 2003 tax year may have just ended, but the 2004 tax year has begun so if you didn't have a chance to send us a contribution last year, why not send it now? Our funding for the BQR looks to be nowhere near as significant as it was last year, so we count on *you* to take up the slack! *Please* help us out, won't you? These tax-deductible contributions help us enormously, while they help you on your taxes. It's an eminently worthy cause, so do it today! Large or small, it all helps and we're grateful for every penny.
2. I know it's not something any of us likes to think about, but please consider naming Grand Canyon River Guides as a beneficiary in your will. The Colorado River and the Grand Canyon have most likely figured quite significantly in your life. A bequest to GCRG helps to protect those precious resources in perpetuity. It's a wonderfully touching way to keep on giving to the place that has given you so much.
3. Come and volunteer in the GCRG office. If you know your ABC's, we can use you! We've had wonderful volunteers lately including Liz Sharp, Ellen Rocher and Bob Melville. You guys rock! Our stacks of filing are always threatening to topple, so even an hour of your time will help!
4. Pay your dues on time. Don't let them lapse and lose the chance to read the BQR! Your membership dues keep us strong.

And, I know I've said it before, but this is *your* organization. We wouldn't be here without the support and vitality of our membership. We thank each and every one of you for all you do for the Canyon and the river, in ways large and small. It's a deep love that we all share in our hearts. Please consider our suggestions above, and help us as you are able. Thanks so very much.

*Lynn Hamilton*  
EXECUTIVE DIRECTOR GCRG



## Norm Nevills

**I**N 1936, AN EX-CALIFORNIAN named Norman Nevills put together a guided trip down southeastern Utah's San Juan River for three men who wanted to see and photograph Rainbow Natural Bridge. Two years later he conducted the first fare paying passengers down the Colorado River through Grand Canyon. The trip, which produced considerable national publicity, made commercially led river expeditions a brand new "trophy vacation" choice, and positioned thirty-year old Norman Nevills as the man to lead them.

At the time of his death in 1949 he had, for about ten years, been known as "The World's No. 1 Fast-Water Man" and, although it was magazine and newspaper writers who invented the title, Norm worked very hard to earn and maintain it, and basked in it as an unparalleled stock in trade. As early as 1936 he had begun to think of professional river running as a career, and in the ensuing years could get fairly distraught about anything he felt could tarnish his reputation for safe adventure. Besides being preoccupied with passenger safety, especially on-river, he worked very hard to make every trip a mixture of adventure, exploration, games, tall tales, and stunts.

For newspapers and magazines he was a wellspring of publicity ideas that generally were intended to focus on the adventures rather than the man. But most writers approached the stories from the hero angle, which he didn't mind at all because publicity for Norm Nevills was publicity for Nevills Expeditions.

Before he had established a reputation of his own, Norm did his best to give himself a relevant boating-flavored heritage, drawing on lore about his father and grandfather. After going on the 1942 San Juan and Grand Canyon expeditions and interviewing Norm for a magazine story, author Neill C. Wilson wrote, of Norm's grandfather, that Captain William Alexander Nevills once owned a vessel on the Great Lakes. Of Norm's father, William Eugene Nevills, Wilson wrote that he had been in Alaska around 1900, where he had learned about driftboat design and the Canadian-Alaskan method of "backing down" through fast water, and had built a boat and run the White Horse and Miles Canyon Rapids. Although these snippets had gotten a bit garbled, each of them had some basis in a family background more colorful than Norm may have known.

During his rise to fame, Norm developed some detractors, not especially for his achievements, but for such things as being a showoff, or exaggerating, or renaming landmarks and side canyons more colorfully. His harshest critic was Otis Marston, who became a preeminent river historian.

Marston and Nevills met in 1942. Advertising man /

free lance writer Neill Wilson had been one of Norm's San Juan passengers in May and, seeing the story potential, had signed up for the July 15, 1942 Grand Canyon Expedition. Wilson suggested that he and Marston both bring their teen-age sons along. The expedition—six passengers in all—probably wouldn't have materialized in that war year except for Wilson's signups, and his account of the 1942 expedition was one of the spring-board stories that helped launch Norm's career and reputation. The other two passengers Ed Olson and Ed Hudson, would also be heard from again: a few years later Ed Olsen produced the award winning documentary film *Danger River*, and about the same time Ed Hudson, with his *Esmeralda I* and *Esmeralda II*, introduced the running of hard hulled motorboats through Grand Canyon.

On the 1942 expedition, Norm let Marston row President Harding and Mile 205 rapids as well as a few other middle-sized ones, and Marston, like countless others who have been baited that way, was hooked. In 1944 he went on the Nevills June 6–12 San Juan trip and was allowed to share the rowing with some other passengers Norm was eyeing as potential boatmen. In July 1945 Marston graduated to the big water when he rowed one of the cataract boats on a Nevills Expedition for the Marston family down the Colorado from Moab spring through Cataract and Glen canyons to Lees Ferry. In 1946 Marston recruited the passengers for Nevills Expeditions down the Snake and Salmon rivers in Idaho, and was rewarded by being chosen as one of the boatmen. In 1947 he rowed the cataract boat *Joan* on the upper Green River and in Grand Canyon. He rowed the cataract boat Joan on the upper Green River in 1947, and through Grand Canyon in 1947 and 1948.

From 1942 through the end of 1948 the two men corresponded frequently. Their relationship was a mix of common interests and symbiosis. Marston, who retired from E.F. Hutton in 1947, had discovered, in river running, an exciting new interest. Norm, whose expeditions and other work kept him in remote country a good deal of the time, had discovered an enthusiastic, perspicacious, well-heeled and well-located promoter. Marston showed river films and gave travelogue talks frequently in the Bay Area and, as time went on, in other parts of the country. Norm wrote newsy letters to Marston, gave him historical information, and put him in the limelight as a whitewater boatman and budding historian.

Sometime between the 1945 and 1946 expeditions Norm decided that the trips would be more fun if everyone had a nickname and suggested that Marston, who had grown chin whiskers, resembled a college

professor, and should be called “Doctor.” By late 1945 Norm’s letters opened with “Dear Doctor” which he later shortened to “Doc.” Marston signed his letters, “Cheerio —Doctor” and opened them with “Dear Admiral,” later “Dear Commodore” and eventually “Commodore Salute.” Norm was apparently flattered and when he responded to Marston’s letters he signed them as he was addressed: in the beginning as “Admiral” and later as “Commodore.”

The two men were from totally opposite worlds. Marston was affluent, urbane, erudite, an ex-Navy officer, swimming coach, and stockbroker. Norm was provincial, horny-handed, rapid-fire, cocky, a working man. Marston lived in the university atmosphere of Berkeley; Norm had spent most of his first twenty years as an only child in a one-parent household and then was transplanted to a poverty pocket in the Utah desert where the outside world seldom seen or heard from, was of secondary interest.

Although Marston described differences between river people as “feudin,” he and Norm didn’t really feud, they just toyed with each other pretty hard. Norm once mentioned having a letter from the renowned Buzz Holmstrom, in which Holmstrom gave some opinions about running rivers in high water, and Doc wanted the letter for his historical collection. Norm kept finding reasons he couldn’t look for the letter right at the moment. Then, when Norm wanted to borrow Doc’s movie film for a showing, Doc “forgot” to send it to Norm in time.

One of their early clashes was in 1945, over determining the height and span of a natural bridge in a tributary of the Escalante River, which resulted in Norm getting embarrassed by his not knowing trigonometry.

In the summer of 1947, between their runs of the upper Green and the Grand Canyon, Norm, Marston, and Rosalind Johnson had a three-way tiff at Mexican Hat. Ros, who was the seventh or eighth woman to go through Grand Canyon and now considered herself a seasoned river passenger, decided to go down to the San Juan behind the Nevills house and float through Gyp Creek Rapid on an air mattress. Joan Nevills wanted to do it too, and Norm was all for it, but Ros, understandably not wanting to be responsible for someone else’s eleven year old, wouldn’t take her along. Norm considered Ros’ refusal tantamount to giving his daughter orders. Norm and Ros had a spat over it and when it was over, Marston rebuked Norm, and that strained the relationship.

In February 1948, after watching Marston’s film at the Mesa College auditorium in Grand Junction, Colorado, Norm told Ros he didn’t think much of it and suggested *Danger River* as a “real film.” Ros, now miffed at Norm, undoubtedly relayed this to Marston, whose letter to Norm a couple of weeks later seemed

intended to create, via Doris, an issue between Norm and his publisher friend Randall Henderson. The letter suggested that Norm “tell Doris that Ros...considers you have a right to sue Randall for those pictures of her.”

Later that same year during the July Grand Canyon expedition, Frank Masland, skeptical of some of Norm’s campfire tales, questioned Marston, the budding historian, as to their accuracy. Marston obliged by correcting Norm in the presence of his passengers. During the same expedition Marston hiked up Lava Canyon for several hours to explore, and stayed so long that, by the time he returned, the others had camped and prepared dinner, and they had to hurriedly gulp it down and reload the boats and run against the edge of darkness to the place Norm had intended to camp to light the signal fire that would be seen from Desert View.

That December, Marston narrated a silent film presentation for a large audience at the Pasadena Community Playhouse in which, as part of his presentation, he lauded Norm Nevills. Then about a month later he learned that he was not being offered a rowing job in 1949. After that, Marston had nothing good to say about Norm. He changed the spelling of his nickname to “Dock” and began claiming “his” rowing job was given to P.T. Reilly—who counterclaimed that it was actually given to Jim Rigg, because Jim was hired after P.T.

Despite having changed his nickname to “Dock” (and later, in correspondence with P.T. Reilly) to “Parson,” Marston continually assailed Norm for name changing and, ten years after the Nevills’ death, still refused to refer to the canyon that Norman called Mystery Canyon as anything except “the canyon at Mile 73.6”—and eventually had its name officially changed to Anasazi Canyon. As a final riposte, Marston penned a note on the file copy of one of his “Dear Admiral” / “Commodore” letters to Norm declaring that he had given Norm those nautical titles in derision.

Although Marston chose to bundle Norm’s traits together under the charge “legend builder,” a fuller and fairer appraisal would have been: “what a character!” Whatever else Norm Nevills was, he was fearless, fun loving, self-confident, highly energized, physically oriented, strong, agile, literate and expressive. He was happy with himself.

He stood five feet seven inches tall and weighed 140 pounds. Although he couldn’t bend the heavy oars like bigger men could, he had an extra measure of energy, and wide shoulders, strong arms, and calloused hands from life and labor at Mexican Hat. He was handy at most trades. He was keen at reading water, and lightning quick to react. In his thousands of miles of river running, there’s no indication he ever capsized a boat.

As the only child of a doting mother and often absent fortune-seeking father, Norman had grown up

as something of a showoff. He had little or no fear of height and one of the things he liked to do was climb. At age seventeen, he and his mother visited his father at the Mexican Hat oil camp and on a day when Billy Nevills had company from up-country, Norm climbed up on the drilling rig's "walking beam" and did his version of a Navajo dance. "Norman, get down from there," yelled Billy Nevills, "you got less sense than your god damned old mother!"

That was a bit unfair: Norm didn't lack sense—he just had a high tolerance for fear, and could transcend it when the reward was great enough. His friend Hilda Oliver recalled that "he used to stand on his head and hands on the rail of the river bridge and do crazy things on the cables and scare poor Moe and me half to death." That stunt worked well on the river trips years later: when the Colorado was carrying a lot of debris, Norm would often row up to a big floating log and headstand on it while the cameras clicked. At Rainbow Bridge he often climbed onto the top of the great stone arch, and sometimes slept there. In September 1939 he climbed to the top of Mexican Hat Rock, on a complicated pole and rope rigging that was cantilevered out beyond the brim of the 65-foot "inverted sombrero"—and persuaded Doris and a budding young archaeobotanist named Hugh Cutler to accompany him.

Sometimes Norm overstated things, like the height of the waves and the speed of the water. He did this to keep passengers and boatmen on edge about the next rapid, with exclamations like: "...Good God, that looks terrible! I don't know how we'll ever get through!," and then afterwards, "well, that one wasn't too bad this time—but the next one is *really* tough." Even his daughter Sandra at age six observed "My daddy zad-gerates." Norm just didn't worry about objectivity; he left that to the historians. He worked at keeping people interested and excited about their trip.

With his boatmen, he was direct and could be peremptory. As an expedition leader he sometimes annoyed his boatmen by barking orders, or scolding them in the presence of passengers, and it probably sounded even more imperious because of his precise and explosive manner of speaking. As Frank Wright described it, Norm "spoke and enunciated too perfectly. I think he may have had to overcome a speech defect." That was a pretty good guess: during Norm's childhood, roller skating while blowing a tin whistle, he had fallen and jammed the whistle down his throat, tearing his larynx, and after that had to form words strongly and carefully.

Norm's accomplishments were possible partly because he was in the right place at the right time, but also because of the way he was—his "nayt-chur," as his mother put it—and also the forces that influenced his childhood, adolescence, marriage, and family life. One of those was his pugnacious, flamboyant grandfather,

William Alexander Nevills, whom it's clear Norm had been told some interesting things about, but probably never met.

William Alexander Nevills was a Canadian farm boy who left home around 1860 to work on (but not "own") a Great Lakes steamer between Buffalo, New York and Chicago, Illinois. He married a neighbor girl, and had several children in addition to Norman's father, William Eugene ("Billy") Nevills. Around 1872 he sold his interest in the family farm and, leaving his wife and children in Canada, went to California, where by the mid-1890s he had become a gold mining magnate addressed, like many intimidating men of that era, as "Captain." At the pinnacle of his life Captain Nevills had taken some six million dollars worth of gold from the ground and owned several mines, two hotels, two vineyards, and parts of a stagecoach line and a railroad. Fifteen years later he died virtually penniless and was buried in an unmarked grave.

In 1889 Billy Nevills followed his father to the American West and began staking claims for him. In 1893 and 1894 he was superintendent of two mines near his father's workings, and he made a couple of attempts to obtain mines of his own on a "working partner" basis with other prospectors, but wasn't successful. By 1897 he and his father had a serious falling-out that resulted in Billy being written out of Captain Nevills' will, and it appears that the two had very little communication for the remaining years of the Captain's life.

From 1897 to 1902 Billy had a San Francisco address, and for a time he was a partner in a shipping company. In "about 1900" according to Norm, Billy went to "The Yukon to look into the big gold strike," which had begun three years before. By 1903 he had gravitated toward the Cherokee placer near Oroville, California and met Mary Davies, whose father, a miner, had emigrated from Wales.

Billy and Mary (who went by "Mae" until her grand-daughters changed it to "Moe"), were married in late 1903 or early 1904 when he was 38 and she was 28, but Billy immediately went prospecting again for about three years, and Norman wasn't born until April 1908, when Billy had settled down in Chico, California and was working as a machine hand. At the time of Norman's birth, his mother was seriously ill with peritonitis, and was being tended by a San Francisco doctor named Landon Ellis, who would later figure in the family's destiny. The pregnancy and birth were further complicated by the fact Mae was also having to care for one of her sisters who was terminally ill with tuberculosis.

Dr. Ellis urged Mae to give Norman away, but she refused, insisting that she was going to get well and live to raise her son. Two weeks after he was born, young Norman was sent to St. Helena in Napa County, with a nurse. Six weeks later they returned to the family apart-

ment in Chico, but Mae was still seriously ill and after a week she had to take Norman to her mother's home. Through all this Norman became undernourished and very small and thin. When Mae had regained enough strength in her mother's home, she took Norman to Oroville, where Billy had found another job. After six or eight months at Oroville the family returned to Chico for a while, then a few months later, in 1910, they went north to Edgewood, near the Oregon border, and soon after that to the mining town of Weed. Because of the deep rift between Billy and his father, it was not until after the captain died in San Francisco in 1912 that Billy, Mae and Norman moved down to Oakland, where Billy worked alternately as a promoter, carpenter and contractor.

In 1920 Doctor Ellis asked Billy to go to Goodridge, Utah (later renamed Mexican Hat) to help his brother A.C. Ellis Jr. hold the family's claim in the San Juan oil patch against claim-jumpers until the assessment work could be completed. He remained in Utah working for Ellis (who also used the sobriquet "Colonel" in front of his name) and then about 1927 split off from Colonel Ellis and began drilling his own wells. Occasionally he returned to Oakland to see his family, stopping en route to visit a friend named John Oliver, who had moved down from the settlement of Bluff to open a store near the oil camp.

In Oakland, Norman graduated from Claremont Grammar School in 1921 and University High School in 1925. That summer he and his mother went to Utah to visit Billy, and then returned to California where Norm took two semesters at College Of The Pacific in nearby Stockton, and the faculty noticed he was more interested in the dramatics courses than in geology.

Billy, who believed in the school of hard knocks, thought college a waste of time, and complained to his friend John Oliver that Mae was "making an educated fool" out of their son. Sitting in class wasn't Norm's thing either, and after the spring semester he was back around Chico briefly, and then back to Oakland where, in 1927 and 1928, he worked as a clerk, probably at the



Norman Nevills and his father, W.E. Nevills, at the Mexican Hat oil field, circa 1930.  
Photo courtesy of Special Collections Department, J. Willard Marriott Library, University of Utah.

Southern Pacific Company, a railway and shipping firm with a ticket office not far from the Nevills home, and a terminal at the Oakland pier. At about this time he informed his parents that he was going to work his way around the world on a freighter, but Billy, now working mostly alone, persuaded him to come to Utah first, make some money, "and then make the voyage first-class," and Norman and his mother joined Billy there late in 1928.

Billy's 1927 well had produced enough crude oil that he was able to build a topping plant and pull off kerosene and gasoline for sale to the few outsiders who happened through. By June 1929 he and Norman were making plans to build a diesel-powered generating plant and sell electricity to the drillers and settlers, but soon after that the well stopped pumping oil and

started producing brackish water—"went to water" in drillers' lingo. In the early 1930s Billy drilled three more wells, but they were puny producers.

With no reason to live at the oil camp, they moved to flatter ground a mile south where the road turns west toward the river bridge, and acquired a trading post where Mae dealt in Navajo rugs and jewelry, clothing, groceries, and gasoline—which, ironically, she had to buy from Conoco and have hauled in from the outside world. A few outsiders drove through, but most of her trade was with Navajos from the northern part of Monument Valley, many of whom affectionately called her *shi-ma* ("my mother"). Billy, with help from Norman and some Navajo stonemasons, began building the Nevills Mexican Hat Lodge just across the road. The lodge, judging from its guest register, was finished enough to begin receiving guests by mid-August 1933.

Norman Nevills's star began to rise in 1929 when a young General Electric engineer named Thorn Mayes, who was being transferred to California from Schenectady, New York, tried a shortcut and found himself in Mexican Hat and met Billy and Mae Nevills. In 1930 the Mayes's returned to Mexican Hat for an end-of-year vacation and met Norman himself. Thorn had become enthralled with nearby Monument Valley, and begun



progressively creating a map of the area by adding the names of the monuments and details such as elevations, roads, springs, trails, and Navajo hogans to a mosaic of Fairchild Aerial Surveys photos.

In June 1933 the Rainbow Bridge Monument Valley Expedition (RBMV) came into the area. The RBMV Expedition was an interagency sponsored survey put together and directed by Ansel F. Hall. The Monument Valley area had been proposed as a unit of the national park system and Hall, the Park Service Director for Education, foresaw the need for authentic research-based information on the topography, scenic features, geology, archeology, ethnology and plant and animal life, so that the merits and boundaries of the designation could be decided. Initially it looked as if the Expedition would headquarter at Mexican Hat, and an airstrip was graded there for them, but they eventually decided on Kayenta, Arizona, which had the advantages of a government hospital and the accommodations and Navajo connections of the legendary Indian Trader, John Wetherill. From Kayenta and several field camps the RBMV Expedition worked the area for six summers. Thorn Mayes was put in charge of the seventeen-man mapping team and he hired Norman as a member of that team.

Because the San Juan River was the most expedient way to traverse the rough terrain north and east of Navajo Mountain, the Survey had brought several small boats. These craft, known as Wilson Fold-Flat boats, were ten feet long and made mostly of plywood joined by canvas hinges. They were pointed at the bow and square at the transom, which could be removed, allowing the sides and bottom to fold into a flat, easily transportable package. The Wilson boats were used about a dozen times to travel reaches of river that connected the mouths of certain tributary canyons, the first being in August 1933 when John Wetherill led them on a 200 mile reconnaissance down the San Juan and Glen Canyon to Lees Ferry.

Just a month before that, Norm and three fellow RBMV Expedition workers had gone up to Monticello, Utah for a couple of days off. Norm, while looking for an acquaintance named Donald May, whose father then ran the county newspaper, *San Juan Record*, encountered Doris Drown, a very attractive 19 year old from Oregon, who happened to be there with her mother and her stepfather Charles Albert (“Bert”) Dingledine, traveling circulation boosters who had come to help the *San Juan Record* increase its readership. Donald and Doris, who were then dating, suggested they line up Donald’s sister and two other girls for Norm and his friends, and drive over to nearby Dove Creek, Colorado, for a Saturday night dance.

Norm had been smitten by the girl from Oregon and two weeks later he and two of the same boys made a second trip to Monticello, and with Doris again as

Donald’s date, and Norm and his fellow expedition workers fixed up with local girls, went to another dance, this one at the hamlet of Lockerby, Colorado. This time, Doris recalled, “...for some reason or other Norm and I weren’t interested in our dates—we were busy getting really acquainted.”

“The next time Norm came up,” she continued, “we went on a picnic up the mountain. It was quite cold. Norm threw one of his beautiful and highly prized Navajo blankets across my shoulders, saying ‘and now you’re my squaw’; I knew these words, lightly spoken, had much meaning.”

On, July 26<sup>TH</sup>, Norm brought his mother and introduced Doris to her. Then—perhaps sending Mae shopping—he took Doris to see a cliff dwelling west of town, and there he proposed marriage to her. She quickly accepted, but just as quickly told him she couldn’t marry him then, because she and her parents were leaving the very next morning for their new assignment in Nebraska.

While Doris was in Nebraska she and Norm corresponded and made wedding plans. By now Norm knew that his mother wasn’t especially interested in having him get married, so he and Doris figured out a “reverse elopement” involving Norm’s friend Hilda, who was the telephone operator at Bluff. One day in mid-October, Doris phoned Hilda to say that she was leaving for Green River, Utah and Norm should meet her there at the railroad station. Hilda then wrote a confidential message and had it carried down to Norm. On receiving it, he contrived a reason to drive up to Green River, where he and Doris were married by a Protestant minister on October 18, 1933. Before that day they had seen each other only four times, but they loved each other then, and for all of their sixteen years together, and neither of their lives would have been very full without the other. They were often described as kindred spirits.

Doris, the only child of Clarence Drown, a handyman who later became an engineer, and Edith Thompson, a stenographer, was born in Portland Oregon in March 1914, after her parents had been married for seven years. Clarence and Edith were divorced when Doris was three years old and for several years she was raised by her aunt and great aunt.

About 1920 Edith married Charles Albert “Bert” Dingledine, who then listed himself as “circulation manager” for the Pendleton, Oregon Tribune. This was—or led to—a profession as a circulation booster for ailing newspapers because a few years later Mr. Dingledine’s work was taking him on a chain of temporary jobs from town to town in Oregon, Washington and California, and Edith and Doris were traveling with him.

Doris’ diary and letters describe almost constant movement during her grade school and high school

years. By 1928, she and her mother and stepfather were in Spokane, where they stayed long enough for Doris to receive, on January 24, 1929, her 8<sup>TH</sup> grade diploma from Spokane Public Schools. Immediately after that the family drove to San Diego, where Mr. Dingledine had a six week job with the *San Diego Progress*. Doris loved San Diego, but by March 17 the family was on their way back north. Her stepfather's next job took them to the hamlet of North Powder in northeastern Oregon, where Doris entered high school and attended for a few weeks. In 1930 they were in Olympia, Washington and in 1932 in east central Oregon, where the job lasted long enough for Doris to graduate from Mount Vernon High School in the spring of 1933. Shortly after that Mr. Dingledine was hired to come to Southeastern Utah to help the *San Juan Record*.

A few weeks before the wedding, Norm had been given one of RBMV's boats that had been damaged in the August run down the San Juan. He fixed it up, and he and fellow RBMV mapper Bill Wood ran it four miles from Mexican Hat Rock, down though Gypsum Creek Rapid to the Goodridge bridge.

Newly married, Norm wanted to give his bride a honeymoon trip down the San Juan, but decided that before taking them into the canyon beyond the bridge landing he'd better try it himself. In November he guided John "Jack" Frost, head of the Farmington New Mexico office of the U.S. Geological Survey, overland to plug an abandoned oil well at the point where Slickhorn Gulch joins the San Juan River. It was probably then that Norm pitched the idea of Frost running the river with him.

"If it gets low enough to wade, I might go," Frost replied. About a month later it was, and they did.

By then they had decided to include Doris, and considering the ten-foot Fold-Flat a bit light and tippy and too small to carry three people plus gear for a trip of several days, Norm built a slightly longer boat resembling some that Billy Nevills could have seen on the Yukon River. Jack Frost described it as being made of scrap lumber, with a beam of about three feet at the chine and four feet at the gunwales, formed of inch-thick boards six or eight inches wide, nailed edge to edge over two by four ribs spaced eighteen inches apart. The cracks between the planks were caulked by pounding strips of worn out shirts and underwear into them.

Norm and Doris Nevills and Jack Frost shoved off from the beach near Mexican Hat Rock on a December day in 1933. They intended to go downstream seventy miles to Copper Canyon, where an old prospecting road, a relic of the 1892–1893 gold rush, was supposed to reach the river. The San Juan was running a bit less than 600 cubic feet per second (CFS) and Frosts "water shallow enough to wade" proved to be a bad idea: they frequently scraped over rocks, which raked out enough of the underwear caulking that the cracks

began leaking badly, putting the boat in danger of foundering. Twenty-one miles downstream, not far beyond the last of the San Juan's entrenched meanders known as the "Great Goosenecks," they dragged the boat onto the right bank, climbed up an old miner's route called the Honaker Trail, which was the only way out of the 1500-foot deep gorge for many miles either upstream or down, and walked overland back to Mexican Hat.

They were not discouraged though, and during the winter Nevills and Frost exchanged letters making plans for another run. This time both wives would go along. The plan was for them all to leave Mexican Hat in another boat, recover the December boat at Honaker Trail, and go on to Copper Canyon with both boats.

Norm was to build the other boat ahead of time but didn't quite get to it, so he and Jack Frost hurriedly built one from inch by twelve inch boards after the Frosts arrived. John Taylor, who ran the trading post at Oljeto, had a Ford Model T truck that had been equipped with one of the new Ruckstell axles and could be geared down for hills and sand pits; they figured he'd come down Copper Canyon to its mouth and get them.

On the afternoon of March 9<sup>TH</sup> Norm, Doris, Mae and Billy launched the new, hurriedly-built boat at the Mexican Hat bridge, and ran it to the Honaker Trail where they made camp with the Frosts, who had hiked down to meet them at that point. Retrieving the boat that had been left there four months earlier, they replaced the caulking and nailed strips of tin, cut from coffee cans, over the seams and then put it into the river to soak; to swell the planking. The next afternoon Billy and Mae hiked up the Honaker Trail and the other four set out downstream. As Frost (who eventually started running his own San Juan trips) told it later, both men had been handling the boats in the conventional way, pulling downstream, until he got turned backwards by one of the rapids and discovered that floating stern-first was better because he could see where he was going. Norm, he said, resisted the idea initially, but then began trying it.

Their second night's camp was at the mouth of Slickhorn Gulch. On the third day they came into the section called Paiute Farms, where the river widened and they had to push and drag the boats through shallow water the rest of the day and camp after dark in a rainstorm. The fourth day they again fought the braided shallows until late afternoon, arriving at the mouth of Copper Canyon to discover that, although the truck had gotten most of the way down the floor of Copper Canyon, it wasn't able to get to them: the old prospecting road, instead of coming to the mouth of the canyon, forked three miles from the river where one of its branches headed downstream to Zahn's old mining camp and the other upstream to Spencer's. To reach the truck they had to hike in darkness for two and a half hours, carrying everything they wanted to keep.

When the truck got them to Oljeto at one A.M. they were offered beds but they were so grimy and tired that they declined, and slept soundly on the trading post's cement floor.

By 1935 Norm was being moved inexorably toward his river man destiny. That year he ran a few trips on the San Juan near Mexican Hat and experimented with boat design. In June Emery Kolb, well-known for his film-making run through Grand Canyon in 1911 and another trip in 1923, came through Mexican Hat and stayed at the Nevills Lodge. Norm then had another boat of some kind, probably a close copy of the ones left at Copper Canyon the previous year. Kolb looked at it and said charitably that it was "of logical design."

About this time Norm received a letter from Ernest "Husky" Hunt, a teacher at Stanford University. The two had met while Hunt was doing summer archeological work with RBMV Expeditions. Having learned of Rainbow Natural Bridge, Hunt was interested in seeing and photographing it. Rainbow was fairly well known by then because John Wetherill had, for many years, been leading horseback groups to it from Kayenta, a grueling three or four day ride through the labyrinth of sandstone canyons that are the north shoulder of Navajo Mountain. Hunt wanted to get to the "stone rainbow" by hiking up to it from the river. His inquiry developed into a 1936 expedition down the San Juan and Colorado rivers to Lees Ferry for himself and two acquaintances, Charles Elkus of San Francisco, and J.C. Irwin from Stanford University. The agreement was that Norm would provide the guide service and the boat, and the passengers would supply the food and pay for a truck and driver to pick them all up 191 miles down river at Lees Ferry and return them to Mexican Hat.

They launched at Mexican Hat just after noon on March 24th on 2,000 cfs of water and had rain, snow and wind the first night and most of the next day, forcing Norm at one point to land because of blinding snow. One night ice froze the boat. Norm, in the hyperbole that's expected of river guides, said they didn't get sick because it was so cold all the germs had frozen.

The fourth day they made lunch at the mouth of Copper Canyon, the farthest Norm had been down the San Juan. Beyond there it was all new canyon for him, but his journal indicates that he knew where he was at all times, so it's likely that he had some notes from John Wetherill and was using the "Birdseye maps" which had been drawn from the 1921 survey done by the U.S. Geological Survey in cooperation with the Southern California Edison Company. These 21 x 27 inch sheets were especially useful because they showed, at a scale of one inch per mile, the course of the river, the mile-points, the locations (and names, if any) of the side canyons and the rapids—along with a profile of each rapid's head-to-foot steepness.

There were known to be three significant rapids between Copper Canyon and the San Juan's confluence with the Colorado: Paiute Rapid at Mile 21 (from the confluence); Syncline Rapid at Mile 15, and then, just above Mile 11, the one called Thirteen-and-a-Half-Foot Rapid for its steep drop from top to bottom.

Paiute Rapid was, except for times of extremely high water, split by an island formed by a mound of boulders, but at the flow level the Nevills group were experiencing, there was no right-hand channel; the "island" had become part of the right bank, and all the water ran down the left through 75 yards of boulder-studded shallows before narrowing into deeper water. In the time since they left Mexican Hat the flow had decreased to 1500 cfs and Norm had his passengers walk around Paiute rapid—to lighten the boat for maneuvering through the rocks and to lessen the damage if rocks were hit—and reboard the boat below the shallows.

Syncline, a narrow straight rapid squeezed between a rocky debris fan and the canyon wall, was fairly easy, but "Thirteen-Foot"—as boatmen later abbreviated it—was, at most levels of flow, another rock-studded rapid, wide at the top and shallow most of the way down and then funneling the whole river back to the lower right where the deeper water piled into a big chunk of sandstone imbedded in the right bank that threw it sharply left toward a clutch of mid-stream boulders. No matter where a boatman entered Thirteen-Foot at the top it would push him back to the hazardous bottleneck at the bottom. The miners and surveyors who had been down the river called Thirteen-Foot unrunable, but Norm studied it and worked out his moves and noted in his log that he ran it with one passenger, Charles Elkus, riding.

On the 30th, now having reached the Colorado they stopped at Aztec Creek and hiked the six miles up Forbidden and Bridge canyons to photograph Rainbow Bridge, then went back to the boat and continued down Glen Canyon. It was slow going because the Colorado was only flowing about 7500 cubic feet per second, and on top of that the spring winds came up (blowing upstream, as winds on the river invariably do), slowing them even more. On the 31st they bucked the wind for almost twelve hours with Norm, a chain-smoker who rolled his own cigarettes, noting that "all members of (the) party have run out of tobacco." When they reached Lees Ferry in midmorning of April 1, the truck and driver from Kayenta, who had been waiting for them for about twenty-four hours, drove them back to Mexican Hat, and on April 2 the three Californians stayed overnight at the Nevills Lodge.

The boat Norm used for that expedition appears to have been one he nicknamed "*Horse Trough*." Frank Dodge, who had been a boatman for several survey expeditions and was then doing odd jobs at Lees Ferry, reportedly looked at Norm's crude boat and later,



The Nevills 1936 boat, which Norm said he made with lumber from a Navajo horse-watering trough. The spare oar was a metal highway sign bolted to a wooden pump rod.  
 Photo courtesy of Special Collections Department, J. Willard Marriott Library, University of Utah.

out of Norm’s hearing, suggested that it wasn’t worth hauling home. But to Norm it was; the boat had gotten them down the river, and he had an inkling he might need to use it again. By the time his first daughter Joan was born six months later, he had designed a letterhead banner:

NEVILLS EXPEDITION  
 OCTOBER 1936  
 To Collect Scientific Data                      Colored Movies  
 DESCENDING THE  
 San Juan Canyon    Glen Canyon    Marble Canyon  
 Grand Canyon    Black Canyon  
 541 MILES BY BOAT  
 TO BOULDER DAM

It didn’t materialize that year, but it soon would, as serendipitous events continued steering Norm ever more toward his destiny. The March 1936 expedition had gotten him all the way down the San Juan and 68 miles of Glen Canyon to Lees Ferry. Husky Hunt’s colored motion pictures were being shown frequently, bringing in inquiries from prospective new passengers. In June Ed Holt, one of the members of Clyde Eddy’s 1927 “college boy/pet bear” expedition through Grand Canyon, stopped in Mexican Hat and registered at the Nevills Lodge. On the 6TH of September Norm launched a seven day trip from Mexican Hat to Lees Ferry for two couples from Iowa, undoubtedly using *Horse Trough*.

In August the following year Elzada Clover, a University of Michigan botanist, stayed at Nevills Lodge and talked with Norm about her interest in

canyon flora. On November 25 Haldane “Buzz” Holmstrom completed a successful solo trip that began on the upper Green and came down the Colorado through Grand Canyon. In late December of 1937 Ed Holt was back at the lodge and, hearing about Norm’s occasional San Juan trips, taunted him with “why don’t you run a real river sometime?”

“I’ll be running it next year,” Norm retorted.

Norm rounded up all the books, maps, journals, and living river runners he could find and gave himself a cram course on the boats and experiences of earlier expeditions and the places they’d had trouble. He melded all of this and the chance meeting of Elzada Clover into a 1938 botanical expedition with “University of Michigan” credentials and some financial support in the form of fares. That expedition launched at Green River City, Utah and ran almost 700 miles downstream. It, in turn, produced attendant publicity that launched Nevills Expeditions as an enterprise, and adventure river running as a thinkable vacation option.

The first Nevills cataract boats were built virtually on the eve of the 1938 trip. They didn’t resemble Yukon stampeder’s boats as much as they did a longer and wider version of the RBMV Expedition Fold Flats, merged with the concepts evolved between the 1890s and 1907 by the trapper Nathaniel Galloway and adopted by the Birdseye Survey and more recently Buzz Holmstrom. Nevills’ boats adopted the concepts of decking them over forward and aft of the oarsman’s cockpit, building in watertight compartments for flotation and storage, and adding splashboards to knock the waves away from the cockpit. Norm called his boats “cataract boats”; they were meant primarily to get down a rapids-filled river, and secondarily to carry passengers.

For hull material he turned to a new product called “Super-Harbord,” a laminated marine-grade plywood. It was normally produced in four-foot by eight-foot sheets but he persuaded the manufacturer to make him a few oversized sheets, each of them sixteen-feet long and five-feet wide. From three of these sheets—one for the bottom, another for the two sides, and a third for the bulkheads and decking—Norm could build a cataract boat. With money borrowed from Don Harris, the government river gauger at Mexican Hat, he ordered material for three boats.

The launch date was initially set for June 15—which proved to be a little too early to complete the boat building, but kept them from being in the middle of Cataract Canyon at a worse time than they were. With slightly more than a month to go, the Super-Harbord was finally shipped, and when the train arrived at Green River Utah, the nearest train stop, Norm was there to





Norman Nevills (left) and Don Harris building the first cataraft boats at Mexican Hat, Utah, June 1938. Photo courtesy of Special Collections Department, J. Willard Marriott Library, University of Utah.

unload it. Construction began on May 12<sup>TH</sup> with a day-by-day log of the progress kept. The work was done by Norman and Don Harris, helped initially by Philander Hatch and toward the end by Riddel Barton. To get better coverage, and probably to save precious time, the priming (raw linseed oil, applied hot) and inside painting of the sides and bottoms was done during the framing rather than after the boats were decked over and finished. In late May it was clear more time was needed, and the launch date was moved back five days.

By June 14, all three boats were nearly completed, with just a few already-cut parts such as hatch covers and splash boards yet to be finished and attached. The special ocean longboat oars arrived and were shortened for river use. Norm named the boats Wen for his father's initials, Botany as a nod to the theme of the expedition, and Mexican Hat for his tiny home town, and he painted them with colors Conoco had intended to be used on his mother's trading post.

The six weeks long 1938 expedition, although successful, was not smooth, mainly because the launch date was ill-timed and they were short on whitewater boating experience. Norm, with a few hundred hours on the San Juan and Glen Canyon, had the most depth and breadth, but none on a river of this volume and velocity. Nor had his second and third boatmen been chosen for their boating skills. Don Harris had helped build the boats between gauging chores, and could get vacation time with pay in June, just before a job transfer to Idaho. Wilbur "Bill" Gibson was a commercial artist - photographer from San Francisco who had stayed at the Nevills Lodge in June 1937; he was chosen because, in addition to running a boat, he was expected to help document and illustrate the adventure. Even if any of

the earlier river men who were still around in 1938 would have agreed to be his boatmen, Norm probably wouldn't have asked them. He wanted very much to put his own stamp on this adventure, from which he intended to build a career for himself.

They shoved off from Green River on June 20, expecting to land at Lees Ferry on the Fourth of July. The passengers were the University of Michigan's Elzada Clover, age 40, her teaching assistant Lois Jotter, age 25, and Eugene Atkinson, a zoology grad student, age 25. While planning for the trip Lois had personally

visited Colonel Birdseye at the Geological Survey in Washington D.C. and been able to obtain a copy of the 1923 Plan and Profile of Cataract Canyon, which was out of print and not generally available. It was to prove invaluable to Norm.

Despite the rushed beginning—Norm had no sunglasses and had to borrow his mother's, nor any boots for lining and portaging along shore and had to borrow a pair of Elzada's—once on the water, it went smoothly enough for a few days. Their first 120 miles were on placid reaches of the Green known as Labyrinth and Stillwater canyons. They took turns rowing, to augment the slow current. Norm sat on the decks and finished bolting down the hatch covers that had been pre-built at Mexican Hat and attaching lever-like ice box door latches to hold them closed. Gene Atkinson had brought both a shotgun and a revolver and the punctuation for the first few days other than mosquitoes and a rainstorm, consisted mostly of Gene and Bill shooting a goose, a duck, and a deer. When he woke up the third morning Norm noted that the overnight drop in the level of the Green was two and a half inches across a 250 foot wide section. This seemed like good news. Although it made for even slower going through the Stillwater section, it should mean lower water in Cataract Canyon.

In mid-afternoon of their fourth day, when they came to the point where the Colorado River joins the Green, they had no way of knowing that although the Green had peaked and was now subsiding, the Colorado had not. United States Geological Survey gauging records show that the peak runoff down the Colorado arrived at the confluence of the rivers at virtually the

same time the Nevills Expedition did. The combined flow of the rivers was about to send more than 61,000 cfs through Cataract Canyon, a stage of water that linked most of the rapids together into a chain of brawling whitewater more than thirty miles long.

Rapids are often located, discussed, and sometimes named by the mile point they are nearest. In Cataract Canyon those milepoints are counted by their distance upstream from a point near Lees Ferry, the last rapid in Cataract Canyon being at Mile 182.8 and the first being 34 miles farther upstream at 216.5. But some of Cataract's rapids are so close together (in some places several in the

same river mile)

that to cite them by mile point would be confusing and dangerous.

Therefore, boatmen try to designate the rapids by counting: Rapid #1; #2; #3. The count can change when a lower flow lets a long rapid reduce itself into several shorter ones—or even more dangerous, when high flow ties several short rapids together into a longer one.

From the confluence of the rivers the Nevills Expedition floated down four more miles on flat water. About five o'clock they landed at a curve on the right bank just above Rapid #1. Norm intended to proceed cautiously; he was determined, perhaps because of Ed Holt's taunting, to run more (line fewer) rapids than the Eddy expedition had. He planned to stay above the rapid overnight and run it the next morning, but he wanted to have the boatmen walk a half-mile down along shore for a first look before setting up camp.

At 5:30 P.M. they were standing at the foot of Rapid #1 when Bill Gibson looked upstream and exclaimed "My God, there's the *Mexican Hat*!" As they watched, the boat went by empty, riding twelve to fifteen-foot waves, and disappeared downstream. Apparently it had been carelessly tied—or maybe not tied at all in the rush for a first look—and the swelling river swinging against the outside of the curve where they had beached had simply lifted the *Mexican Hat* off the sand and

snatched it, instantly changing a cautious approach into a wild melee that split the party and the boats just at the end of the day and kept them scattered until the next morning.

When the *Mexican Hat* swept away unmanned, Norm sent Don sprinting back upstream to get the *Wen* so they could chase the runaway boat.

While Don was headed upstream, the others raced downstream over a half-mile of rocky shore to where they thought the *Mexican Hat* might have been swept into a large eddy and held. But it wasn't there. Norm then sent Gene and Bill running upstream, instructing

them to bring *Botany* down through Rapid #1, but to have Elzada walk down.

The next thing Norm saw was the *Wen* sailing by with Don straining at the oars below Rapid #1, but unable to pull the boat to shore and Lois was aboard. As they disappeared down river he ran upstream and, to his relief, found the *Botany* now tied in an eddy some distance below the foot of



Norm with his parents on the eve of the 1938 expedition.  
Photo courtesy of Special Collections Department,  
J. Willard Marriott Library, University of Utah.

Rapid #1, with Elzada, Gene and Bill waiting nearby.

Dusk was turning to darkness and there seem to be nothing more they could do until morning. They opened some cans of pork and beans, peas, and roast beef and were just starting to eat with sticks of wood since the utensils were in one of the runaway boats, when they heard a shout from the left bank of the river and realized it was Don. Loading Elzada, Gene and Bill onto the *Botany*, Norm rowed them across in near darkness. Now able to be heard above the roar of the river, Don told them he had finally landed on the left at the head of Rapid #7, and had made his way back up along the bank to this point. He ate some canned peaches and then he and Gene started working their way down the left shore, intending to get back to Lois.

It was a long restless night for all. Early the next morning Norm took the *Botany* and started downstream with Elzada and Bill aboard. Ten minutes later he came upon the others at the head of Rapid #8—Don

and Gene only recently having reached there because darkness had forced them to sleep in the rocks until daylight, some distance short of where Don had left Lois the previous evening.

No one had been injured and none of the cataract boats had been lost and the only damage was a broken oar. It took until almost noon to dry everything and reorganize logistically and emotionally. Then they floated two and a half miles and camped at the head of Mile Long Rapid, about a quarter of the way through Cataract. Then next day, Mile Rapid (now called Mile Long)—so lengthy and canyon-locked that it couldn't be inspected from shore—gave them a big exciting ride. Norm was elated: "No portages and we're two rapids ahead of Eddy," he wrote.

The elation was short-lived. They ended that day just above the steepest section of Cataract where, in one mile, the river drops 35 feet through four big rapids. (In later years, this piece of Cataract became known as "Big Drops" and its most formidable part as "Satan's Gut"). The next two days were spent lining and portaging most of this four-part show-stopper, the time being taken mostly by a grueling portage of boats and cargo up, across, and back down a talus slope to avoid the unrunable pileup of waves and holes that at this stage of water Norm numbered "#24." The two days frazzled them. In his June 26<sup>TH</sup> entry he wrote, "We haven't enough manpower for this trip and I know Don and Bill would like to quit at Lees Ferry. I would too, as we haven't enough personnel for hard portages. Maybe we'll feel better at Lees Ferry."

By the end of their seventh day in Cataract they had made twenty of its 34 miles. Having gotten most of the way through the steep rapid-fire section they had relaxed a little. Norm, in the lead, was planning to camp at the mouth of Gypsum Creek but as he neared it he decided to go on to Clearwater Canyon. Then at the mouth of Gypsum the river ahead of him simply dropped out of sight. He tried to land, but the current was too swift and he only had time to shout "this is the biggest drop of the trip" a warning that only Elzada heard, as the other boats were some distance back. Caught by the current, he dodged a dangerous mushroom wave and found a course along the left wall for a hundred yards and then looked back just in time to see *Botany* shoot up on the mushroom and capsize end-over-end, spilling Bill and Gene into the river.

Gene in his life jacket washed on through the rapid and down to the *Wen*, climbing aboard with Norm and Elzada. As the *Botany* floated down beside them Elzada grabbed its bow line; Norm then tried to use the *Wen* to tow the *Botany* to shore but with an extra passenger and the capsized boat pulling at the end of Elzada's tether like a two ton kite it was too much. Linked together, the boats washed through the next rapid and came out of it five or six feet from shore. Norm grabbed the *Wen*'s

bowline and jumped for it, but the beach had an steep dropoff and he went over his head and as he scrambled for shallow water the rope slipped out of his hands and both boats swept away, leaving him stranded there.

Luckily, the *Mexican Hat* was still behind the other boats. Don dropped over the brink, saw the mushroom wave and missed it, ran the rapid, caught up with Bill who was trying to swim to shore, and took him aboard. They then saw Norm, stranded on shore and waving for a ride. Don picked him up at the foot of the next rapid.

Norm was shaken by the episode, and having two boats washed down the river with two people aboard who couldn't handle them. Faced with the possibility that he might have to get four people on through Cataract in just the *Mexican Hat*, he insisted on lining it through Clearwater Rapid. Then, when he found the others and the *Wen* and the *Botany* beached a half mile below Clearwater, he was chagrined that he had lost his composure and lined a little five foot drop.

Elzada and Gene had gotten somewhat bunged up salvaging the *Botany*. Bill had been pulled out of the river too tired to have saved himself, and Norm was emotionally drained. They camped below Clearwater and planned to go on at noon the next day, but later decided to spend the rest of the day and night—their eighth—at the Clearwater camp, too. They finished drying their clothing, overhauled Bill's motion picture camera, which had ridden several miles in the capsized *Botany*, napped, and played a few hands of Hearts. Norm, sure he was going to lose Don and Bill at Lees Ferry, pondered where to find replacement boatmen for the Grand Canyon leg of the expedition.

The night of July 1 they camped at the head of Dark Canyon Rapid, having taken thirteen days to make just over a 150 miles. They lined the rapid the next morning and were on quiet water at the head of Glen Canyon. But even though Glen, like Labyrinth and Stillwater, ran slow and had no significant rapids, they were still more than a 180 miles from Lees Ferry, and wouldn't make it by the Fourth of July. On July 2<sup>ND</sup> they camped fourteen miles below Dark Canyon at the mouth of the "Dirty Devil" (Fremont River). The next day they stopped at Hite to ask which side canyons had drinkable water—and to wrangle a dinner invitation at Arth Chafin's ranch—and then spent the ensuing week floating down Glen Canyon, looking for "Indian ruins" and taking time to visit Rainbow Bridge.

Down through Glen Canyon, without danger to bind them together, all the resentments of ten tough days in Cataract began festering. The group split unofficially, with the *Botany* and *Mexican Hat* sometimes drifting ahead, sometimes falling behind. On the *Wen*, Norm and Elzada, the members with career motives, continued their ongoing conversation about ideas for the books and lectures the expedition could yield. The others, whose reasons for participating were various and

less substantive, traveled together and talked about how they had gotten cold, tired, and scared. They were sick from drinking river water. They discussed that one or two of them could have drowned; that the linings and portages were grueling and exhausting; that Norm was too cautious; that Norm wasn't cautious enough; that he didn't seem to care about anything but expedition publicity.

The second and third boats in effect became the *Botany-Mexican Hat* and it sometimes passed, sometimes lagged behind the *Wen*. This annoyed Norm, who believed the leader's boat was to go first and the others were to maintain interval and position behind it, and he finally pressed his point by letting them miss the Rainbow Bridge landing at Forbidden Canyon so that they both floated on through the little rapid at its mouth and had to carry their gear back upstream through the bushes and boulders to the place he had pulled in for that night's camp.

They landed at Lees Ferry on July 8<sup>TH</sup> and that night Norm, accompanied by Don, Gene and Elzada, caught a series of truck and car rides home to see his family, and to find boatmen for the next leg of the expedition.

It was 4:30 A.M. when they reached Mexican Hat but earlier—about midnight—at Tuba City Norm unexpectedly met Lorin Bell, age 24, who was related to the trading post family, the Kerleys, and he recruited Lorin as a boatman. Then the next day at Mexican Hat he encountered Del Reed, age 44, a prospector the Nevills knew, and he talked Del into filling the other boatman slot.

Two days later Norm and Elzada drove to Grand Canyon to get Emery Kolb's advice about some of the rapids and drinking water sources, to see if he could borrow a short-wave radio from Emery, and to make arrangements for getting resupplied by pack mule at Bright Angel beach. They ended up staying at the south rim overnight and most of the next day, and then drove to Lees Ferry.

On the 13<sup>TH</sup>, with Lorin and Del replacing Don and Gene, the expedition shoved off from Lees Ferry, expecting easier going because in Grand Canyon the river drops an average of seven and a half feet per mile, compared with Cataract's drop of 35 feet per mile. They were also relieved that the flow had now subsided to 25,000 cfs. This being "Mile 0," the point from which river miles were measured both upstream and down, the mile numbers would be increasing as they went.

Bill Gibson had decided to continue with the expedition, and a Pathe News cameraman who had laid over from the July 8<sup>TH</sup> arrival was going to ride the first eight miles, photograph the boats in Badger Creek Rapid, and then climb out of the canyon. So was Ed Kerley from Tuba City.

With Don having left, Bill was now the next-most experienced. Norm gave Bill the *Botany* and assigned

Del to break in by riding as Bill's passenger. Lorin was assigned to the bow seat of *Wen* where he could look over Norm's shoulder and get acquainted with the stern-first rowing technique.

When they reached Badger Creek, Norm, probably still taking the measure of his new boatmen, found the rapid too formidable, with "a tongue that washes out before it gets started, making it most doubtful of avoiding one or the other of the holes at the head." He had the boats lined down to a pool past the head of the rapid, then he himself rowed each of them from there down to the beach, providing the cameraman an opportunity to film him giving rides in turn to Ed Kerley, and Lorin. On the last run he took the cameraman as passenger for some on-river footage and got knocked off his seat into the cameraman's lap, but in his journal he converted the untoward moment into an achievement, describing it as "a perfect back-flip" and noting "this type of rapid water is more the type I like" .

Soap Creek Rapid at Mile 12 had traditionally been lined. Norm found it to be "wild looking," but had Lorin run it in the *Mexican Hat*. Del was not given a chance at the oars until Houserock Rapid at Mile 17 and as the expedition continued Norm began hoping that Ed Kerley would hike back in at Bright Angel to run a boat.

Except for Badger they didn't line any rapids above Bright Angel, although at several of them Norm ran all of the boats through. At Bright Angel beach he encountered a man from the "forest service" (probably the National Park Service) who was willing to pay for the privilege of going along to help with the portages.

On July 19<sup>TH</sup> just after daylight they (except for Del, who stayed with the boats) hiked up the Bright Angel Trail to the south rim. When they presented themselves at the Kolb Studio, which was perched on the canyon's rim at the head of the trail, Emery invited them to stay for lunch, and to attend the next showing of his river movie and address his audience. That evening Norm had dinner with the Kolbs and invited Emery to be his guest on the remaining leg of the expedition.

During the three days they laid over, park visitors talked about them and pointed them out to each other, the Associated Press issued daily dispatches, and they were asked to participate with park superintendent Tillotson in a fifteen minute nationwide radio spot by the National Broadcasting Company. Norm was very pleased by all this.

Late in the afternoon of July 22 they hiked back down to the river, Emery Kolb with them, and cooked dinner at the river gauger's cabin.

Ed Kerley didn't rejoin the expedition as Norm had hoped he would, and the "man from the Forest Service" either could not be found, or was not re-invited. When they left Bright Angel on the morning of July 22<sup>ND</sup>, Norm had Lorin run the *Mexican Hat* and Del run



*Botany*. Bill, in effect reassigned to photography, rode in Del's boat. The river was down to 17,500 CFS.

They had wild runs through Horn Creek at Mile 90.4, where Loren broke an oarlock, and Granite Falls, Mile 93.5, where Norm slipped off to the right and got turned end-for-end between the wave train and the cliff before being flushed out the bottom on the wrong side of the river. Hermit Falls, Mile 94.9, had an explosion wave near the bottom that Norm thought would flip one or more of the boats, so he had the boatmen line it. At the bottom of the linedown he sent the other boats off first so that Emery, riding in the *Wen*, could photograph them with Hermit's explosion wave in the background.

At Serpentine, a sharp "c" shaped rapid at Mile 106, Norm and Del pulled in at the top to look it over, but Lorin missed the landing and dropped into a huge hole and tailwaves Norm described as, "the biggest we've seen since the big ones in Cataract." Seeing Lorin in trouble he pulled back out into the current and ran it, with Del following. At the bottom they discovered Lorin had torn an abdominal muscle in trying to pull away from the hole, and was in great pain and unable to row enough to maneuver. Norm gave the *Botany* back to Bill and had Lorin ride as passenger. He gave Lorin a jigger of whiskey to ease the pain and they ran another two miles and quit for the day at Bass Camp.

On the 24<sup>TH</sup> they stopped at Elves' Chasm, a concealed grotto thirty yards off the river where a little spring-fed stream splashed down into a pool through a cluster of large boulders. In a dry alcove above the grotto they found names and early 1900s dates that had been written on the wall with charred firewood: N. Galloway '97; Frank Dodge '23; Clyde Eddy '27. To those Norm added Nevills Expedition '38. They were now only fifteen miles from Dubendorff Rapid and seeing Eddy's name at Elves' only reminded Norm of his self-imposed contest to line fewer rapids than Eddy had.

The Dubendorff of his mind's eye was a bugaboo. Eddy had lined it, but during the lining one of his boats had gotten loose, washed downstream, and lodged in the rocks of the "s" shaped rapid. Held by the current and filled by the river it became immovable and after three days of trying to recover it Eddy gave up and abandoned it. Norm—with Loren still "knocked out" as he put it—didn't want to risk running Dubendorff and capsizing a boat, but he was also still trying to do fewer linings than Eddy: "we've already run three rapids in the canyon from Lees Ferry that Eddy lined," he wrote in his journal.

Emery had rigged ropes to snub his tripod to the *Wen* so that in calmer water he could attach his motion picture camera and stand on the stern deck taking pictures. Down through the mild rapids of Stephen's Aisle Emery took pictures and as time went on he occasionally skipped the picture-taking and used the ropes

to ride the rapids standing up. Norm, recognizing a good stunt, tried it too, and called it "great sport."

When Norm stood at the head of the real Dubendorff the next afternoon, it was less a dilemma than he had been imagining. The only danger he saw was one hole on the right, partway down. "One look decided me to run it," he wrote in his journal. With Emery as passenger he backed down to the hole, skirted it, then when clear, invoked Emery's stunt, jumping out on the stern deck and riding the curved tail of the rapid standing up. Lorin was back at the oars by now and the other two boats ran Dubendorff, adopting the route, but not the stunt. Their passengers walked along shore and reboarded below.

Emery's personal rapid was the one at Mile 150. It was named "Upset Rapid" because he, head boatman for the Birdseye Survey, had upset there in 1923. Wide at the top, Upset narrowed quickly and at this stage fed most of the river back into a sharp rocky hole across most of the rapid near the bottom. Emery, after riding through with Norm advised Norm to run the other boats and Norm headed back upstream intending to do that, but before he could get there Del, and then Lorin, came through. "Both boys fumbled their course but made it thru," he noted, but because Emery had wanted him to run all boats (probably for pictures) he chewed Del and Lorin out for not waiting for orders. He clearly admired Emery. "Emery is so like dad," he noted after Upset, "afraid of nothing."

On the 27<sup>TH</sup> they reached Lava Falls. The others wanted to run it, and Norm did too, but felt the chances of capsizing were too strong. On another trip—he promised his journal—he would run every rapid on the river. They lined along the left side of Lava Falls and camped just below it on the rocky bench where travertine-flavored water nourishes a patch of cat tails and joint grass—the place Kolb had camped in 1923.

The next day Norm had Del drop back to third position and brought Lorin up to run in second position—not a promotion, but a way of bracketing him so he'd stay in sight. He had lagged far behind the previous day and then, catching up, had almost passed the others, who were out of sight in a cove at the head of the rapid. Had he not seen them just in time he would have gone into Lava Falls without knowing it. During the day below Lava the talk again turned to an expedition that would start in June 1939 from Green River Wyoming. Most everyone said they'd like to go.

In camp at Mile 205 Elzada worked back and forth between her plant presses and hot towels for Norm's "trick knee" which he'd disjointed while lining Lava. They again discussed their book.

On the morning of the 29<sup>TH</sup>, while they were still at the 205 camp, a small plane appeared overhead, circled them several times, and then flew off to the southwest. Norm had set an August 1<sup>ST</sup> date for arrival at Boulder

Beach and the press and the politicians at that end were checking to see if he was getting close.

Before they left camp Emery taught them an initiation ceremony that made them all “river rats.” Then they ran eighteen miles, taking a long lunch with a three hour nap, and camped just above the mouth of Diamond Creek. Norm was now estimating they might reach Boulder beach, near the dam, on the 31ST, which would be too early for the ceremonies.

On the 30TH, after running Diamond Creek Rapid’s half-mile of fast water and a dozen more miles punctuated by “some wicked twisting drops” they passed Separation Canyon, which would become the nominal head of Lake Mead. The lake was then in its final stage of filling behind the new Hoover Dam and had not quite covered the infamous Separation Rapid. They ran the mild remnant of the rapid, and a fraction of a mile beyond that noted that the river slowed noticeably from what they had become so accustomed to. They slowly gained three more miles and camped that night on reddish-brown water that was moving less than one mile per hour.

A hundred miles of Lake Mead now lay between them and Boulder beach. Somewhere along the way a motor boat was supposed to meet them and take the cataract boats in tow, but the meeting point was uncertain. On July 31ST they rowed down lake all day. Norm was a bit out of sorts; his knee still hurt, he hated the dead water, and the air temperature went above 130 degrees. Resting often because of the heat, they made seventeen miles and stopped at a canyon they later figured out was the one called Quartermaster. Six miles above Quartermaster the water turned lake-blue, having finally lost its ability to carry silt.

Starting to explore, Norm nearly stepped on a rattlesnake, one of the few things he feared. Lorin then caught and consigned it to an empty bacon can with a perforated lid, but the exploratory trip up the brushy canyon was then called off and they slept fitfully that night worrying that the snake might escape, and that the brushy landing might be concealing others.

In the morning, just as they were leaving Quartermaster Canyon, another plane flew over them and then away. They pushed off, rowed five miles in four hours—stopping once to release and photograph the captured rattlesnake—and pulled the boats into a cove for shade and an early lunch.

They were beginning to make sandwiches when they heard an engine out on the lake and they ran out along shore to make sure they would be seen. The sound was that of a small motorboat, with Buzz Holmstrom at the wheel. With him were the superintendent of Lake Mead National Recreation Area, and Emery Kolb’s son in law, who was Chief Ranger at Grand Canyon. Holmstrom, by then working for the tour company on Lake Mead, had been waiting down lake. When the plane reported

that the expedition had reached clear water, Buzz motored up to meet them. The sighting of the boats from this plane had also triggered newspaper headlines that would be in print by the time the expedition reached Boulder.

With the three cataract boats tied one behind the other by their long bow lines, Buzz Holmstrom began towing them. Nine miles farther on they stopped at Emery Falls, and hiked to explore some sloth caves. Just as they returned, a larger boat arrived, carrying a Nevada congressman, the owner of the tour company, newspaper reporters, cameramen, and Bill Gibson’s wife and parents. The big boat, with expedition members and the reception committee aboard, took over the three-boat tow. As they broke out of Grand Wash Cliffs into Pearce Ferry Basin an amphibious plane also owned by the tour company intercepted them and Bill Belknap, a young photographer destined to become a noted river runner and historian, took photos of them and then flew off. Next, an hour or so from Boulder beach they were met by another motorboat with Doris Nevills aboard. She brought news of a telegram from Harbor Plywood Corporation offering to buy all three of the news-making boats. Harbor would use the boats for publicity about their “Super-Harbord’s” indestructibility.

Doris had arrived suffering with a painful finger infection called a “felon,” and on reaching the landing Norm, without stopping to harvest any more publicity, immediately drove her to a Boulder City doctor, who sent them to Las Vegas that night for surgery. Doris was confined to a Las Vegas hospital for several days; Norm shuttled back and forth between his wife and various ceremonies and events, and more “book talk,” then on August 7TH they started back to Mexican Hat. Norm invited Elzada to join a San Juan trip he would be leading in about three weeks and Lorin invited her to stay at the Kerley Trading Post in Tuba City until that time, so she rode partway back with them. En route they stopped at the south rim, and stayed for Emery Kolb’s next day movies and the opportunity to again address his audiences.

The Harbor Plywood offer was tempting—both the money for the boats and the publicity Harbor would generate for Nevills Expeditions. But the *Mexican Hat* had already been promised to Don Harris in return for buying some of the lumber and helping build the boats. And Norm undoubtedly wanted to keep one of the boats, maybe for sentimental reasons, but probably now as a pattern for the next ones. In the end he answered all three callings: he left the *Botany* and *Mexican Hat* at the beach for their new owners and he and Doris trailed the *Wen* back to Mexican Hat.

In late August, using the *Wen* and three borrowed foldboats, Norm, Lorin and Jack Frost took Jack’s son, Kent Frost from Monticello, Elzada, Lorin, and four

paying passengers on a seven day trip down the San Juan and Colorado to Lees Ferry.

A few weeks later he could not resist driving to Green River Utah to meet a party of three French kayakers—one a woman—who had started 500 miles farther upstream, at Green River Wyoming, and were making their way down the river. Norm, then planning to run “the whole river” took them to dinner at the Midland Hotel and picked their brains about the rapids of the upper Green.

Although Norm and Elzada did stay in touch after that (as late as 1944 she was sending Norm copies of her published botanical papers) the book didn’t materialize—Norm and Elzada were too far apart on the theme and focus of it. The “next year” expedition didn’t materialize either—probably for lack of boats and lack of money to build them.

His 1938 expedition brought him a flurry of publicity and enough inquiries that in 1939 he was able to run several San Juan trips. One of his 1939 passengers was Ernie Pyle, a newspaper reporter who later became a well-known war correspondent. Pyle, who was working for the Albuquerque Tribune on a series of columns about people and places in the Four Corners, came to Mexican Hat to meet and inter-

view Norm. It was July and the river was low, so Norm took Pyle and his editor, E.H. Schaeffer, on a twenty mile trip down to Mexican Hat, starting from the mouth of Comb Wash, in what Pyle described as a fifteen foot plywood fold-boat that Norm quipped “can’t leak, but sure is doing a good job of going through the motions, isn’t it.” He captured the writer’s fancy and after the trip, Pyle wrote a lively article that was widely printed in syndicated newspapers.

With 1939’s proceeds and a winter mortgage on the *Wen* from his bank in Moab, Norm built two new cataract boats, one a replacement named *Mexican Hat II*, and the other *Joan*, named for his three-year old daughter. He used them and his flagship *Wen* in 1940, for a 1,100 mile expedition beginning at Green River Wyoming and ending at Lake Mead.



Norm’s “San Juan” (above) and its sister ship “Rainbow Trail,” both built in the spring of 1941, bore a distinct resemblance to his “Horse Trough.”  
Photo courtesy of Special Collections Department,  
J. Willard Marriott Library, University of Utah.

That enabled him to build, for 1941, two new boats for bread-and-butter trips to Rainbow Bridge. These first “semi-cataract boats,” *San Juan* and *Rainbow Trail*, more resembled *Horse Trough* than they did the cataract boats he had built three years earlier. In 1941 he made his eighth through fifteenth visits to Rainbow Bridge, keeping count in the guest register, and was accepted for membership in the New York City-based Explorer’s Club, an exclusive organization of adventurous achievers for which nomination by existing members was a prerequisite. Herbert Gregory, the noted canyon country geologist, and Ansel Hall, the general director of the Rainbow Bridge Monument Valley Survey, endorsed his nomination.

When World War II began, Norm was making a little extra money as hydrogeologic field assistant for the u.s. Geological Survey at Mexican Hat. He expected to be drafted into the army and had several tentative induction dates, but each got changed through the shifting criteria of the Selective Service System and his double immunity of being a river gauger and also still drilling for oil—a precious wartime commodity. In 1942 he was able to run an already-planned expedition through Grand Canyon, as well as some San Juan trips.

In 1943 the Survey advanced him to Engineering Aid at a salary of \$1800 per year. He had no known 1943 expeditions but at least three San Juan trips in 1944, and in July 1945, with Otis Marston as a boatman, he conducted an eighteen day expedition for Marston’s family from Moab, Utah, down through Cataract and Glen canyons

to Lees Ferry.

In 1946 he ran Salmon and Snake River (Idaho) expeditions; in 1947 another Green River Wyoming to Lake Mead expedition; in 1948 he led his traditional San Juan and Grand Canyon expeditions, and in 1949 the upper Green from Green River to Jensen in June–July, followed by his Grand Canyon expedition.

He might have gone on to try the Brahmaputra or Indus or one of the other unrunable rivers of the world that he liked to mention, and he might have survived them or not. He might have fought the damming of

the San Juan and Glen Canyon and he might have succeeded where others failed. Or, he might have been in the vanguard of the post-expedition/post-dam phase of river running, for which he was unknowingly positioned. In late 1948 one of that summer's San Juan passengers, a Sierra Club member, proposed organizing such a trip for 75 of its members. The project would undoubtedly have materialized, as Norm's erstwhile passenger-boatman Francis Farquhar had just been elected president of the club. Norm planned to run that trip in June 1950, using outboard motors and a fleet of sixteen inflatable boats that he had ordered in the summer of 1949.

The story ended otherwise because Norm fell in love with flying. For years—maybe from the summer of 1933 when RBMV Expeditions' hired biplane was flitting around getting Thorn Mayes's aerial photos—Norm had wanted an airplane. It would be a quicker way to get his mail from the Bluff post office, 22 bone-rattling miles away, and he could think of many other advantages. As early as August 1944 he began taking flight instruction on his supply trips to Grand Junction and in 1946 he ordered a plane. On November 27, he hitch-hiked to Grand Junction and flew home NC48871, a Piper J3 "Cub" that he named *Cherry*, (which was his pet name for Doris). Like all Cubs it was yellow, with two "bucket seats," one behind the other. The 65 horsepower engine had no starter; it had to be "propped" by hand. The fuel tanks were in the wing roots above the pilot's shoulders. The fuel level was indicated by small glass "sight tubes" mounted on the bottom of each tank and sticking down outside the pilots' side windows—if there was gas in the tubes, there was gas in the tanks. Thorn Mayes once noticed that when Norm banked the plane sharply, the tube on the higher wing didn't stay full. "That's okay," said Norm "she flies a long time after she's empty."

Before buying the Cub he had already smoothed the old RBMV expeditions landing strip at Mexican Hat and talked the operator of a county road grader into blading the strip at the west edge of Bluff. The day he brought the plane home, the two and a half hour flight from Grand Junction took nearly half as long as the 240 mile drive, but flying over "his" country thrilled him immensely. That afternoon, after hurriedly doing his river gauging chores, he took Doris for a short local ride, then loaded "Soldier and HeeHee" (Joan and Sandra) into the back seat and flew to Bluff. Up there he gave a quick plane ride or two to interested locals, got the mail and a few loaves of bread, and flew back to The Hat.



*By the mid-1940s, the Nevills San Juan boats had abandoned the horse trough design and were following the lines of the cataract boats—five feet wide at the gunwales with about ten inches of rake at bow and stern. These refinements allowed the boats to carry more passengers and made them much more maneuverable.*

*Photo courtesy of Special Collections Department, J. Willard Marriott Library, University of Utah.*

That evening he wrote his mother, who was wintering in California, telling her about the day, and urging that when she returned to Utah she take the train as far as Green River and let him fly her the rest of the way to Mexican Hat. "We can make it in an hour and forty-five minutes"...(instead of) "six hours by car," he coaxed. He knew Mae didn't like airliners and he assured her that "this Cub isn't like those big transports." A month later he wrote her a "Happy New Year" letter to thank her for Christmas gifts and say that he and Doris had taken in \$15,630 that year, counting his USGS pay, and expected to make \$27,000 in 1947. "In another few years," he said, "I will quit the river and relax in an airplane."

Going to Bluff for the mail gave him a reason to fly several days a week. His friend Hilda Oliver had married and was living at the west edge of Bluff near the airstrip; he'd either buzz her house and she'd pick him up and drive him to the post office, or sometimes he'd walk in and she'd always know when he was coming, because he'd be whistling cheerfully as he came up the lane.



By the first week of January 1947 he had already logged a hundred hours of flying time. The airplane, like the cataract boat, had become an extension of Norm. He loved what a plane could do, where it could put him. “Norm flew me from Bluff to Mexican Hat one time” remembered Frank Wright’s brother Earl, “and we was never more than twenty feet above the ground except when he crossed over a canyon.”

By March he wanted a more powerful plane and, after the river season was under way, he traded the Cub toward a Piper Super Cruiser to be delivered in late summer. The Super Cruiser had almost twice the horsepower of the Cub, a controllable-pitch propeller, two-way radio, and a two-passenger back seat. He named it *Cherry II*. At Doris’s insistence they had aviation coverage added to their life insurance policies.

By then the uranium boom was in its fledgling stage. There were many exposures of potentially uranium-bearing strata not far from Mexican Hat, and Norm, who had become famous but never made any real money, thought maybe uranium could be his bonanza.

He teamed up with Jim Rigg, owner of Pioneer Aviation, Don Wegner and Sid McCullough (also aviation people), and a Mormon prospector named Shumway who had a geiger counter. The others provided some gasoline money and periodic maintenance on the Super Cruiser. Norm would fly Shumway to a likely exposure, make a short-field landing wherever he could; and the two would check the area. If the instrument detected radioactivity they’d stake a claim around the hot spot. When they were finished they’d move enough rocks and shrubs to make a “strip” the Super Cruiser could take off from.

In July 1948 it was arranged that Jim Rigg’s shop would do some periodic maintenance on *Cherry II* while Norm was on the Grand Canyon expedition. Jim hitched a ride to Mexican Hat in a customer’s five-place Stinson to pick up Norm’s Super Cruiser and Norm

instantly decided that they should fly both planes to Lees Ferry; there Norm would join his river passengers, and from there Jim would take *Cherry II* back to Grand Junction. The Stinson beat *Cherry II* to Lees Ferry by quite a margin. Norm saw immediately that he wanted a Stinson: “Lord! Salt Lake in under two hours, bring back 1,000 pounds,” he wrote his mother.

By now he was moving toward a new venture—Nevills Aviation. For ten years he and Nevills Expeditions

had been the centerpiece of several films and scores of newspaper and magazine stories that he and his wife and his mother had proudly collected and arranged in a thick deck of scrapbooks and albums. He had been accepted into the New York Explorers’ Club, photographed for the Library of Congress, and was featured in Fox Movietone’s film, *Danger River*, which was



Norm and Doris in 1948 with their Piper PA-22, “Cherry II”  
Photo courtesy of Special Collections Department,  
J. Willard Marriott Library, University of Utah.

named Best Documentary of The Year in 1947. He was, in fact, the world’s foremost whitewater boatman. But, as he told family friend Frank Masland after the 1948 Grand Canyon expedition, “This whitewater boating is a young man’s game.”

His boats were aging, too. The *Wen* was twelve inclusive years old and the *Joan* eleven, very respectable ages for wooden boats whose lives consisted of rotation between running rapids-filled rivers and lying on sawhorses in waves of desert heat and desert cold. He was thinking he might build one more fleet of boats, use them four more years, and retire in 1951.

He and Doris applied for a loan, probably to build the nicer house she had long wanted. A few years earlier they had pursued the romantic notion of obtaining a homesite from the Navajos on Monument Pass, with a view of the much-photographed Monument Valley. When that was unsuccessful they had decided to settle for building at Mexican Hat, on the ridge above the river and the boat beach, where they could at least see some of the surrounding country and the landmark called Alhambra off to the southwest.

By the time the 1949 expedition was set, Norm had decided to use the boats one more time. Then, returning from that expedition, he left the *Wen* at Grand Canyon (donated to the National Park Service) and a few weeks later wrote to Governor J. Bracken Lee offering the *Joan* to the State of Utah for exhibit in the Capitol rotunda “like Campbell’s racer”—the car that had set a land speed record on the Bonneville salt flats. He had, in a way, “burned his boats,” as deliberately as Odysseus did after the Trojan War.

In September 1948, having home-schooled Joan until then, Norm and Doris had enrolled her in Wasatch Academy. Wasatch was a six-year boarding school at Mount Pleasant Utah that was attended mostly by children of ranchers, National Park Service employees, and others who lived in places too sparsely settled to have schools. Periodically the rest of the family would fly to Mount Pleasant to visit her on weekends or their way to Salt Lake on business.

On Sunday September 18, 1949. Norm, Doris and eight-year old Sandra left Mt. Pleasant airport in late afternoon to fly back to Mexican Hat. Sandra remembers that on the return flight the plane’s engine was running a bit roughly. When they landed at Mexican Hat they found that an ore truck driver returning to Monument Valley for another load had left a message that Doris’s uncle had died in California the previous day. Doris wanted to attend the services and the only way she could be there on time was for Norm to fly her to Grand Junction, put her on a commercial airliner, and send a telegram informing the relatives she was on her way. Norm was comfortable with night flying and wanted to go yet that night but Doris, concerned about the roughness in the engine, insisted on waiting until daylight.

The next morning they were up and out early. A little after 7:00 A.M.. Norm taxied out from the hangar and took off to the south, which he customarily did because it was downhill and also headed them back toward their house to wave goodbye to those staying home.

He had the plane off the ground well before the end of the strip. Then, while he was still climbing for enough altitude to circle the house, the engine coughed and quit. He turned back toward the airstrip, saw he wasn’t quite high enough to clear the rocky wall of Sand Draw and tried to turn right to land in the wash bed, but ran out of altitude and flying speed before he could complete the turn. The plane crashed into the sandstone headwall just below the rim and instantly caught fire. Norm and Doris, unconscious from the impact, had no chance to get out. It was said that for a long time after that, whenever a plane happened to land at the Nevills strip, their dog “Nig” would race frantically up there yelping excitedly, and then, after a while, come walking slowly and silently home.

In the words of Hilda Oliver Perkins, who had known them both from 1933, Norm “was completely fearless. He was always laughing and happy and I don’t think I ever saw him when he wasn’t excited about doing something. Doris was the same, always smiling and happy. Life was a challenge and an adventure to both of them. I’m sure they went over in the way they would have preferred—together.”

In 1949 Norm Nevills doubted that anyone would ever equal his seven expeditions through Grand Canyon. But he had set the stage better than he knew, by handing his successors a well-finished combination of expedition boat design and boat-handling technique just as whitewater boating was catching the public fancy.

*Gaylord Staveley*

NOTE: This article is an excerpt from portions of Gaylord’s upcoming book about river running, *From Nevills to Nowdays*.



*Norm, ending a Grand Canyon expedition, swims eagerly to Doris, aboard the launch that will tow the cataract boats down Lake Mead to Boulder Beach.*

*Photo courtesy of Cline Library, Special Collections and Archives, Northern Arizona University.*

## One Last Buzz

AS MANY OF YOU KNOW ALREADY, in August 1998, a memorial plaque honoring Buzz Holmstrom was placed at Sturdivant Park in Coquille, Oregon, Holmstrom's hometown. At the time one memorial, even for a man like Holmstrom, seemed quite enough. Now we have gone and done the unthinkable; Buzz would never forgive us.

On Friday morning, June 14, 2002, a second plaque honoring Buzz was placed at Rondowa, the confluence of the Wallowa and Grande Ronde Rivers in eastern Oregon, where he died more than fifty years ago.

Kevin Hoskins, (B.L.M. river-ranger and navigator of bureaucratic waterways,) Mike Miller, (master of stone, heavy equipment, and the open road) and myself (ex-suntanned-idiot boatman and eternal rowmantic) secured the plaque to the abutment (river left) of the trestle bridge spanning the Grande Ronde River without mishap, for the most part.

We raised our bottles of Guinness and toasted Buzz, the plaque, the River, the beautiful day, our mothers; you see what I mean...

There are a couple of ways to reach Rondowa. You can, of course, do a river trip on the Grande Ronde which can last from three to five very slow days. It's a wonderful piece of water, especially from May until early July. Put-in on the Wallowa River at Minam on Highway 82. Before you depart, stop in and say hello to the owner of the Minam Store, an original eastern Oregon curmudgeon of legendary stature. He might even talk you out of buying his warm beer or using his shuttle service or even going down the river.

Anyway, it's a leisurely ten mile float to the confluence where the Grande Ronde River intervenes. And though carrying less volume than the Wallowa River, the Grande Ronde is longer and therefore trumps the clearer, fresher Wallowa. Rondowa—the last of the Wallowa, literally and syllabically. Row across the confluence and pull your boat up on the cobble stone beach. Most confluences have an air of mystery and wonderment about them. Rondowa is no exception.

You can also reach the plaque by walking a couple of miles along the railroad tracks from Palmers Junction, a peculiar place where the road ends. It is a pleasant stroll out to Rondowa with the Grande Ronde River rollicking along beside you. Takes about forty-five minutes unless you lollygag (an activity I highly recommend) along the way. To find Palmer's Junction, however, you should stop in Elgin, Oregon (please check your map carefully) first and ask for directions. Likely as not, you'll get a long gaze and a bit of head scratching, followed by a lengthy explanation with

some world-class hand waving and finger pointing. Once you have the directions, you should probably stop again and ask another friendly soul to verify the first set of directions. If you are still feeling, uhhmm, directionless, try again. The drive to Palmer's Junction takes an hour or more. It is beautiful, especially in fall.

For moral and financial support, we offer thanks to the Holmstrom family, Richard from Pennsylvania, and Brad of Fretwater Press.

As Buzz said after his amazing river journey and we heartily agree, "Everything O.K." (But please, no more damn plaques.)

*Vince Welch*

# Wilderness First Aid Courses 2004:

Sponsored by GCRG & Desert Mountain Medicine (DMM)

WILDERNESS FIRST RESPONDER—March 18–26, 2004 (nine day course)

- Prerequisite: None
- Location: Flagstaff, AZ (exact location to be determined)
- Lodging & Meals: On your own
- Certification: three-year WFR certification and two-year CPR certification
- Cost: \$435

WILDERNESS REVIEW (RECERT) COURSE —March 29–31 (two and a half days) and April 2 4 (two and a half days)

(Please note the April 2–4 course is currently FULL!)

- Prerequisite: DMM will accept anyone who has had and kept current a WFR certification (80 hour course) through Wilderness Medical Associates, WMI, SOLO, NOLS, DMM and other Wilderness medicine providers.
- Location: Flagstaff, AZ (exact location to be determined)
- Lodging & Meals: On your own
- Certification: Renews your certification for three years plus two-year CPR cert.
- Cost: \$185

Also, Desert Mountain Medicine will be offering a Bridge Course directly (not through GCRG) on February 25 29TH in Flagstaff. This course would upgrade you from a Wilderness Advanced First Aid (WAFSA) to a Wilderness First Responder (WFR). This may be the last Bridge course that they offer, so if you need it, better sign up! You can register by calling Shoshanna Jensen of Desert Mountain Medicine at (928) 213-1243.

Class size is strictly limited for the GCRG/DMM Review & WFR classes. Send your \$50 non-refundable deposit with the application below to us at PO Box 1934, Flagstaff, AZ 86002 to hold a space. Checks can be made payable to GCRG. If you work for an outfitter who pays one hundred percent of course costs, just send in the registration form by itself and we'll take care of the rest. The courses are already filling, so act now! GCRG reserves the right to cancel any classes due to insufficient enrollment. Call the GCRG office at (928) 773-1075 with any questions.

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## What Do You Do In The Winter?



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