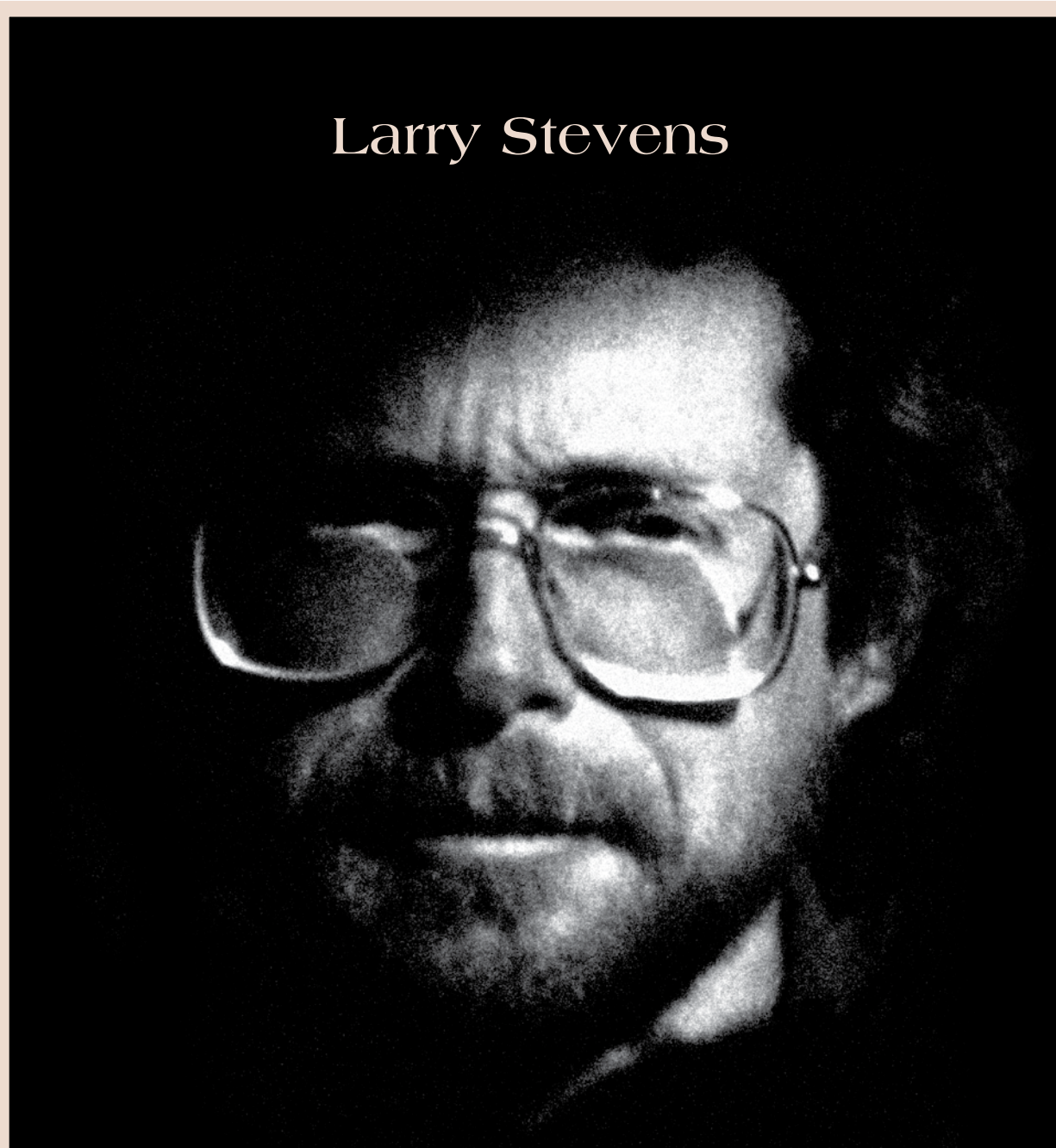




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boatman's quarterly review

Larry Stevens



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I'm a biologist. My third memory, when I was three, is of my mother pointing at a patch of bark on a maple tree in Cleveland. I was just a little kid, just looking at bark. But she moved her finger, and an underwing moth that was camouflaged against the tree fluttered its wings in a bright flash of red and black. That image of life erupting out of the insensate background stands out very clearly in my early life. It was my first entomological encounter and there has been no doubt at any point in my life as to my love of living creatures, extending to all life in a very direct way. I have never questioned that love.

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And Another Thing...

When traveling to a new country, it is a gift to have a guide. They know the nuances of the world they live in. [We] trust [their] instincts and borrow them until [we] uncover [our] own. But there is danger here. One can become lazy in the reliance on a guide. The burden of the newcomer is to pay attention.

Terry Tempest Williams
An Unspoken Hunger

BACK IN NOVEMBER, I was asked to articulate Grand Canyon River Guides' position on the Wilderness issue to a group of people discussing it for Grand Canyon. While I was unable to say that we had a clear position on the issue, I could express some of our fears and concerns. One of those revolves around a constant and pervasive claim put forth by many private boaters (and sadly, some commercial guides as well)—that commercial river trips are unnecessary given the number of people willing and able to go downriver without concessioned services. There is a fear that all of the CRMP proceedings and the Wilderness debate are a thinly-veiled attempt to do away with commercial boating in Grand Canyon.

We can (and should) debate how expensive these trips should be, whether they should have motors or last 4 days or 14, how to get private boaters on the river quicker, possible changes in allocation ratios and how to provide access for educational groups, youth organizations and others. But the problem I see is that all these issues are becoming synonymous with "commercial trips." If something is wrong with the system, it's very convenient to make it the industry's fault, especially with talented and well-outfitted private trips to hold up as examples of people who don't need the services of the commercial industry.

I emphasized at the meeting, and do so here as well, that commercial boating in Grand Canyon is extremely important, serves a purpose distinct from that of non-commercial trips, and is invaluable to the public whom we serve. Neither type of trip is "better" and we need both on this river. Most of our people come because they want and need guided services, not because they haven't time to wait for a non-commercial permit. The vast majority of commercial clients choose these trips because they have neither the knowledge, experience, connections or desire to go privately.

We hear constantly how only 10% of backpackers

in Grand Canyon use concessioned services, so why shouldn't river trips be similar? There is a distinction. Everyone can walk, not everyone can run a boat. Backpackers are usually desirous of a more solitary experience, and are often on a quest or a challenge to themselves and do not want or need the services of a guide. People going on river trips are consciously entering a truly alien environment and often prefer to be guided (let's face it, moving water often frightens us as humans). We cannot compare apples to oranges in this case.

I read a letter in the recent Grand Canyon Private Boaters' Association newsletter *The Waiting List* that claimed "I know that the quality of my trip far surpassed the quality of a commercial trip..." And another statement in a recent *High Country News* article that stated "to go really deep, you need to go on a private trip." Unequivocal, narrow-minded and simplistic statements like this annoy me. They make

me write long-winded articles like this. Certainly, we on commercial trips are not all exploring and experiencing the river for the first time together as is the case on many private trips. Yes, we provide a safety net, an element of "cush" that a self-outfitted trip may not have. But these things do not take away from the experience for our guests. Because they do not have to worry about whether they will find a camp, eat well (or soon), make it through this or that rapid, because someone else is taking care of the details, these people are free to truly let go and go far "deeper" than one might imagine. These postal workers, and doctors, teachers and students, these accountants and lawyers, writers and computer jockeys, these homemakers, teenagers, nurses and film makers, these actors, musicians, carpenters and policemen are free to become some of the things they used to be as children, or never have been and always wanted to be.

Because a large part of a commercial river trip involves education—about geology, archaeology, conser-



vation, history, ecology, Native Americans—many of our guests come off a Grand Canyon trip beginning to see their world with truly different eyes. As a teacher I've learned that there is no better way to help people learn to care for this planet than by helping them understand how it works, understand the connections between all living things. These people come to us open and ready for anything. Certainly, they may have expectations, and at the start many are just there for a vacation, but most of them leave with something far greater than that. They leave with a sense of the natural world, and a sense of history—theirs and other people's. They take home the confidence and joy that comes from climbing that waterfall by themselves, completing that hike, living outdoors under the stars. As guides, we do not *do* this for them. We may show them the best ways to climb, or give them an idea of where to put their feet, but before long, they are doing it themselves. Having someone there to help, having someone who can still look up in awe and say “Wow—would you look at that!” after having seen it 50 or 100 times before helps our guests look at the Canyon in a new light as well. A good guide will not do everything for the guests. A good guide will show them how to pay attention, the rest is up to them.

After reading Brad Dimock's article in the recent *High Country News*, I too felt sad at the changes that I have seen in the industry in just 12 years. The restrictions and arguments of the late '90s make the late '80s look free and simple—I can't even imagine the '70s. Some people say our guests have changed, become too soft, too demanding—experience collectors instead of adventurers. Some people say the price of our trips is too high, the excess too great. They say the industry has gotten too fat, too entrenched. The young, poor and disabled are disenfranchised. Yes motors, no motors, shorter trips, longer trips, pee in this cup, wash your hands, jet skis, helicopters, more people, less people... it gets overwhelming at times, doesn't it? But if some things could be changed in the industry does not mean the industry has outlived its purpose or its value.

No one is saying that non-commercial trips are less valuable or don't deserve a fair shot at getting on the river in a reasonable time frame. Perhaps they even deserve a greater share of the pie. That will be decided soon enough. But the current rhetoric sailing through the air these days is so confusing that people are forgetting the point of it all. In the Wilderness debate, “motors” are becoming synonymous with “commercial trips,” and the battle for access rages hot and heavy around this theme. No matter what the final outcome of the access/allocation and Wilderness struggles is, we need to remember that the tens of thousands of people served by this industry are the American public fair and square, just like anyone else. They have been given a

gift that shines no less brightly and has affected them no less deeply just because it was paid for with a credit card.

Christa



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 held the first Monday 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 January, April, July and October. Thanks.

Our office location: 515 West Birch, Flagstaff, Arizona

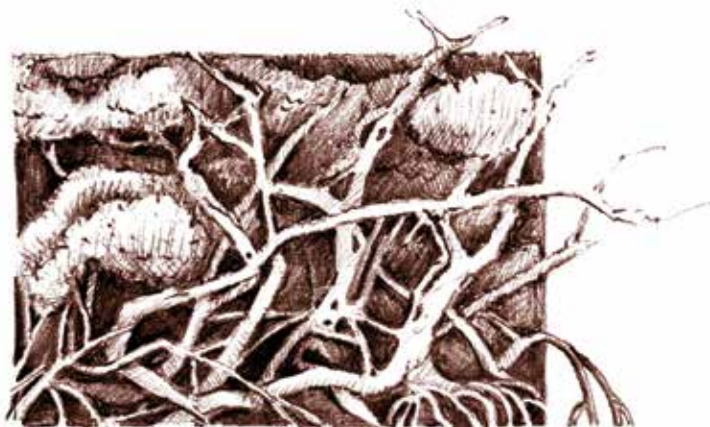
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A Talk With the NPS

WE MET WITH MEMBERS of the Park Service just after the New Year to catch up on new rules and regs that might be coming our way, talk about the GTS and learn what we could pass along to our membership so that we're all on the same page. We met with Patrick Hattaway, Jim Northup, Dave Trevino and Allen Keske and here's what we thought all of you should know:

- The checkout at the ramp at Lees Ferry will still be as streamlined as last season, and each company should expect about three on-river spot checks per season to check permits. This is part of an attempt to maintain accountability to the current plan, fee structure and allocation system.
- Ed Cummins wants to re-emphasize that if you want to renew your license please call ahead to make an appointment. Ed and Ray will be out more on ranger duties so they may not be there if you show up unexpectedly. Call the Lees Ferry station at 520-355-2313.
- There will be no changes in health regs or the food code—the Park will continue use of the standardized checklist that many of you saw last season. There is a new Park Sanitarian whom you may see on the river. Jim Nothnagel comes to us from several years at Glen Canyon NRA and has an office at the Northern Arizona University Forestry Building. We'll see if we can convince him to come up to the GTS to introduce himself.
- There will be no advance review copy of the cor's this year because the changes are very few and very minor, including the emergency radio frequency change mentioned in the last BQR, and a couple of other details.
- Just a reminder that the trend in injuries last season was the same as in years previous: off-river hiking injuries were by far the biggest problem, not river-related stuff. Please be very mindful and stress this to your folks. We know you do, but it can't hurt to go over it again.
- Hantavirus warnings need to be included in our orientations. The Center for Disease Control (CDC)



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has said that the best way to avoid contact is to not sleep on the ground, so we should expect passengers asking us for tents more than they normally might.

- Some not-so-new regs that we need to be reminded of: bow-riding motor rigs, including the very front of the side tubes (the angled part) is prohibited. This doesn't mean the "bathtub" areas in some motor rigs, or the main part of the side tube, but dangling your feet off the nose, or bronco riding the snout of the outrigger. This is part of the Code of Federal Regulations, a Coast Guard rule, not just Park Service. In addition, although many of you weren't aware of this (we weren't) swimming rapids (intentionally) is not allowed as per GCNP regs. This rule has been in effect for a long time, but obviously that 48° water has been really tempting at times.

- Sorry, but you *can't* refuse to take a Park Service ride-along on your boat, even if you hadn't been informed that they were coming along. Don't leave 'em on the beach, okay?
- The upper ledge at Nankoweap is *still* off limits. Please let your folks know

because the buildings are not in such great shape and there have been complaints to the Park about passengers going up there, leaning on the walls, etc.

- Toilet practices are *never* anything we can compromise on! Someone saw a passenger heading off into the rocks with a shovel and toilet paper. This is not good. Please follow the regs everyone— things like that are there for a really good reason. You may not want to do the tarps under the table thing, but come on— backing off on toilet stuff? Ride your folks if they don't like it. It's really important.
- Regarding safety and rescue situations: The Park also would like us never to leave a boat or major equipment behind and go downstream without calling them. Also—and this is something I don't think many of us know—the River District is not going to slam a trip or a company if they get off their schedule in the process of trying to help another trip. Our first concern should always be safety of people and equip-

ment, whether from your trip or someone else's. If you end up taking a day to help someone out in a serious emergency and you are late at your destination, the Park will not penalize you. This is for emergencies only—not if someone's stove breaks.

- The hikers' guidelines for safety in heat will be back in place next summer. We will need to get our folks on the trail by 7 a.m. (from Phantom or the Rim), or not until after 4 p.m. People are advised to wait at Indian Gardens until the switchbacks are in the shade. Once again, Cremation Camp will be at a premium, and those two camps are reserved for trips with exchanges. While you're at it, please save Grapevine for people with exchanges as well. We know you may want to camp in the Gorge on the only trip of your life, but please have some thought and care for the people climbing out of the Canyon in the summer's heat.
- We talked about the possibility of relaxing the no-helicopter rule for guide family emergencies. They are very willing to discuss the possibility, and were not entirely opposed to the idea, but they asked that we also consider a range of alternatives that might work for us. They are more than willing to get messages to us any way they can: at Phantom, hike them in with a nearby ranger, send them down with faster

trips, etc., but it would be good for us to figure out what might be other ways to contact guides on the river if there are family emergencies for which they should leave. So think about it and we can talk about it at the GTS.

- The NPS will be testing a new type of satellite phone, the Iridium, which is apparently far superior to any other type of phone at getting out of the Canyon. It's supposed to be able to receive messages as well. If the Iridium works as well as they hope, we may be moving towards that as a way to keep tabs on the outer world, and for the outer world to keep tabs on us. This may be the wave of the future for emergency situations. No, you can't check the ball scores or the stock prices with it, sir. Sir, put *down* the sat phone and step away from the boat, sir. *Sir!*

So that's all the news that's fit to print from the NPS side of things. If you have further questions or clarification in mind, several NPS folks will be at the GTS in late March, and they'd be happy to talk to you there.

Christa and Bob



Your NPS Representatives

IN CASE YOU DIDN'T KNOW who some of the people that we (and therefore you) deal with at Grand Canyon National Park, we thought we'd remind you of the people whose names we toss around so casually in conversation. These are good folks and they've helped us a lot—whether it has been fighting off the Coast Guard or getting our GTS river trip on the water, they're good people to know. Thank 'em next time you see them.

Robert Arnberger	Superintendent
J.T. Reynolds	Assistant Superintendent
Raymond Gunn	Chief of Concessions
Allen Keske	Concessions Specialist
Steve Bone	Chief Ranger
Jim Northup	Branch Chief of Ranger Operations
Patrick Hattaway	River District Ranger
Dave Trevino	River Ranger
Dave Desrosiers	River Ranger
Ed Cummins	Lees Ferry Ranger
Ray Hall	Lees Ferry Ranger
Chris Mengel	Meadview Ranger
Jim Nothnagel	Park Sanitarian
Steve Sullivan	Permit Program Manager
Diana Pennington	Visitor Use Assistant (Permit Office)
Andy Anders	Visitor Use Assistant (Permit Office)
Dave Haskell	Director, Science Center
Kim Crumbo	Wilderness Coordinator
Linda Jalbert	Resource Specialist (CRMP Planning Team)
Laurie Domler	Public Involvement Liaison (CRMP Planning Team)



SOUNDS LIKE THE TITLE of a self-help book, doesn't it? Well, in a way, it is. When we all started this line of work, we never expected we'd be doing it so long, we never thought about things as mundane as retirement, health insurance, benefits. Most of us thought "I get paid to do this? Wow, am I lucky!" And we were. Still are. But as the profession has grown up, we have grown with it, out of what some have called the "Clueless Years" into knowledgeable, educated, certificated, licensed, seminared, tested, professional—guides. We set the standard for the industry, but unfortunately for some of us our wages and benefits have not followed to the same level. We've heard over and over from so many of you: "Why aren't you working for better wages, health insurance, benefits?" "What are you doing to better the plight of the guides?"

As part of an attempt to do just this, we will be offering articles in this and upcoming BQR's about things you can do yourself to plan for the future. It is in largely up to us to do this for ourselves—unfortunately, part of the responsibility of choosing this great lifestyle means learning to take care of ourselves, no one else is going to do it for us. And you can and should go talk to your outfitters. GCRG may be a guides' organization, but we are not a union. We met with representatives from the outfitters' association (GCROA) to discuss various issues and they will not speak with us about these topics (see Mark Grisham's letter in this issue). Individual outfitters would rather hear from you—their employees. It may be frightening to think of going to your boss and saying you feel you deserve to be paid more, but you have to do that—he or she is the only one with the power to help you in that way. So guides, go talk to your outfitters, and outfitters please listen when they do. No one is saying they don't like working for you—just that they want to be allowed to plan for their future and be compensated for the professional job they do.

Probably the easiest thing to do for yourself at first is to start an IRA, so we've started with this subject. Future articles will go to more complex issues. If you have questions for Mary Ellen, please drop us a line or give us a call. We'll pass them along and try and answer them in future issues of the newsletter. Happy saving!

Christa



COVER YOUR A—. We're not talking about on-river accidents, a backward run through Crystal or a swim through the Little C riffle. We're talking retirement, old age, after the paychecks cease. How many of us have planned, adequately or at all, for our future? Most of us receive little, if any, employer retirement benefits as river guides. Profit-sharing plans, 401ks, pensions, etc., are offered by some outfitters, but many of us fail to qualify.

So you need to be your own hero. It doesn't take a rocket scientist to be responsible for your own financial future. I know it's scary, but you're a river guide! Running Hance at low water and guiding city folks up rocky trails is a lot trickier.

How do you get started? It's never too late to start, though realize that the time is *now*. The sooner you begin saving, the more time you have to benefit from the magic of the "time value of money." You also don't need to rely on expensive (and often greedy, ill-informed) investment advisors. A little homework at the library or on the Internet will send you on your way. There are lots of publications and software packages out there that can help you strategize and plan your needs, with built-in formulas to keep the math simple (I know you have a math phobia—don't we all?).

We don't want to turn the BQR into *Fortune* Magazine, but here are some basics. Most of you will qualify for an IRA, or Individual Retirement Plan. This financial vehicle allows you to set up your own retirement plan and invest it as you see fit—independent of your employer. There are traditional, Roth and SEP (self-employed) IRAs to which you can contribute up to \$2,000 every year (or more under a sep-IRA). You can set up your IRA account through most banks, brokerage firms like Schwab and Fidelity or insurance companies. Once you make a contribution to your IRA account, you choose how to invest those funds—in money market accounts, bonds, mutual funds (a group of individual stocks), etc. (Remember that even if your employer gives you the moon and the sun in terms of retirement benefits, you probably still qualify to set up certain types of IRAs on your own.)



General rules for wise investment include:

1. *Be master of your domain.* Take responsibility for your own future. Only *you* have your best interests at heart.
2. *Do your homework.* A hot stock tip from a buddy that sounds too good to be true usually is. Understand the risks involved with each investment.
3. *Diversify.* Your retirement funds should be divided between a variety of investment vehicles, with varying degrees of risk. Most mutual funds naturally spread the risk to a certain degree (vs. individual stocks). Younger folks can risk more than older folks can.
4. *Invest for the long term.* The wild fluctuations of the stock market are interesting to watch, but shouldn't panic you. Think of it like the river's flow regime. You don't want to run the Gorge on Sunday's water, but it won't ruin the whole trip if you have to. Ride it out.
5. *Get anal about saving.* Set up a regular savings plan and commit to it. Even \$25 a month set aside for your retirement will be greatly enjoyed by you 30 years from now. As our mothers used to tell us "Pay yourself first!"
6. *Respect the "time value of money."* What does this mean? Let's say you invest \$2000 a year in your IRA for 10 years. At an 8% return, the IRA would be worth \$28,960. Not bad. But if you double the time period to 20 years, you'll have \$91,520! The sooner you start saving, the quicker your money will expand.
7. *Ask about the fees.* The folks holding your IRA account don't do this for free. The fees are usually subtracted from your account and often don't show up on your statements. Understand up front what the account and transactions will cost you. Could be the difference between Spam and filet minion after retirement.
8. *Give yourself a quarterly check-up.* Not as bad as going to the dentist. When your quarterly reports arrive from the investment house, give them a once over. What rate of return did you experience over the quarter? Did it keep pace with the stock market as a whole? Over time, the general rule of thumb is to earn the same as the stock market's average, which has been about 11% since its inception. If your accounts are lagging seriously behind, it may be time to change some of your limping funds.

Once you decide to set up an IRA, you will need to decide between a traditional IRA and the new Roth IRA (named for the senator who sponsored the legislation). The traditional IRA will allow most of you to make a tax-deductible contribution in the year you make the contribution to your account. However, this contribution and the money it earns will be taxed when you pull it out of the account at retirement. In other words, all tax is deferred until retirement. The Roth IRA does not allow the contributions to be tax deductible, however (and this is the deal of the century), all the earnings on those contributions will be tax free (not tax deferred). This means when you pull the money out of the IRA account at retirement, you get it all! No taxes! For most of us, the Roth IRA makes more sense.

Keep in mind you can make contributions to your IRA account for this year all the way until April 15th of next year (it can be a great way to use your tax refund). Who says the IRS isn't flexible?

Mary Ellen Arndorfer

A Word From GCROA

IN EARLY DECEMBER, Grand Canyon river outfitters were pleased to receive from the Board of Directors of Grand Canyon River Guides an invitation to meet and discuss a range of issues pertaining to the Grand Canyon river running program, the Colorado River Management Plan revision process, and guide employment.

In response to this invitation, I would like to express the appreciation of all the outfitters for this interest in dialogue, and for the desire to constructively address some of the many issues and some misunderstandings of the recent past. As we all know, some of these matters can be quite divisive.

Garrett Schniewind and I are currently working with Christa and Bob to schedule a meeting between the outfitters and GCRG to take place in Page during the latter half of February. In the meantime, we are working together by sharing information and perspectives in an attempt to lay a solid foundation and to provide focus for a successful and forthright exchange. We very much appreciate and value GCRG's interest in advancing the working relationship between our two groups.

One of the issues that confronts us involves GCRG's desire to become involved as a third party in discussions between employers and employees regarding guide compensation and benefits. I understand that GCRG has received substantial input from working guides urging this course of action.

As I have informed the GCRG Board of Directors, Grand Canyon River Outfitters Association is not empowered by its member trustees to represent or to discuss on their behalf any issue related to an outfitter's employment policies. This is simply not part of the association's role. Discussions of these matters can only appropriately take place between a specific company's management and that company's individual employees.

The mission of Grand Canyon River Outfitters Association does involve addressing the many public policy issues related to the whitewater boating program at Grand Canyon National Park. These matters include the type and nature of commercial Grand Canyon river trips, government regulation of these operations, and the working relationships we desire to build with all those interested in the management of the Colorado River corridor within the park.

I understand that some will find GCROA's inability to be involved in guide employment issues quite frustrating. But I hope that potential disagreement over this one point will not impair the mutual desire of GCROA and GCRG to work effectively together. We will, of course, not always agree. Nor should we. But there are many positive things for the canyon and for the river experi-

ence that we can accomplish by working together.

We are aware that our recent lack of public comment about CRMP issues and how we feel about the revision as it has progressed to date have raised some eyebrows and perhaps even raised some suspicions. In the near future, I hope to present on behalf of the outfitters a range of ideas and proactive measures that will come in response to the many issues that have been raised.



That time has not yet arrived. But please bear with us. In the meantime, anyone interested in discussing in greater detail matters related to commercial boating in the Grand Canyon should feel free to contact me directly. I can be reached at (520) 556-0669 or via e-mail at mark@gcroa.com.



Mark Grisham

The Word Wilderness

WHEN WE THINK of the word “wilderness” we think beautiful thoughts of quiet times spent in deep personal reflection far away from the daily hustle and bustle. Something worth fighting for. Something worth preserving. Every one of us shares this desire to find such a place. Everyone, from the very young to the very old, who has ever floated the Colorado River through the Grand Canyon, privately or commercially, by motor or oar, has in some way felt the true essence of wilderness. So what is “wilderness management?” To me it is an oxymoron. What we really mean is wilderness preservation. To “manage” the Grand Canyon for wilderness is to attempt to control it. It is to say who can and cannot discover its secrets, and that is wrong.

Speaking on behalf of a lot of river guides, the Hatch Amendment did not “derail” the wilderness management plan. Rather, it saved the river from disaster. It has provided the opportunity for more than the few, the proud, and the brave to see the Canyon by boat. A very large percentage of passengers on motor trips cannot, do not, and would not feel comfortable, safe, or satisfied on a smaller rowing trip. That is a fact. We are given a small menu of choices for wilderness management: A) Wilderness or B) Potential Wilderness. Believe it or not, both mean the elimination of motors from the Colorado River through Grand Canyon, preserving it only for those who are able to participate in a rowing trip. What is needed is a plan that does not separate the Grand Canyon from the Colorado River. We need a plan that does not curtail or restrict current operations on the river. The Grand Canyon is a National Park and should set new standards for park management. No one wants another dam here. But the obsolete idea of wilderness management as it stands will, if invoked, build a bureaucratic dam. It will block access, create more government regulations on an already overburdened system, and back up the waiting list into a lake of red tape for everyone.

Less than 25,000 people a year see Grand Canyon by boat. Honestly, that is not a large number for the area the river corridor encompasses. The problem is that most of us want to run our trips in May, June, and part of July. *Spread the season out.* If you want a true wilderness experience, go down the river in the winter, early spring, or fall. The skill level of the private boaters has increased as well as their numbers. Let’s recognize that there is a need for more private allocation. This allocation can be built into the Spring, Fall and Winter season. It should not come out of the commercial sector. Let’s

build on what we have, not destroy it. Let’s build new, long-lasting standards that will provide the opportunity for everyone to experience the wonders of the Grand Canyon. Let’s develop scholarships that would sponsor educational and youth trips. Let’s use the aid of computer modeling to help avoid assigned campsites and congestion. Let’s allow all commercial companies the option to run both motors and oar powered trips.



The outfitters currently are in a fight for their livelihoods. They are a big target and easy to shoot at. Most of them are family-owned businesses that have been in operation for generations. Sad to say each year there are fewer and fewer of them. Whether you want to admit it or not, every one of them does an outstanding job of serving those who not only need but also prefer a guided river trip. Wilderness is in the heart and soul of the Canyon and that is where you will find it, preserve it, and protect it for everyone.

Bob Grusy



Adopt-A-Beach

WE ARE EXCITED to report that the Grand Canyon Conservation Fund (GCCF) recently voted to help fund the two GCRG programs that deal with research and monitoring of the river corridor in Grand Canyon: the Adopt-a-Beach Program (AAB), and the Adaptive Management Program for the operation of Glen Canyon Dam. The GCCF is operated by participating outfitters who decide how to allocate funds each year that they collect from their river guests. Their guests are asked if they would like to voluntarily add \$1/day of their river trip price to the GCCF, a fund that supports river conservation efforts. Allen House of Azra and Bill Gloeckler of Arizona River Runners are in charge of the allocation committee for GCCF.

GCCF has financially supported AAB for each year of its existence, 1996-1999. This is a demonstration of their continuing support of river guides and the recreational boating experience along the river. Johnny Jantzen and Gary O'Brien are presently analyzing the results of the last two seasons and will have it completed for the annual Guides Training Seminar in March. Please feel free to adopt your own beach at the GTS or at the GCRG office in Flagstaff. And, a special "thank you" to all of you guides who have been doing the work these past three years.

GCCF also decided to provide financial support for GCRG's participation in the Adaptive Management Program. As many of you know, Secretary of Interior Bruce Babbitt asked GCRG to represent recreational river runners on the Adaptive Management Work Group (AMWG), a Federal Advisory Committee composed of a diverse group of stakeholders, which advise him on how best to operate the dam for the sake of natural, cultural and human resources in the river corridor. As your representative on that committee, I regularly attend meetings of the AMWG and Technical Work Group, mostly in Phoenix. These groups provide administrative oversight to river research and monitoring work conducted by the Grand Canyon Monitoring and Research Center in Flagstaff. It is important and time-consuming work that is now financially supported by river runner dollars through the GCCF.

We are encouraged to see that more outfitters have recently joined the GCCF, giving this organization some real financial "muscle" to help preserve and restore the river ecosystem in Grand Canyon.

Andre



IN 1998 OUR Adopt-a-Beach (AAB) program for the photo-monitoring of Grand Canyon beaches was given the thumbs-up from both scientists and policy makers of the river science community.

Last August, an advisory committee of eminent physical scientists from across the nation gathered in Flagstaff to evaluate the physical science river program. This committee lauded the AAB program as a very cost-effective means for providing unique data to the river monitoring program of gcmrc, and it should be encouraged and supported. The value of guide-monitoring efforts was driven home to them on a river trip from the dam to Badger Rapid. As we examined and discussed various resources of the river ecosystem, a big, black storm cloud roiled and grew above Vermilion Cliffs. When we started our hike out Jackass Canyon, Badger Canyon erupted from the other side of the river with a mass of churning red mud, sand and boulders that slopped and crashed its way to the river. The geomorphologists were very impressed, not just by the event itself, but by the fact that if we had not been there to witness and record this aspect of the physical processes of Grand Canyon, no one would have known about it. Our knowledge of how rapids change and how much sediment might be added to the river corridor by such events would remain vague and imprecise. The scientists realized, given the enormous expense and infrequency of monitoring trips, that the AAB approach to monitoring is not only essential for recording anecdotal natural events, but it gives taxpayers the biggest bang for their buck.

Later in the fall, the Technical Work Group decided to provide additional funding for the AAB program. It was obvious that this was a win-win deal: inexpensive and essential monitoring of a crucial "resource" by people who are always down there and who care most about that resource. The results are unbiased because 1) the same simple procedure is carried out at each site, 2) repeat photography can be evaluated by anyone, and 3) it's being done by numerous river guides who work simultaneously and independently.

So we have now finally begun to "connect the dots" between policy, science, people, and the place. This is a people-based effort that is an essential component of the monitoring program, involves the people who care most about the resource, and funds it collaboratively through the donations of commercial river guests and power revenues from the dam.

Andre



AMWG: An Update

THERE ARE SOME NEW and continuing developments in Adaptive Management Land:
1999 Beach Habitat Building Flow—It's still possible that a beach habitat building flow could happen sometime during the runoff season, February to June (probably actually March to April because of resource criteria). But, given the lack of snowfall in the Rockies so far, reaching the "hydrologic trigger" for making one happen is looking unlikely. The trigger requires that Reclamation needs to release 1.5 million acre feet or more for any month during the runoff season. Any spike flow, as of now, would likely be less than 45,000 cfs and would last for about two days. The cap on a spike flow reflects concern about loss of habitat for the endangered Kanab Ambersnail at Vasey's Paradise.

Scope of Adaptive Management—The scope of what should be funded by the Adaptive Management Program is presently under intense discussion. Upper Basin water and power interests are doing all they can to squeeze the river ecosystem into as small a box as possible. Why? They want to provide as little funding and water as possible to preserve or enhance the river ecosystem. We in the recreational community would be very concerned if the scope of this program becomes excessive, but we are more deeply concerned that it not receive the necessary funding and efforts to adequately understand and predict any beneficial or detrimental effects of Glen Canyon Dam on the river ecosystem in Grand Canyon.

Water temperature control device—The idea from U.S. Fish and Wildlife Service is that endangered native fishes in Grand Canyon will do better if water temperatures are warmer in Grand Canyon, more like the pre-dam era. A selective withdrawal device will be installed on Glen Canyon Dam by Reclamation over the next two years. It will cost about 15 million dollars, a real bargain compared to the original proposal. An Environmental Assessment on this project should be available soon. They expect to have it operational by 2002. There is some concern that warming temperatures may also favor non-natives that compete with or prey on natives.

My appointment to these panels is to represent the concerns of you 20,000 or so recreational river-runners who float the Canyon each year. Please, keep me informed on your thoughts and concerns. E-mail or write GCRG. I will do my best to get back to you as my time allows. Otherwise, look for updates in your copy of the BQR. Thanks.



Andre

GCRG Fall Meeting

ON NOVEMBER 7, about 70 GCRG members, science types, Park folks, and other interested parties met at the Museum of Northern Arizona's Colton House in Flagstaff for the annual GCRG Fall Meeting. We highly suspect that a large percentage of people were there to enjoy Martha Clark's exceptional cuisine, but be that as it may, everyone got involved in some great talks and presentations by visiting speakers, with a lot of good questions and discussions thrown in.

We began the morning with a discussion of guide benefits and wages, Dave Wegner dropped by to give us the latest heads-up on Glen Canyon Institute's efforts to decommission Glen Canyon Dam and Linda Jalbert updated us on the CRMP process. After lunch, Katherine Roberts from NAU and Bill Stewart from the University of Illinois at Urbana-Champaign and gcmrc gave presentations on two social studies research projects being done on the Colorado River. The NAU study involves computer modeling of river trip distribution and use of the corridor; the gcmrc study looks at attitudes and preferences among recreational users of the corridor. Stay tuned for more information about all such studies being done in relation to the CRMP revision.

We had a brief but rousing discussion of the Wilderness issue and the questionnaire (see articles in this issue), and Andre led us in a short discussion of the "recreational resource." What exactly is important about this resource that we want to protect, and how does the operation of Glen Canyon Dam potentially affect those values?

After a fabulous dinner of tamales and fixin's, Katie Lee regaled us with songs and excerpts from her new book (reviewed in this issue) and Green Sky took our minds off all the politics and proceedings with music and troubadoring around the rooms of the Colton House. A long day, but a great one. You shoulda been there.

GCRG would like to thank everyone who made the Fall Meeting possible: the Museum of Northern Arizona and Martha Clark, for hosting and feeding us so wonderfully; all the folks who helped Martha in the kitchen; our esteemed speakers and presenters; Teva Sport Sandals, for sponsoring the food for the event and for providing free t-shirts and sandals for participants; Katie Lee and Green Sky for the music; and last but *far from* least, Lynn Hamilton, for her tireless note-taking, computer-jockeying and astute commentary on issues and discussions. We truly could not do it without you. You make a great Trip Leader!



Canyon Morning

As I lay there
The soft blue
Of the morning sky
Gently steals the
Last of the night stars

And I am amazed!

As I lay there
The black formless
Canyon walls
Give up their
Secret crevices
And release their
Pastel cache of Color

And I am amazed!

As I lay there
The morning birds
Dive and swoop
Their presence
To let me know
We are mostly
Of each other

And I am amazed!

As I lay there
Memories of a different lifetime
Bring tears to my eyes
As I become open
To the gift of
One more day

And I am blessed!

Worth Johnson 9/98

Ballad of Bessie Hyde

The mighty Colorado cuts deep and cold and strong
chisels out Grand Canyon, works its way along.
But from the depths of ages, cold fury may arise
beneath a calmer surface waits violence, disguised.

Many a boatman's tried it and many's paid a cost;
the newlyweds of '28 are the saddest of the lost.
Glen Hyde was a river man, took Bessie as his bride;
claimed 'twas nothing finer than a canyon river ride.

*Come with me and we will see the canyon deep and wide
this boat's secure, don't forget that you're
my darlin' and my bride.*

They worked the scow together, for weeks rode side by side,
thought they'd earn their fortune as first couple who had tried.
'Twas November in the Canyon, the river a demon's brew
Bessie gamely pulled the sweep, but fear within her grew.

Through the frenzy roared their craft, fierce waves about them tossed.
Those who watched, and knew the two, were certain they'd be lost.
By Hermit Trail, Bess got off, swore flat that she was done.
Glen forced her back, cursed her cries, vowed they'd do the run.

*Come with me and we will see the canyon deep and wide
this boat's secure, don't forget that you're
my darlin' and my bride.*

Christmas day, at Diamond Creek, their wooden scow was found.
It looked to be a mournful tale of two crazy lovers drowned.
Though boat survived undamaged and in the hold remained
Bessie's secret diary, their fates were not explained.

Some folks say Bess shot her man and hiked out on her own
and in a cave's a skeleton with a bullet in the bone.
Glen Hyde was a river man, took Bessie as his bride
on Grand Canyon's river run and that is why he died.

The mighty Colorado cuts deep and cold and strong
chisels out Grand Canyon, works its way along.
But from the depths of ages, cold fury may arise
beneath a calmer surface waits violence, disguised.

Marion Boyer

homesick

like the love a girl has for horses
a girl, grown up swimming in river's lake
reservoir of rapids past roil
a love of earthly emotion, communion
with an arid land
and the horses, wild blazen mustangs

for Loie

Rhonda Barbieri

Mother Canyon

Oh, mother Canyon...
Some see your water and walls
as harsh. Inanimate. Unyielding.
But not me...
I can feel
the beating of your heart
as you wrap your canyon walls around me,
enveloping my entire being
in your tender, timeless beauty.
Your sensuous, muddy waters gave birth
to the me I now am...
your life poured into me
slowly, at first
imperceptibly picking up speed until
you rushed into me with an urgency
that, at once,
breathed life into me and
stole that same breath away.
And even as you give me life,
there comes a time
when I must leave your loving breast
to live out other parts of my life.
Though I am always yearning...
yearning to return to your safe womb
to pulse with your life blood again
to be reborn...
and reborn...
and reborn...

Michelle Starr

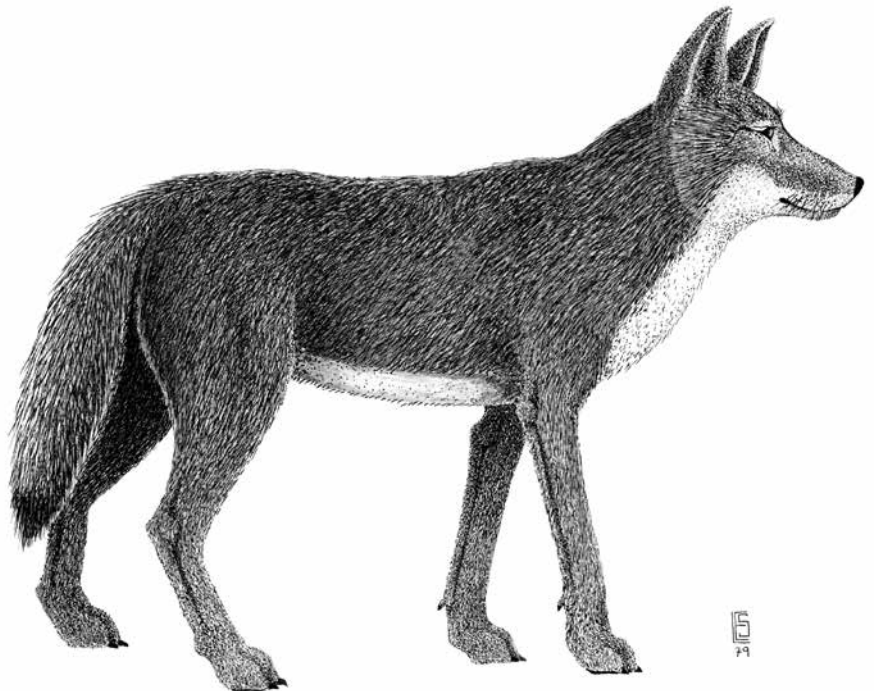
Grand Canyon Lullaby

Canyon wren sing a lullaby
in the violet time of day;
these walls above close out the world
and keep our cares away.
Canyon wren sing songs of time
locked within the stone,
and in this quiet solitude
you're never quite alone—

for stars are shining down on you,
as they did in ages past;
the river rocks the full moon's light;
you're free to dream at last.
The Milky Way will carry you
to slip along the breeze
and fly beside the canyon wren
and live your life in ease.

Time to rest at riverside
and listen to the night.
Time to watch the canyon stars
until the morning light.
And though the river calls to us
we put our boats away.
Canyon wren sing a lullaby
in the violet time of day.

Marion Boyer



The Questionnaire

PROBABLY NO OTHER ISSUE in the past 20 years has been so heated, so divisive and so misunderstood as that of Wilderness designation for the river corridor in Grand Canyon. In our last issue of the BQR, we included a questionnaire that we asked people to fill out and send back to us regarding the whole question of Wilderness in Grand Canyon. As of January 4, we had received 174 responses (a far cry from the 4 we received in our last mailing), which have been summarized in the following article. 75 guides responded, 92 general members, 1 outfitter and 6 non-members. The responses ranged from people wanting a full Wilderness right now for the Canyon and the river, to suggestions for other solutions that no one has even thought of yet. We've tried to print a representative sample of responses from all viewpoints. Only one thing was common to all the responses: everyone who wrote in expressed great love and respect for the river and the experience it provides.

We were surprised and delighted by the amount people wrote, about their opinions, thoughts, fears, hopes and what they feel is important about the issues. We received five-page typed letters, and forms so crammed with writing on both sides that we could hardly read them. Responses were mailed, faxed, e-mailed and phoned in, and we can't thank you enough for the effort and thought and care that you put into your responses. We couldn't publish all of the responses here, but they are on public record at the GCRG office and you are welcome to come sort through them if you like.

We did see a few things that bear clarification or discussion. One person mentioned that he was glad to finally be given a chance to express his viewpoint and not just be told what one person at GCRG thinks about things. We have always asked for our members' input, all along, about every issue of importance to the community of river runners in Grand Canyon. We *always* welcome letters, phone calls, e-mails, articles for the BQR and visits, whether we have sent out a specific call for input or not. We don't get a lot of input, but no one at GCRG has ever just expressed one individual opinion about these issues as the "stance" of GCRG. We will always express the majority of opinions that are made known to us, and past writings, letters and discussions of the Wilderness issue have done just that.

Several people mentioned disliking surveys that called for one single answer. So do we, but the

fact is that the choices we gave you on this questionnaire are the only ones up for discussion at the Park. We threw in the other options to see what we might get. If someone wished to design something completely different, that could be done and might accomplish something, but as of yet there is nothing else in the works that we know of.

Some responses from both guides and private boaters expressed the belief that Wilderness designation would give private boaters more allocation and quicker access.

Wilderness and private boater access to the Colorado River are two completely separate issues.

Some folks have been doing a splendid job of trying to link the two issues, but this is not just oversimplification, it is inaccurate and misleading. The Wilderness issue is part of the Wilderness Management Plan, the access and allocation issues will be dealt with separately in the CRMP. If there is a Wilderness protocol that the CRMP needs to follow to accomplish shifts in access and allocation, it still does not necessarily translate to more or quicker access for any one user group.

We need to help get private boaters on the river faster and find a way to work out a fair system for them, but this is not related to Wilderness status for the river. No matter how you feel about the two issues, keep them separate in your mind and discussions.

We received a lot of good advice, suggestions and thoughts from your responses. We thank you for those, and for taking the time to read and think and care about the issues. One of the wisest things we saw written came from a former guide who said "...whenever you don't take a firm stand on a position, the people who emotionally or financially have a commitment perceive any position not incontestably in favor to be one of opposition." Ain't that the truth. Well, we can't take a "firm stand" on this issue. We refuse to divide our community over something as myopic as motors vs. oars. We all need to be bigger than that—the Canyon certainly is.



Grand Canyon River Guides



The Responses

“Those standing in the middle of the road are likely to get hit by cars going both directions.” Anonymous

THE FOLLOWING ARE some of the responses we received from the Wilderness Questionnaire. Each response is not necessarily represented in full—many have been excerpted due to space constraints. Names have been excluded, but status (i.e. guide, general, etc.) has been included for the reader’s information. We have tried to give a fair and proportionate sample of the responses we received. The numbers listed in parentheses following each option are the percentages of choices for: **guides/general members/total questionnaires received.**

Option A: Full Wilderness for the canyon and for the river immediately (35/39/36)

The responses we received in this area expressed concern over the levels of protection the Park has received in the past, and concern for the future as well. Many people stressed the need for the greatest protection possible for future generations, recognizing that the loss of motorized travel would affect the industry, jobs and the ability of a certain sector to see the Canyon, but expressing that the Canyon is a special place that should not be managed for recreation.

It is very disheartening how the Park Service has degraded, developed and exploited our National Park and its “wildlands.” Wilderness seems the next step to ensure that areas remain unscathed and wild for generations to come. Think about the changes you have seen in your lifetime. That is no time at all! If we can forget about ourselves and think ‘solely’ for the Canyon, River and its whole, full protection is the only way. (general)

To exclude the river is absurd! The river is the heart of this magnificent wilderness! (general)

...I want it to have the biggest degree of protection possible. If that means the end of motors and tourists who are only willing to devote minimal time to the experience, perhaps in the long run, that is for the best.... First and foremost the Canyon should be protected for itself and all the non-human creatures that call it home. (general)

Perhaps if the NPS had been in compliance with the original proposed potential wilderness designation, i.e. not introducing the use of motorized boats for river patrol purposes, I would be more tolerant.... There is no reason for the continued use of motors: the idea of saving jobs does not import the same impact, to me, as that of saving and protecting the Grand Canyon... (guide)

Is the Canyon worthy of wilderness status?—Yes! Is the

River part of the Canyon?—Yes! Just because some enjoy motorized trips and others profit by them isn’t just cause to compromise the Wilderness by their use. Jobs come and go, that shouldn’t be the basis of establishing gc as a Wilderness! (guide)

Because it’s *the* Grand Canyon, not *a* Grand Canyon. No more self-protecting compromising. It’s the right thing to do. (guide)

After many years of guiding people of almost all ages and many physical abilities on Class IV Wilderness rivers (incl. the Grand Canyon), and after photographing a splore trip on the Yampa with several paraplegics, I am skeptical about the motor outfitters’ claims that their trips allow people to experience the river who wouldn’t otherwise be able to partake in an oar trip. (guide)

We need to preserve the Canyon and Corridor for now and the future. I have jumped out of airplanes and run the n.y. Marathon and at 50 my great adventure and self-awareness has come from the beauty and riches of rafting the river and hiking the inner canyons. These opportunities are rare—they must be preserved. (general)

I may never raft the river (without motors) but I find solace in the idea of a Canyon without mechanized intrusion. (general)

I don’t think economics should dictate (resource management should!), but it’s important to know the economics because that’s what’s driving the other guys. (general)

The Canyon has been under study for Wilderness designation for years, while public uses have increased dramatically. It has been managed primarily for recreation rather than for Wilderness values. (general)

We owe it to this noisy, commercialized world. There are so few places that could qualify as Wilderness left, that we need to look past our tunnel vision at the grander view. (guide)

Wilderness offers the best, most comprehensive protection for the Canyon.... The long term benefits of protections we would achieve from Wilderness designation far outweigh other issues. The degradations we have seen since Wilderness management was trounced in the early ’80s will only worsen. (guide)

The motorized “Wilderness” being sold in the Canyon today is little more than a multi-night Disneyland ride. If

not the Canyon, then where else can the American public be able to find the true river Wilderness that Congress intended to preserve in 1964? We owe it to those who will follow us to preserve that which we cannot replace. (general)

I feel that full Wilderness classification for the Canyon is the only way to ensure that the Canyon remains unspoiled for generations to come. I am fully aware of the pros and cons of the motor vs. oar debate and I have run several motor trips through the Canyon. I am not anti-motor.... I think that anything less than full Wilderness classification will weaken Wilderness classification of other areas. I live and ranch adjacent to the Flat Top Wilderness in Colorado and an analogy I see would be the opening of a road or railroad through the middle of the Flat Tops and designating that as a non-wilderness or potential Wilderness corridor. The precedent that sets could be very dangerous. (guide)

Option B: Full Wilderness for the canyon, Potential Wilderness for the River Corridor (26/41/36)

There is still some understandable confusion about the concept of Potential Wilderness. While most people who supported the concept understood that it does mean the ultimate removal of motor rigs from the river, others still see it as a way to have motors forever and still have a Wilderness on the river. Potential Wilderness is a way to defer the whole question to a later date and most probably to Congress, and it buys time to try and work out solutions that please most, if not all, people, but the whole point is to ultimately remove motorized travel from the river corridor.

Some of the responses we received found this solution to be preferable because it allowed time for other solutions and options to be developed in a phase-out of motors. Other people believe that a Wilderness with motors grandfathered in or allowed indefinitely is the best way to go. Some people were concerned about leaving anything up to Congress, others felt that putting the decision off until later is just easier, and therefore preferable. Many people expressed support for the motorized rafts, some also said that sacrifices should be made in order to protect the Canyon and the River. Many people asked whether the river could really ever be a "true" Wilderness with Glen Canyon Dam in place.

I believe that the Canyon is a gift to mankind and intended to be kept as close to natural as possible. Thus my "ideal" would be to have a designation as full Wilderness for Canyon and River immediately. But then my empathy for fellow citizens who have been making a living with motorized boats kicks in. And then the thought of transition becomes important. With planning and commitment it is very plausible that no jobs or businesses be lost. My family has been in business for

generations and one thing we have learned is that things change. And often, what is perceived as potentially debilitating can actually end up more profitable in the end. Creativity and progressive outlooks can produce amazing ways to deal with change when one really decides to take on the challenge. It seems that...Potential Wilderness designation for the River would accommodate this possibility. (general)

Motor boatmen need time to convert to rowing. This seems like a good way to allow them to do so. (guide)

This was not an easy choice, because in the long run I believe motors help protect the Canyon by moving many people through quickly so they can say they did it without causing the traffic jams and enormous damage that oar/paddle only access would cause. At least "B" allows motors to continue while offering the Canyon Wilderness protection—a must. (guide)

It's time we started looking toward the future and thinking about use, how much it has increased. Getting rid of motors doesn't need to mean fewer jobs or less money for the outfitters—it just means we need to think carefully about crowding and congestion. Giving everyone access in their desired way ends up making it mediocre for everyone... (guide)

My intimate inner canyon experiences have all been commercial oar trips.... Intellectually, I can make an argument for full Wilderness immediately. Practically, I am compelled to allow time for this to be achieved. My management preference would be a gradual increase in the oars-only weeks, a decrease in split trips and an expansion of the Wilderness concept to include the skies above the Canyon.... Surely the majesty of the Canyon and our love for it should impel us humans to give it back its freedom to be wild. With that as the established goal the decisions along the way become focused on the health of "the place"—and that is where the emphasis belongs. (general)

My choice of Potential Wilderness for the River corridor is to allow time to figure out how best to meet the needs of all who love this place. (general)

Ultimately, the Grand Canyon and the Colorado River should be protected as Wilderness for future generations. This option allows for a sane and slow phase out of motorized rafts if people decide that this is necessary. Designating the river corridor as non-wilderness permanently would weaken Wilderness protection around the country. (general)

Protect what we can, as soon as we can, and then work to resolve the remaining issues. This situation is too complicated to await a Grand Solution. (general)

We should protect what's left without creating major hardships for people working with the motors now. Also, the "quickie" trips that the motors allow do expose people to the Canyon who wouldn't otherwise see it from the River so it's a hard question. (general)

...There is only one Grand Canyon and we are responsible for protecting it the best we can.... I feel that full wilderness for the Canyon and Potential Wilderness for the river provides the best of both worlds. It would give the Grand Canyon the protection it needs and deserves with time to resolve the issue of motorized travel in the river corridor. (guide)

I think the river corridor should be a potential Wilderness for now with motors to be phased out over 10–15 years except for a few weeks (2–3) a year when the truly physically disabled people could go using motors. (general)

...does each Wilderness area have to conform to the same rules as the next? Aren't there some Wilderness areas where motorized traffic is allowed on a limited, controlled basis? Can't each Wilderness area be managed in a way that allows for the intrinsic values and usages of the area? Can't a niche be carved for motor traffic on the river? (general)

Non-Wilderness designation for the river corridor is too vulnerable. If we are not able to achieve the partial protection we desire in the present state of affairs, you can be sure that it is going to be next to impossible to regain protection if we let it go now. (guide)

Federally designated Wilderness is an artificial construct which, sad to say, is now a necessity if we hope to preserve any bits of our world in anything close to its pristine glory.... The Canyon is one of the places that deserves our greatest respect and the highest level of protection—protection from the inevitable, creeping degradation that follows in the footsteps of too much of humankind. The issue of motorized vehicles in Wilderness areas is being battled over all 'round the country in various permutations. In the Rockies and Sierra it's over helicopter landings for backcountry skiing and here in Alaska it's about allowing snowmobiles into Denali Nat'l Park. And in every case, I have to say that the right things to do, the only thing that gives our kids and their kids any hope of seeing and experiencing what we have been fortunate enough to see and experience is to say no categorically to motors in Wilderness. These are the places where the price of admission has to be high. The price of admission is sweat and skill and knowledge, and maybe even some risk. If we "drop the price of admission" by allowing motors, whether they're outboards, helicopters, or snowmobiles, it's the Canyon, the mountains, the deserts, the tundra and all the wild things living in those

wild places that will suffer.... It's time we all acknowledge that quiet, or actually the lack of mechanical noises, is a dwindling natural resource and an increasingly precious one because of it.... The demand for trips through the Canyon will not go away.... The demand will continue to increase—there is only one Grand Canyon—it is the superlative river Wilderness experience.... The Canyon and the respect, care and reverence it deserves is by far the highest, most important factor to be considered in this choice, not a few businesses or even the employees of those businesses. (general)

...In trying so hard to offer variety you are eliminating the one unique thing the Grand Canyon has to offer: a true Wilderness river trip of substantial length. ...a proposed compromise...in addition to the late Fall, early Spring no-motor periods, add one or two designated periods during the primary season (of about 3 weeks each?) where the river corridor is run as a true Wilderness. This means no motors, lower usage levels, no helicopter exchanges, etc. (general)

Option C: Non Wilderness corridor for the river, Wilderness for the canyon (21/12/16)

The most common comments we received in this category stressed the importance of allowing motorized use to continue for the sake of variety and the less "able" passengers who wish to travel through Grand Canyon. Many people expressed concern over what would happen to crowding in the Canyon if all those motor passengers were placed on oar boats. A few people felt that the river was well protected enough, others said that motorized use in Grand Canyon is unique and should be protected as such. A few people responded that Glen Canyon Dam made the river non-Wilderness anyway.

One response rated the options in light of GCRG's stated goals, and found that, to him, Option C upheld our goals better than all the others, especially "celebrating the unique spirit of the river community" and "providing the best possible river experience." His main concerns revolved around the crowding and congestion that would occur with the loss of motors, and the loss of a unique part of the river community.

This option allows for the most varied categories of people to experience the canyon. Complete Wilderness designation eliminates the majority of our citizens from being able to "handle" the trip. (general)

...commercial trips and the present allocation do not promote a Wilderness experience. A large percentage of passengers I row down the river make unsolicited comments about the inappropriateness of motor powered boats. I personally can't imagine managing the present allocation without the use and schedule of motorized trips. ...what Wilderness would mean: Present

allocation would have to be drastically cut. Motors would have to be banned. The present idea of commercial trips would need to be changed. Satellite and cell phones banned and helicopter evacs limited to life-threatening events.... I cannot see any of these things happening. Nor do I really believe they need to in order to protect the Canyon. If protecting the river truly means "Wilderness status" and nothing else will do, then I am willing to give up my job as a river guide and advocate all of the above curtailments. However, it is more realistic to believe that there is a political/legal way to design a protection vs. use plan. (guide)

A two-boat Canyoners trip passes in 60 seconds. They all camp together. If this trip were oar powered it would take 11 or 12 boats minimum. If all trips were like this you could walk from boat to boat up and down the river. ...the amount of people in the Canyon at any one time would double if not triple to meet the demand because of slower trips. Now a person has a choice. (guide)

I feel things are good and getting better as they are—let's not try and drastically limit types of people and change things to fit some new definition. ...from my experience as a motor guide, people are genuinely affected by the Canyon—most say the best experience of their lives. I take a lot of folks down a year,...most would not have been able to have done a 14-day trip and many would not have been able to do hike out or in options. (guide)

The clientele on motor trips is totally different than oar trips—and they deserve to see the river, just as much as others. I compare the gc with Yosemite. The river is the road in Yosemite—same thing. There are plenty of other rivers in the sw to get a Wilderness experience. (guide)

I'm not really in favor of motor boats but I know they serve a big purpose in "shuttling" lots of folks down. I believe if they were phased out, allocation would need to be cut. I don't see that happening. What I would like to see is *very strong protection* for the river corridor (maybe create a type of protection for Grand Canyon itself) and allow motor boats, but...not year-round. (guide)

Motoring gc is unique. Nowhere else in the world can you do this kind of trip on a motor rig. Also to limit the numbers traversing gc...to a level consistent with Wilderness would deprive too many people of seeing the gc from the river. Also, bureaucratic Wilderness protection is contrary to the basic essence of Wilderness. (guide)

As much as I prefer row boats, I must concede that motorized boats remain the best means of transport for the masses. The commercial "greyhounds" move the most number of river runners, faster, and with less impact to campsites or side canyons used typically by

smaller groups/trips. Motor trips of short duration are more affordable to the greater public. (guide)

I was fortunate to take a 14 day raft trip and will always be grateful that I stumbled onto the raft trip rather than a motorized trip. However good friends of mine took the motorized trip and I believe the Canyon had as profound an impact on them as it did me. They would not have had the experience at all if it weren't for their motorized craft because of their initial fear of the river and rapids. It is important to reach as many types of people as possible to savor the impact of the Canyon. I believe only in that way will we be able to save what we have left. (general)

Option D: Remove the entire park from Wilderness consideration at all (8/2/5)

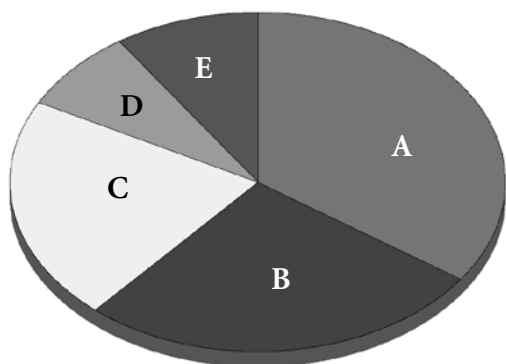
One outfitter responded in this category, so for ease of this particular set of numbers, we included that response with the guides. Most of these responses centered around support of motors, but not of removing the river from management objectives of the rest of the Park. While this may not be a very realistic option, we thought we'd throw it in to see what the response was.

The scariest words I know go like this: "I'm from the government and I'm here to help you." Leave things as is. (general)

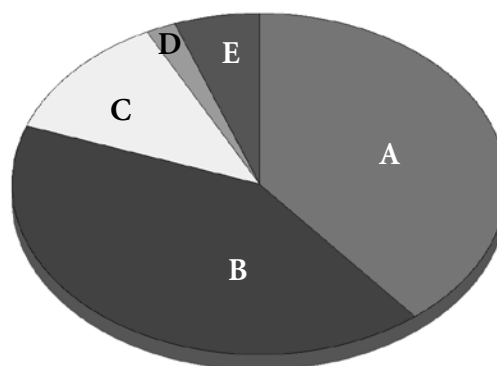
Please remember that as people become older they are not as able to cope with strenuous activities and sudden changes of lifestyles. So I believe that motorized crafts should continue operating in Grand Canyon so long as noise pollution remains at acceptable levels and they seem to be safer also. (guide)

I would be in favor of Option C but I don't think it will go anywhere. Grand Canyon should be managed in a way best suited to Grand Canyon without worrying about how it affects other potential Wilderness areas. I'm concerned that any Wilderness designation for the Park will eventually lead to the elimination of motors. (guide)

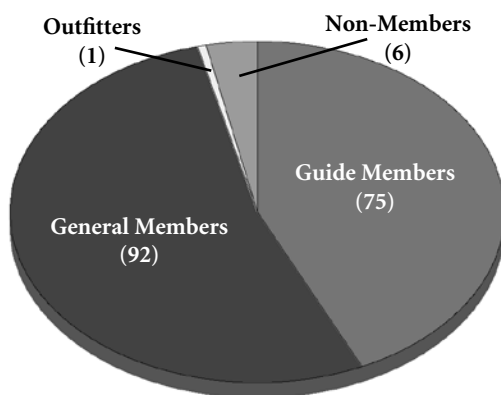
Wilderness designation is inappropriate and unnecessary. The river is used by far too many people to even approach the definition of solitude inherent in the Wilderness concept. Be that as it may, a lot of good comes from giving a lot of people the "Grand Canyon Experience." Wilderness precludes motors and motor use is an important part of the experience. The present mix of motor and oar powered trips allows for the current levels of use without trips getting in each other's way to any great extent. If all use was rowing, it would be a constant traffic jam of oar trips. All NPS and Science trips should be motorized. Much more cost effective than oar-powered trips. (guide)



Guide Member Responses



General Member Responses



Breakdown of Responses

Option E: None of these (10/6/7)

These responses covered a wide range. Some people just asked some questions about the whole issue. A few people suggested a Wilderness with motors grandfathered in for the river corridor. One respondent suggested just enforcing existing rules and regulations and not doing anything special. Still another suggested a compromise of motor use at the 1980 levels. One person asked how we could even consider Grand Canyon a Wilderness without re-introducing predators to the ecosystem.

Perhaps a compromise solution would be to allow motors at the 1980 level of use as a nonconforming historical use under Wilderness protection. This would still allow some faster trips for some folks, yet greatly reduce the motor impacts of today. At the same time, all helicopter services to facilitate shorter trips should be eliminated. (general)

I would strongly support any plan that called for no permanent structures to be built in the Canyon, no proliferation of motorized vehicles in the Canyon and the preservation of the Canyon itself, i.e. to leave it as it is. It is unrealistic to think we can reverse the erosion of Wilderness but it is realistic to try and preserve (or at least slow down the loss of) Wilderness. (guide)

Create a designation unique to Grand Canyon. It should allow for river and backcountry access to continue as they are today but restrict any further

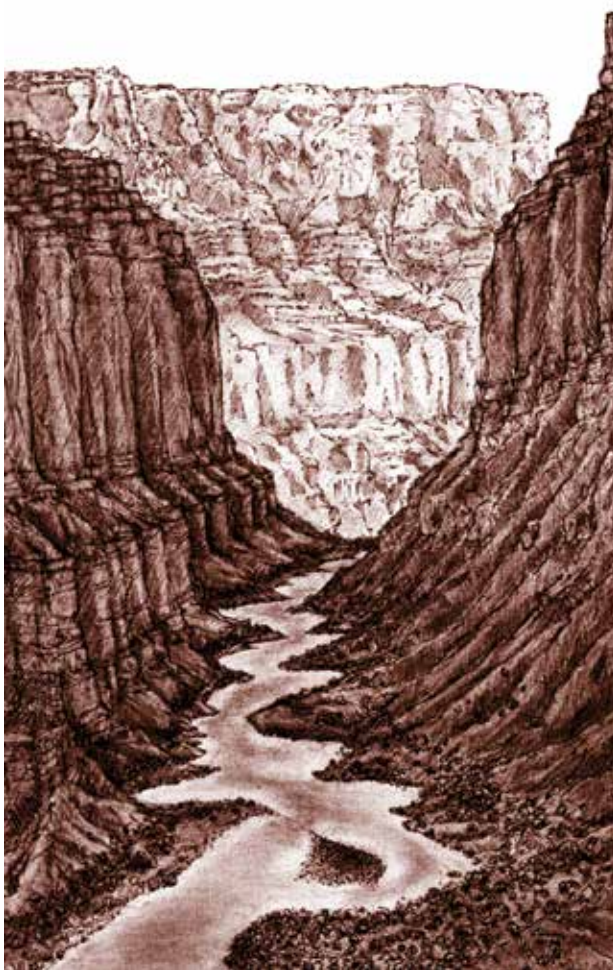
development or increase in use throughout the park.... If we are not going to consider the creation of a true Wilderness and fully restore the varied ecosystems of Grand Canyon, then perhaps we should accept that Grand Canyon, even with its fragmented wildness as it exists, has value to our society as a place of education and inspiration, resources that it can offer most anybody because it is so accessible. (guide)

...While I love the idea of Wilderness protection for the River, motor rigs can be grandfathered in. And should be! Historically motors were used in the first 100 [people]. Motors are providing a good trip.... No more changeovers. Adhere to the 40 miles a day rule. The Wilderness issue has certainly given us sights to shoot for but let's construct our own view of what's right for the Canyon and plateaus surrounding it. (guide)

...a precedent exists for retaining motors in the Wilderness, viz. the Frank Church/River of No Return, where jet boats and aircraft were grandfathered in. Thus, I take a position...motorized rafting...grandfathered in. (guide)

Instead of seeking Wilderness designation for the Park, varied interest groups, etc. might consider reaching out in a visionary process unique to Grand Canyon National Park that involves the tribes in the decision-making process from the very beginning that will manage not only the Park lands and river corridor, but also tribal lands in the best interest of all parties involved respectfully of their differences. (guide)

So, there you have it. Or at least some of it. A wide variety of opinions from your friends and fellow river runners, all expressing love for the Canyon, the River and the experience provided by a visit there. Which is exactly what we thought we'd hear. This wasn't a vote, or a popularity contest. It was a way of trying to put a finger on the pulse(s) of our membership.



So what do we do with all these responses?

Does this mean that GCRG will now head out with banners flying in an all-out campaign for —? No, it does not. We are still a community and believe that we can achieve more on all fronts as a unified community than as a divided one, and we did not receive a clear mandate for any one viewpoint. After a lot of discussion, the Board of Directors has come to the conclusion that we cannot support any one of the current positions in the Wilderness debate. Our responses showed us two things very clearly: many people support Wilderness for the Colorado River, and many people support motors on the river. Some people support both at the same time. Confusing? You bet. We've got a headache. So we will by necessity remove ourselves from this particular debate.

Is this going to make a lot of you happy? Absolutely not. We will probably get a whole pile of heated letters telling us what panty-waisted sissies we are now, just as we got similar input telling us we were scum for supposedly supporting removal of motors (which we did not). Perhaps, at some point, as someone explained patiently the other day, a decision is going to need to be made, and we will need to be on one side or the other. Perhaps. We will work on what we can without ripping the community apart.

We *will*, however, continue to be a forum for opinions on all sides of the issue. We may not be able to take a stance, but we believe that the issues and opinions should be aired. There have been a lot of issues that GCRG has not taken a stand on, drug testing and decommissioning of Glen Canyon Dam being two of the most recent and controversial. But you have seen articles and read discussions about them all. You may see things you disagree with, or agree with, or think are complete bull, poorly timed or poorly written, about Wilderness and other issues. We will continue to print them.

So what *can* we say? We can say that we support a management strategy that does not separate the river as a legal non-Wilderness corridor. We can say that we would like the river to have some form of protection greater than it now has, perhaps as a Wild and Scenic river, or some other status. We support a management strategy that no longer allows for increases in allocation and technology. We support Wilderness *principles* in management (even if we can't support Wilderness *designation*) for the river. And we support a dialogue, *any* dialogue, that will take all of us away from a polarized "us vs. them" stance and towards a discussion of how indeed we want this resource to be managed. We can also encourage you to write to the Park or to your representatives with your opinion, whatever that may be.

In the coming months, GCRG will try to be part of crafting solutions to some of these issues that work for the river and her visitors. We will take all the comments and suggestions and fears and concerns that you sent us in your responses and use them in our discussions. There are other important issues within the whole CRMP process that are still up for debate, and which we can and must still work on. The ultimate decision will be made in the offices of the Park Service or the halls of Congress. It may seem frustrating that we have to talk about "managing" this land as anything at all. But we have set foot on it—many feet—and it is up to us to make sure the place is something worth coming back to in the future, no matter what its legal designation is.

Grand Canyon River Guides





Dugald Bremner Memorial Scholarship

DUGALD BREMNER LEFT BEHIND a legacy of world class photography, an indomitable spirit of adventure and great humor. Dugald's legacy lives on in his images and the memories of his friends. It will also carry on in the Dugald Bremner Memorial Scholarship begun last fall at his alma mater, Prescott College, with over \$5,000 of memorial donations received from members and friends of Grand Canyon River Guides, Inc.

Dugald's parents have requested that the scholarship be restricted to students majoring in photography or adventure education, since both of those fields were so meaningful to their son. They hope the fund will continue to grow, and expect some significant gifts from some of the publications that featured Dugald's work. The first scholarship will be awarded for the Fall semester of 1999.

Gifts can continue to be made to the Dugald Bremner Memorial Scholarship fund. Contributions are tax deductible. Please send checks made payable to Prescott College to: Development Office, Prescott College, 220 Grove Ave., Prescott, az, 86301. It's a great way to honor our friend.



Mary Ellen Arndorfer

Giving Thanks

IT BEARS REPEATING that Grand Canyon River Guides, Inc. is a volunteer, non-profit organization, and as such, we can only succeed in our good deeds with the generous assistance from our members and friends. Thanks to everyone who recently renewed their memberships. We'd also like to specifically recognize and thank:

- **The Grand Canyon Conservation Fund** — the non-profit, grant-making program established by Grand Canyon river outfitters, for awarding us \$8,000 for the Adopt-a-Beach, GTS and Adaptive Management Work Group programs. This is a significant increase over last year's grant and does not include numerous donations of equipment and other resources from individual outfitters throughout the year.
- **Grand Canyon Monitoring & Research Center** — \$4,000 grant for Adopt-a-Beach.
- **Newman's Own Organics** — \$1,000.
- **Brown Foundation** — \$6,000 for BQR production.
- **Anonymous** — \$1,000.
- **Michael Wehrle** — \$1,500.
- **McJunkin Corporation** — \$2,000.
- **Garth Marston** — stock contribution valued at \$2,046.
- **Don Briggs** — \$1,104 proceeds from his River Runners video.
- **Teva Sports Sandals, Inc.** — \$500 for the Fall Meeting, plus t-shirts and sandal gift certificates for guides.
- **Anonymous** — donation of stock for The Whale Foundation.

In addition, thanks to all who donated in response to the year-end fundraising drive, which produced over \$5,000 in donations, as well as all who so generously contribute throughout the year. We couldn't do it without all of you!

Grand Canyon River Guides



Songs of the Humpback Chub



We come from that muddy river, funny looking and nearly blind,
Colorado River *Gila cypha*, sipapuvani of the humpback kind,
We survived the ice age floods and droughts when the river was low,
But the trouble really started when the Bureau built the dam, thirty-six years ago.

Glen Canyon Dam turned the Colorado River from a warm muddy raging stream,
To a regulated river with daily fluctuations and a trophy trout fisherman's dream.
But the changes haven't been all bad for us fish with the Colorado cold and clear,
And we love those shrimp-like scuds as much as boatmen love their beer.

Bring back the river, set that muddy water free,
We want to frolic and spawn our whole lives long
In the shade under Whaler's boat,
In the sky blue waters at the mouth of the Little C.

Now we're caught between the lies of the river compacts and the lawyers of the crsp.
Selling our natural heritage for hydropower subsidy.
The only way the barons of water and power in the Colorado Basin states
Want to see us is filleted on a sesame bun with tartar sauce on their plates.

But we've got friends in the government to help us out of this mess,
They study us with radio implants, stomach pumps and trammel nets.
As the fishery biologists fight over their portions of the research funding dish,
The Arizona Game and Fish Department has done everything that you can think of to a
funny-shaped fish.

Bring back the river,
We'd beg you on our knees (but we don't have knees)
Don't walk all over our muddy water home,
Set the Colorado free.

For all the money spent studying us, we could use a couple extra grand,
We want to buy us a humpback time-share condo aquarium in Disneyland.
Bony and the Rounder have a hot scam going on a worm ranch east of Grants,
And Lucy wants the money to try out one of those silicon hump implants.

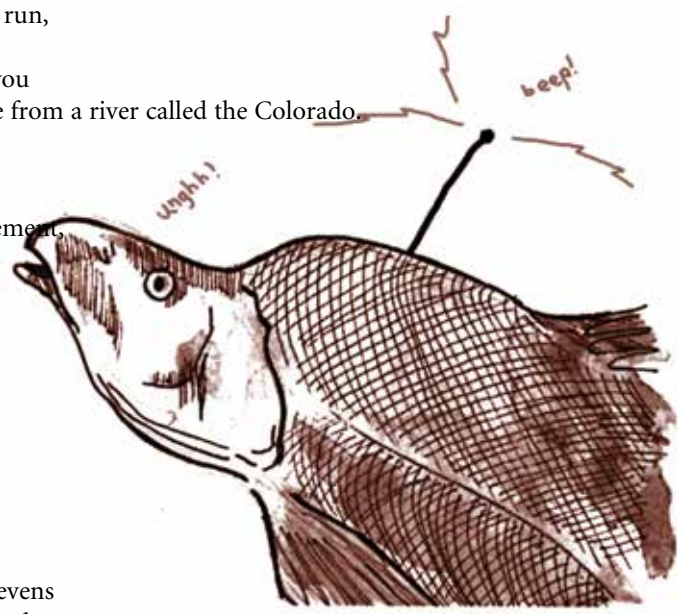
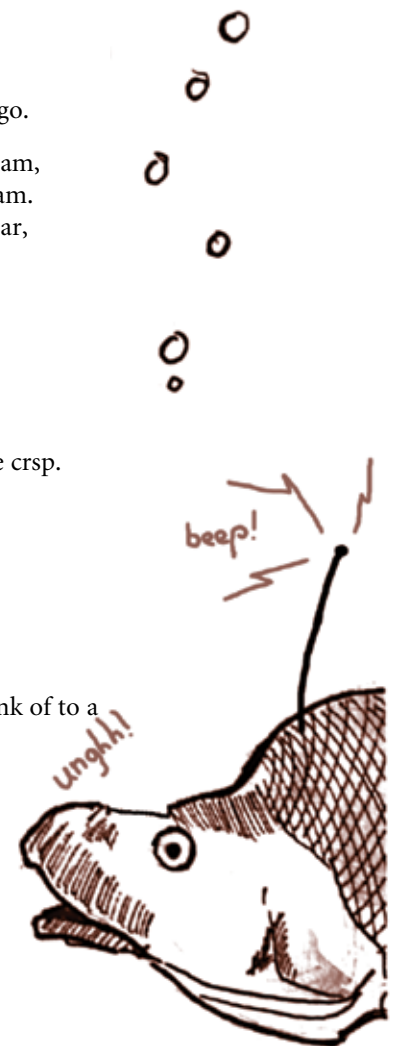
To all our friends on the water and the rim above river mile sixty-one,
We wish you all a long, full life and a happy spawning run,
But we are fish out of water, and now it's time to go,
And the songs of the humpback chub are brought to you
Straight from the heart of the wild Grand Canyon, live from a river called the Colorado.

Bring back the river,
Set that muddy water free
We need floods, warm water, and adaptive management,
Set the Colorado free.

Bring back the river, set that muddy water free,
We want to frolic and spawn our whole lives long
In the shade under Whaler's boat,
In the sky blue waters at the mouth of the Little C.

Set the Colorado free,
Set that muddy water free,
Set the Colorado free.

words and music by Larry E. Stevens
chubs by David Edwards



The Things Boatmen Do

The Doing of the Thing, the Brief Brilliant Whitewater Career of Buzz Holmstrom, by Vince Welch, Cort Conley, and Brad Dimock; Fretwater Press, 1998

Many of us who run rivers have heard of Buzz Holmstrom. In Belknap's Grand Canyon River Guide, (Westwater Press, 1969), we had our introduction to Buzz Holmstrom on the first page, the fifth paragraph, with the short sentence, "Buzz Holmstrom built his own boat and made the trip alone." That line, and Haldane "Buzz" Holmstrom's picture across from mile 127 on the map, put Holmstrom in the history of the canyon between the Hydies and Norman Nevills. For the majority of guides, boatmen, boatwomen, and passengers, that was the extent of our knowledge about this colorful character.

Thanks to this new publication, the gaps in our knowledge about this pioneer river runner are filled. The book is well researched, referenced and indexed. It is written with a style that belies the multiple authors. It reads easier than the run at Nankoweap Rapid. In chronological order that takes you from his family's roots to his untimely death, the authors reveal the complexities of a simple man, involved with extraordinary circumstances, in an age of discovery and triumph.

Buzz Holmstrom had exposure to boat building, boats, and water throughout his childhood. Between their daily struggles to put food on the table and keep a shelter over their heads, the family "messed around with boats." So when Buzz decided he wanted to run the Rogue River in 1934, he just built himself a boat, hauled it over to the put-in with a ten dollar car, and shoved off. The next year he built another boat and went on the Rogue again, and the year after that he ran the Salmon. In 1937, he built another boat and put on the Green, at Green River,

Wyoming, and rowed all the way through to Hoover Dam. Because of when he went, his reluctance to do more portages, and the filling of Lake Mead, he became the first and the last person to run all the rapids on the Colorado between Lees Ferry and Pearce Ferry. Furthermore, he did it solo.

The biography continues with the other accomplishments of a man who seemed ill-suited for his fame. Buzz was hit hard with the same struggles boatmen have always had readjusting to life off the river. The authors rely on letters and journals, and for the most part avoid speculation in caulking the cracks in the documentation

that supports his life history.

The authors add perspective to the account by including contemporaneous world events as a backdrop to Buzz's activities. The geography of the rivers is explained enough to appreciate the challenges Buzz faced, and the technological aspects of running rivers in the late '30s are made clear. The book leads the reader through the period with the ease of floating the San Juan in high water.

The river community is indebted to Welch, Conley and Dimock for this meaningful contribution to our libraries. The book is a "must read" for all boatpeople, guides, history buffs, boat lovers, river runners, river lovers, and

anyone else with a penchant for a good biography.

*Dr. Gary D. Call
Blackfoot, Idaho*

Available at 10% discount to members. See page 46.

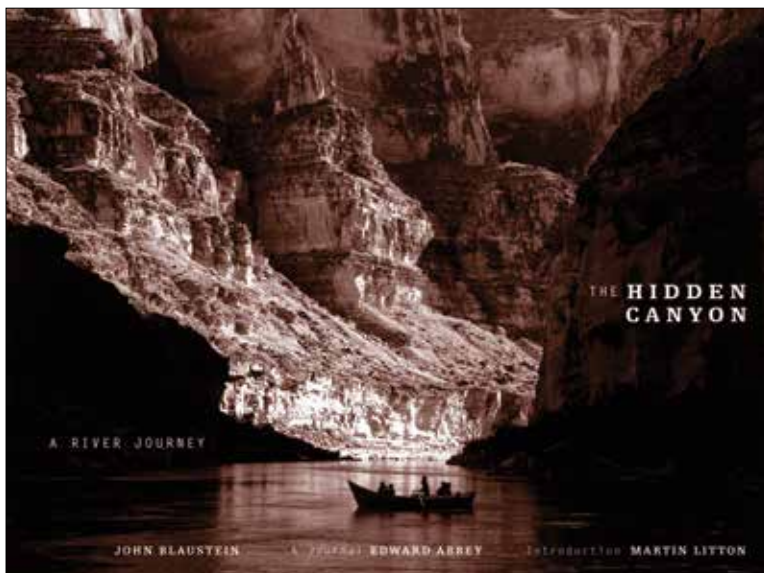
Excerpt

In a letter to Julius Stone, Buzz cut to the essence of his dilemma.

"I'm all in a turmoil inside — I know that if I ever expect to have anything or amount to anything I should settle down here and now. But I just naturally don't seem to be able to — my feet are itchy and I have a desire to go some place — anyplace — perhaps South America on a freighter [as an] ordinary seaman — However it seems as though any place I can think of is just a poor substitute for the River. I'm hoping before too many years I may have a good logical excuse to spend more time there — and I guess I'm not the only one who has felt that way about it."

Holmstrom had the classic symptoms of a malady boatmen have suffered ever since: withdrawal from the incredible elation of the River. The River, where everything is natural, scenic, and simple, where problems can be solved, the phone never rings, and goals are within immediate reach. To have discovered that world, lived in it, understood it, and savored it — then be compelled to leave it, with no certainty of ever returning — can inflict a peculiar strain of depression.

The Hidden Canyon



A RIVER CLASSIC GOES BACK TO PRESS. John Blaustein's book of Grand Canyon photographs, with a journal by Edward Abbey, will be re-released this spring with twenty-eight new images and a new introduction by Martin Litton. A few choice excerpts follow...

In time the tug of wilderness would be felt by more and more people, and by 1950 the total number of persons who had floated the river hit one hundred. Historian Dock Marston told us that my wife, Esther, and I were numbers 185 and 186 (the order depending, of course, on who was at which end of the boat at the finish line); that was in 1955, so the snowball was beginning to roll. But even now, with twenty thousand or more people spread over a distance of some two hundred miles in a river-running season lasting seven or eight months, only the most reclusive among us will feel that the glorious river trail through the Grand Canyon—easily the longest, wildest, grandest white-water route in the world—is overcrowded....

...In the long-term perspective of a canyon millions upon millions of years old, carved inch by inch down into a rising plain of which the youngest rocks—the upper Permian surface formation we call the Kaibab—are a couple of hundred million years old and the oldest—the mysterious flinty schists of the innermost gorges—still glitter with the dawn-light of Creation, it seems almost funny to worry about what we do to it. The proud dams above and below, those ugly concrete plugs Ed Abbey would have liked to have blown up, are at worst fleeting aberrations. And although there is much concern over what damage we may be causing in the canyon by going through it on rafts and in boats, there seems to be room for agreement that we are scarcely leaving enough twentieth-century artifacts and drowned corpses behind to make a decent fossil record of our times in the siltstone forming at the bottom of Lake Mead.

If for nothing more than pleasure, instruction, and inspiration for the transitory race called human, we should be determined to sustain the river experience in the Grand Canyon. Few things in this world are really



Jeff Clayton in the old hole at Crystal Rapid, mid-1970s

beyond description; it is safe to say that the exhilaration in approaching, entering, and running a big Grand Canyon rapid in a small boat is one of them. Add to the scores of rapids the compelling subjects for contemplation (including, at times, the responses of your fellow wayfarers, and yes, even the sandstorms, rainstorms, and inevitable cuts and bruises) and there is nothing more, with the possible exception of a hot shower now and again, that anyone should ask of life...

Martin Litton
from the introduction

Water topples upon us, filling the boat in an instant. The force of the river carries us through the first wave and into a second, deeper hole. . . . I think I can almost see bedrock bottom. The third wave towers above us. Far above. The Great Wave. Heavily our water-loaded boat, askew, climbs up its face. Never makes it. As the wave hits us from the portside our dory turns over with the grace, solemn, inevitable certainty of disaster. No one says a word as we go under.

Edward Abbey
The Hidden Canyon

Discount to GCRG Members

JOHN BLAUSTEIN is giving GCRG members a 15% pre-publication discount on **orders placed before May 1, 1999. The book will not be available until April.** Softcover \$19.95 (\$16.95 to GCRG members). Hardcover \$35.00 (\$29.75 to GCRG members). Postage is \$3.00 for the first copy and \$1.00 for each additional copy. California residents add 8.25% sales tax. Please send check or money order to: John Blaustein, 911 Euclid Avenue, Berkeley, ca 94708; 510-525-8133; fax: 510-525-7936; e-mail: john@johnblaustein.com. Signatures/inscriptions on request.

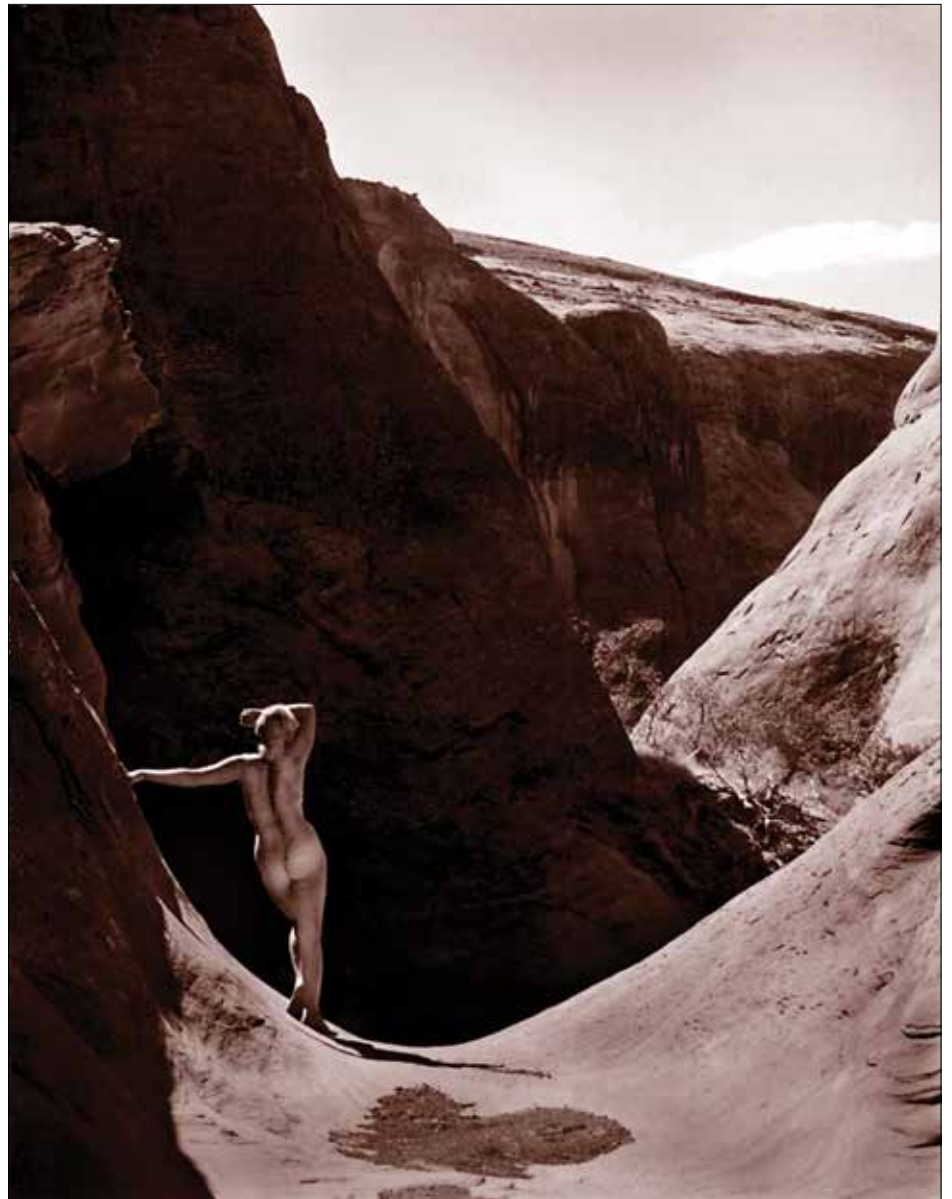
All Her Rivers Are Gone

IN *All My Rivers Are Gone*, Katie Lee, an aspiring, young Hollywood performer in the 1950s, falls suddenly, unexpectedly, passionately in love. Not with a man, nor even a woman, but with a place: Glen Canyon, on the Colorado River. When childhood friend Tad Nichols invites her on a Grand Canyon trip, she is smitten by the river. But it is another year before she meets her true love, as she floats the San Juan River and enters Glen Canyon.

With a combination of contemporary narrative and journals of her many expeditions, Katie takes us through the initial flush of first love, to an infatuation overwhelming her mind and body, and on to the inevitable heartbreak as Glen Canyon is snuffed out before her eyes by Glen Canyon Dam. As she looks on helplessly, the reservoir rises, killing her beloved river canyon by sacred canyon, mile by irreplaceable mile. Curiosity, love, wonderment, and delight; foreboding, disbelief, horror, fury; finally sorrow, heartbreak and a conviction to neither forgive nor forget, keep this love story moving, much as it has kept Katie vibrantly alive when others her age have faded or passed on.

In Glen Canyon, Katie Lee found her love requited, found a peace and perspective she had lost in her other life in the limelight. As its end approached, Katie vowed to memorize and keep the dying Canyon within her, resolutely returning to its deathbed again and again during its final days. She has remained true to her love—her rage has simmered for some forty years.

In *All My Rivers Are Gone*, she has reconjured the heart of the canyon country, complete with its subtleties of light, its sensual forms, its erotic canyon sinuousities, down to the giggling, gurgling, sighing voice of the river itself. For those of us too young to have known the Glen, she paints a vivid and irresistible portrait of her lover. And it



is only through this meticulous recreation of the Glen as a living, breathing entity that we are able to share her outrage and horror in its needless death—the deliberate drowning of an innocent Canyon, the pointless crucifixion of a gentle, loving, and magical river.

Now Katie, a devout Pagan, and her audience await, like Christians awaiting their entombed Christ, for the rolling back of the stone, the voiding of Glen Canyon Dam, the resurrection of what was and will once again be, the salvation of the human soul.

Brad Dimock



The Next We Three Trip, October 8-9, 1956

... The walk up next morning was chilly, so we wore jackets and pants, changing to shorts at the pool.... Walls like rippling blue-grey veils seemed to move with us as we spiraled upward through that slender passage, touching both sides with arms outstretched. Our muted voices reverberated, and our footfalls beat a drumlike ring on the sand.

Fifty yards...and it ended.

We leaned against a stone teepee one hundred feet tall, its smoke hole revealing pink walls five hundred more above that. No sound but our breathing. Had a human stood here before? Prehistoric peoples' intimacy with the canyons made it possible. Still, there were no other steps up the wall and no way in except to fall from above.

"I think we're the first," I breathed. "What a gift!"

Standing in the twilight bottom of that bowl of stone flooded the senses. Touching the velvet walls gave me a sensation of being in the timeless womb of the Earth Mother. I whispered my thought:

"This is the first holy place I have ever been."

Halfway back we noticed a deep, worn-to-velvet sluiceway. Eyeing its track upward we saw a beautiful little arch, a skylight to the outer gorge, where the water actually comes from. Millions of years ago it was just a pothole. When we walked up a talus slope to take pictures, we could see where the canyon's old watercourse ran before it broke through. Lying on our backs, we marked the eons of time, felt the earth turn, walked down our renamed canyon, Little Arch, very satisfied with our venture.

Little Arch—May 1967

I had just passed beneath it—recognized the sluiceway it formed, or I wouldn't have had a clue. The Little Arch was but ten feet overhead. Okay, I was halfway there. When the walls began to close in...I cut the motor.

The silence rang.

No wake, no wind, no whisper of a breeze. Above the water, a brine line rose higher than my reach and was covered with blooms of dried algae. Sunlight shone almost directly down, lighting the green algae-covered slickrock underwater—I could see into the depths at least a dozen feet. I dove off the bow, down about six.

Yes, there it was! The light, perfect!

It shone through the smoke hole and against the slanting walls of the stone teepee where we had stood in the twilight bottom of that bowl of the timeless womb of Mother Earth—the first holy place I had ever been. We felt we were the first to see it.

Certainly, I was the last.

Katie is offering a 10% discount to GCRG members:

Send a check or e-mail her (katydid@verdenet.com) and she'll invoice you. Signatures available on request. Katie has also released two cd's—one of river songs, the other of book readings interspersed with songs. Serena Supplee's artwork is enough to make you buy all three.

Hardcover book \$32 ppd. (\$28.80 to members)

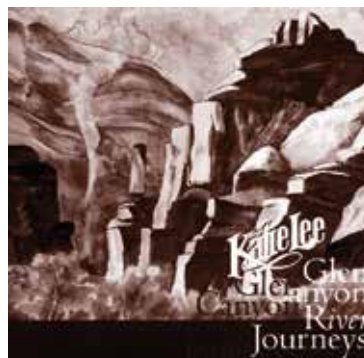
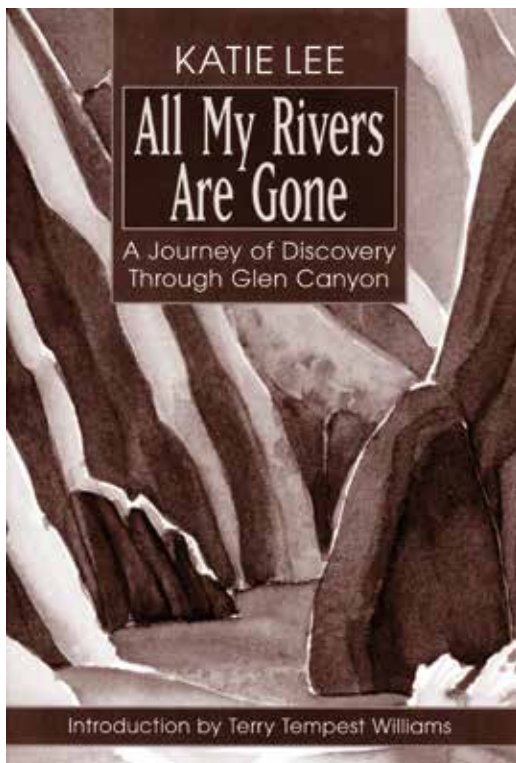
Soft cover book \$20 ppd. (\$18.00 to members)

Cd's 18 ppd. (\$16.20 to members)

Katydid Books & Music

Box 395

Jerome, az 86331



Glen Canyon River Journeys



Colorado River Songs

Grand Canyon Supergroup

Six Unconformities Make One ‘Great Unconformity’ A Record of Supercontinent Assembly and Disassembly

YOU HAVE ALL SEEN the Great Unconformity in the Grand Canyon, just as John Wesley Powell noticed it in 1869 on his pioneer voyage. This geologic feature is a dramatic break in the rock record. Below this feature are older (Paleoproterozoic) igneous and metamorphic “basement rocks;” above are younger (Phanerozoic) layered sedimentary rocks.

In most parts of the Grand Canyon, and in fact, throughout much of the southwestern u.s., the Cambrian Tapeats Sandstone forms the layer just above the unconformity. One such place is Blacktail Canyon, where the Great Unconformity represents about 1.2 billion years of missing time (1.75 Ga (billion year old) gneiss is overlain directly by 0.5 Ga sandstone). This amount of time adds up to 25% of Earth’s history! What went on in the Southwest during this vast time gap?

Geologic Age	Time Interval (Ma=Million yrs)	Duration (in millions of yrs)
Cenozoic	65–0 Ma	65
Mesozoic	251–65 Ma	185
Paleozoic	544–251 Ma	193
Neoproterozoic	1000–544 Ma	456
Mesoproterozoic	1600–1000 Ma	600
Paleoproterozoic	2500–1600 Ma	900

Luckily, the Grand Canyon Supergroup records parts of this history and offers us a look into a time when very significant changes were happening on our planet. During Grand Canyon Supergroup time, a hypothesized supercontinent called Rodinia assembled at about 1.1 Ga, and then broke apart around 0.75 Ga. The first life forms with a nucleus, single-celled creatures called Eukaryotes, were becoming more diverse, testing the waters for their future evolutionary extravaganza known as the “Cambrian Explosion.” Changes in global seawater composition reflect complex changes in climate, tectonics, atmosphere, and biosphere.

Piecing together puzzles with missing pieces

In geology, perhaps more than some other natural sciences, researchers are given only pieces of the puzzle. We use the concept of ‘multiple working hypotheses’ when attempting to decipher the fragmentary record of the ancient geologic past (Chamberlin, 1890). By using this method, the scientist proposes different hypotheses,

which try to explain all the available observations. These hypotheses must be consistent with the physical processes that we observe in the present, and assume to have also operated in the past. As new data become available, some hypotheses will be discarded and some become stronger and may be advanced to “theory” status. Hopefully, one hypothesis will ultimately represent the best and most logical explanation of those posed.

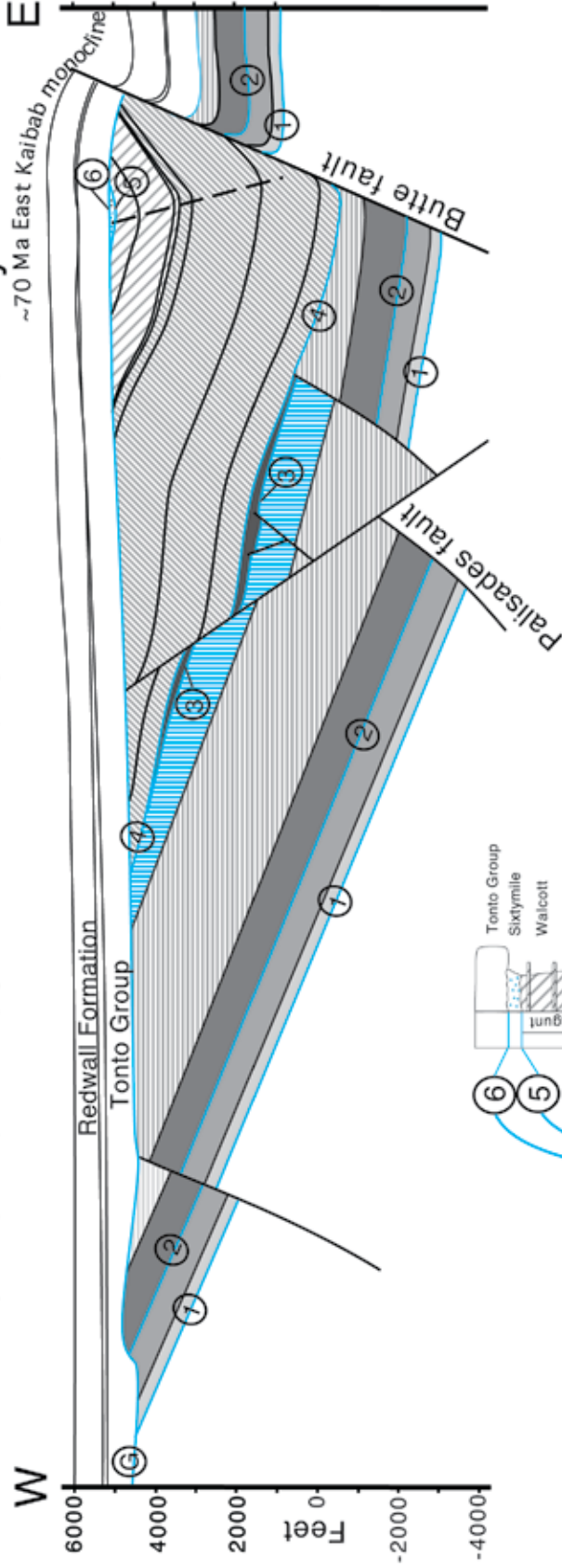
Meet the Grand Canyon Supergroup

We know from Brad Ilg’s research that the Paleoproterozoic basement rocks in the Grand Canyon area were down at depths of 20 km during deformation and metamorphism at 1.7 Ga (Ilg and Karlstrom, 1997). These middle crustal rocks probably remained at great depths until 1.4 Ga, then they were uplifted and exposed at the Earth’s surface after about 1.3 Ga. Sometime after erosion had exposed these basement rocks at the surface, low basins developed on the continent and began to fill with sediment—the Grand Canyon Supergroup was born. The Grand Canyon Supergroup is dominantly layered sedimentary rock, with lesser amounts of igneous rock in the form of basaltic sills, dikes, and flows.

There are four sequences of strata within the Supergroup that are bounded by unconformities: the Unkar Group on the bottom, the Nankoweap Formation in the middle, the Chuar Group above, and the Sixtymile Formation at the very top (see figure). Each sequence is distinctive, because it is made up of different combinations of sedimentary rock types, and because it is separated from the other sedimentary sequences by unconformities (see figure).

Radiometric dating of minerals in the Vishnu Schist and the Cardenas Basalts indicates that the Unkar Group is Mesoproterozoic in age, and was deposited between about 1.25 Ga and 1.1 Ga. Few firm age determinations on the Chuar Group exist due to a lack of well-dated igneous material within the sedimentary rock-dominated sequences. However, dates from the underlying Cardenas Basalt of 700 to 900 Ma may date Chuar sedimentation and tectonism (Larson, 1994). This estimated age (700-900 Ma) for the Chuar Group is also supported by microfossil assemblages, including *Chuarina circularis* and *Melanocyrrillium*, which are globally recognized in strata of the same age.

Unconformities "within" the Great Unconformity



East-west cross-section showing the Grand Canyon Supergroup, Butte Fault, and Chuar Syncline in the area of Lava-Chuar Canyon.

Unconformities

(and the approximate amount of time missing at each)

Great Unconformity (1200 m.y.)

1) basal Unkar (400 m.y.)

2) Hakatal/Shinumo (<50 m.y.?)

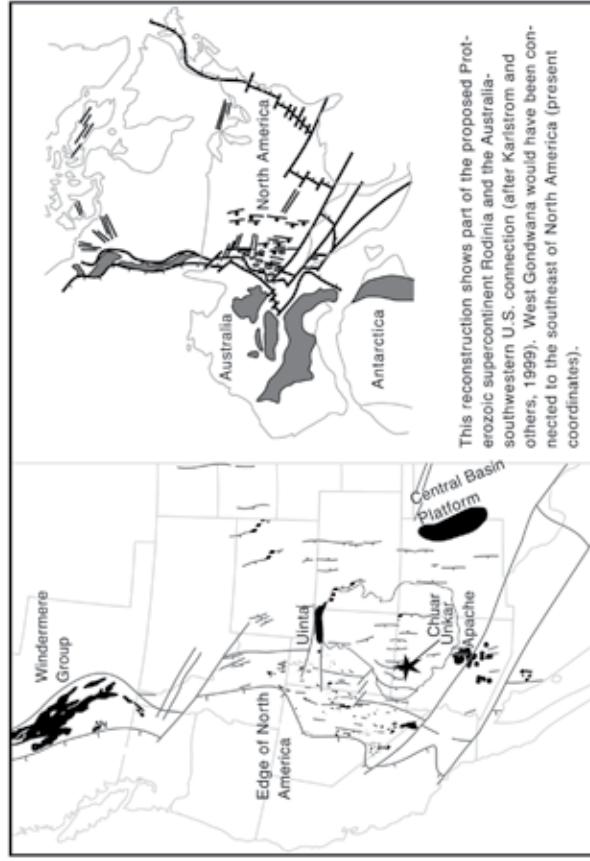
3) basal Nankoweap plus within Nankoweap (200 m.y.?)

4) basal Chuar (<100 m.y.)

5) basal Sixtymile + within Sixtymile (100–200 m.y.?)

6) basal Tapeats (100 m.y.?)

Note that ? = guesses



**Unkar Group and Nankoweap Formation:
Record of Mesoproterozoic
(1.1 Ga) NE extension and NW contraction**

The Unkar Group is divided into five formations: the Bass, Hakatai, Shinumo, Dox, and Cardenas Basalt (Hendricks and Stevenson, 1990, and references therein). This sequence of strata is ~6800 feet (2073 meters) thick, and is quite variable in rock type. The Bass Limestone contains a conglomerate at the base (Hotauta Conglomerate) and limestones, dolomites, and a few volcanic ash layers make up the rest of the unit; the Hakatai Shale is predominantly made up of shale, mudstone, and sandstone; the Shinumo Quartzite is a wall of sandstone and quartzite; the Dox formation is made up of shale, mudstone, and sandstone, and rare stromatolite beds; and the capping Cardenas Basalt is interbedded with the uppermost Dox Formation (Ochoa Point Member) (see figure). These strata collectively record a long (?) period of deposition along a tide- and wave-affected, fluctuating marine shoreline. This transgressing and regressing shoreline was fed by a river system, and was associated with an outpouring of basaltic lava during the (preserved) close of Unkar time.

The Nankoweap Formation is a 370-foot (113-meter) thick cryptic unit that comprises sandstone and lesser amounts of siltstone, shale (rare black shales), and mudstone (Elston and Scott, 1976). This formation has been informally subdivided into an upper and lower member. This is based both on variations in grain size (the lower member is finer than the upper member), but more importantly by an angular unconformity that separates the two members and signifies tectonic activity during Nankoweap time (Elston and Scott, 1976).

The Unkar Group is only preserved between river miles 53 (2 miles up Nankoweap Canyon) and 137. It exists in fault-bounded, down-dropped blocks, where it was protected from erosion prior to deposition of the Tapeats Sandstone (see figure). We can piece these fragments together to decipher some aspects of the Mesoproterozoic tectonic and sedimentary history of the Grand Canyon region, but the original extent and distribution of the sediments and the shape of the basin(s) remain unknown.

Intimately linked with Unkar sedimentation and basaltic magmatic activity are faults that appear to have been active during Unkar and early Nankoweap time. These faults apparently record a period of ne-crustal stretching and basin formation that overlapped in time with nw-crustal shortening that was caused by the Grenville orogeny (mountain building event) to the southeast in the Texas region (see regional discussion).

Contractional faults horizontally shorten and vertically thicken a section of rocks. These Proterozoic reverse faults and monoclines, along which nw–se

crustal shortening occurred, angle northeast and are exposed in Bright Angel, Bass, Vishnu, and Red Canyons (Sears, 1973). Structures of this type and age are known only in the Unkar Group and older rocks, suggesting that this type of contractional deformation is restricted to Unkar age.

Extensional, or “normal” faults, form during horizontal stretching of the Earth’s crust. A family of faults that cut across Unkar strata angle northwest (see figure). Jim Sears (1973) suggested that Unkar sedimentation and magmatism were synchronous with both ne extension and nw contraction. We agree, and our new work emphasizes that Unkar age extension was significant, regional in scale, and different in style from Chuar age extension, described below.

The Palisades Fault (exposed in Palisades Canyon and at the Morning Star mine—mile 64) is a key Unkar age normal fault. Unkar strata downriver of the fault tilt to the northeast toward the Palisades fault. This is not the case for the overlying Chuar Group, exposed in Lava Chuar Canyon. Instead, Chuar Group strata are intimately linked to the north-south trace of the Butte fault, as discussed below (see figure). More evidence for pre-Chuar age extension can be observed within the Tanner graben at mile 68.5. Faults within the Unkar Group cut and tilt those layers and the lower Nankoweap Formation, but are truncated or covered by upper Nankoweap and Chuar Group strata.

**Chuar Group and Sixtymile Formation: Record of
E-W extension on N-S trending normal faults**

The Chuar Group is quite possibly the most beautiful and striking geologic unit in the Grand Canyon. Tucked away in the headwaters of several right-bank tributaries from Nankoweap Canyon down to Basalt Canyon, it is separated from the Colorado River by the north-south trending Butte fault and a stack of Paleozoic rocks (see figure).

This unique package of rocks has no correlative (rocks of the same age) in Arizona and may be one of only a handful of rocks of this age in the western United States. This 5248-foot (1600-meters) unit is subdivided into the lower Galeros Formation and the upper Kwagunt Formation (Ford and Breed, 1973, Dehler, unpublished data, 1998). The Galeros Formation is best viewed in Nankoweap, Carbon, Lava Chuar, and Basalt Canyons where they appear as multi-colored shales and mudstones interbedded with lesser amounts of sandstones and stromatolitic beds. The Kwagunt Formation can be viewed in Nankoweap, Kwagunt, and north Carbon canyons where a prominent red sandstone cliff (Carbon Butte Member) demarcates the base of the formation. This formation is not unlike the Galeros Formation in rock type;

but has fewer dolomite beds, an unusually thick sandstone unit (11–18 meters), and a significant thickness of organic-rich black shales containing a diverse assemblage of microfossils including the alga, *Chuarina circularis*.

Collectively, the Chuar Group, not unlike the Unkar Group, represents deposition associated with a fluctuating marine shoreline that was affected by waves and tides. Interestingly, water depth remained relatively constant throughout Unkar and Chuar deposition. The Chuar Group differs from the Unkar Group in that it contains a significant amount of organic-rich sediments, a rich assemblage of microfossils, and at least four different forms of stromatolites. Stay tuned for a more detailed article on the evolution of the Chuar basin and life along a Proterozoic marine shoreline.

The Sixtymile Formation has some similarities with the underlying Chuar Group. This formation is composed of siltstones and sandstones similar to those in the Chuar Group, but also contains a significant amount of breccias and lesser conglomerates. Slump folds and large boulders in this formation signify local relief along the Butte fault marking the “Grand Canyon Disturbance” (Elston and McKee, 1982), which was the culmination of a long period of fault movement.

Perhaps the preeminent structure in the Grand Canyon is the Butte fault system of the eastern Grand Canyon. It is exposed for a length of 18 km east of and parallel to the Colorado River between mile 53 and 68.5. The present Chuar Group exposures are just west of the Butte fault. The Butte fault angles north-northwest, dips 60–70° to the west, and now forms the main fault of the Laramide-age (~60 Ma) East Kaibab monocline. During the Precambrian, the Butte fault’s movement history was longer and involved larger displacements (see figure). Removing the displacement of Paleozoic strata across the East Kaibab monocline restores the Butte fault to its Proterozoic configuration, suggesting that displacement across the fault was as much as 3 km at the end of the Proterozoic.

The Chuar Group is folded into a broad trough-shaped syncline just west of, and parallel to, the north-south trace of the Butte fault (see figure). The Chuar syncline is asymmetrical with steeper dips on the east limb, adjacent to the Butte fault (see figure). Several aspects of this feature suggest that Chuar sedimentation, fault movement, and syncline development were synchronous. New measured sections across the Chuar syncline show stratigraphic trends indicative of syncline growth during progressive deepening of the basin on the downthrown side of the Butte fault. Chuar Group extension was east-west directed and post-dated, by nearly 200 million years, the northeast-southwest directed extension recorded in the Unkar Group.

The Big Picture

Assembly of Rodinia: The Unkar Group

It has been hypothesized that approximately 1.1 billion years ago North America was part of an assembling supercontinent called Rodinia (see figure) (Moores, 1991; Hoffman, 1991; Borg and DePaulo, 1994; Dalziel, 1995). This supercontinent predated the widely accepted and better understood supercontinent, Pangea, which assembled from the dispersed pieces of Rodinia in the late Paleozoic (~300 Ma). In North America, the event associated with the assembly of Rodinia is often called the Grenville orogeny, which resulted from the collision and suturing of North America to other continental mass(es). Remnants of this old continental suture can be found from Texas to the Grenville Province of New York and northern Canada. Many scientists postulate that East Antarctica and West Australia were docked to the western margin of North America, placing North America within the center of the Rodinian Supercontinent (see figure) (Moores, 1991; Brookfield, 1993; Karlstrom and others, 1999).

Perhaps due to the Grenville collisions, North America was also being cracked and split, as suggested by widespread extension and basin development. The Midcontinent rift (a subsurface rift basin in the midwest), Central Basin Platform (a subsurface rift basin in Texas), Apache Group (in central Arizona), and the Unkar Group all show extension at high angles to the Grenville Collision (see figure). They all have 1.1 Ga mafic intrusions and volcanic rocks, and show evidence for fault movement, allowing the crust to extend or pull apart in a northeast-southwest sense, perhaps in response to the northwest-directed continental collision on the southeast margin of North America.

The Breakup of Rodinia: The Chuar Group

For about 250–300 million years following the Grenville orogeny, the southwest geologic record is virtually nonexistent. Perhaps about 800 million years ago, East Antarctica and West Australia began to pull away from North America. Precisely when this rifting occurred remains in debate (Bond and Kominz, 1984; Ross and others, 1989). In the Grand Canyon Chuar Group and other exposures along the western margin of North America, we see evidence for continental scale extension that may be signaling the initial phases of this supercontinent rifting. If we can get better dates on the Chuar Group, we may be able to help resolve the timing of supercontinent breakup.

The Grand Canyon Supergroup offers a unique record that fills part of the gap in Powell’s “Great Unconformity,” a time period we are just beginning to decipher. Emerging models point toward a prolonged history of tectonism in western North America that is cryptically

recorded by an interaction of sedimentation and faulting in the Grand Canyon Supergroup, with numerous unconformities marking important erosional and tectonic events. The Unkar Group and associated mafic magmatism appears to record the presence of a basin within the continent that formed in response to nw contraction and ne extension related to the Grenville collisions to the south. This was followed by a hiatus of ~200 my before Chuar Group deposition recorded renewed continental rifting in an e-w sense, probably related to the early stages of supercontinent break up.

The previous summary represents a synthesis of work by many geologists. However, we have added key new findings based on work in the last three years. First, in contrast to Elston and McKee (1982) we postulate multiple, prolonged extensional events, rather than a single “Grand Canyon Disturbance.” Second we divide faults in the Grand Canyon Supergroup into two sets: 1) nw trending faults (Unkar age ~1.2-1.1 Ga) predate the Chuar Group as shown by angular unconformity beneath the Nankoweap Formation, and 2) The n-s traces of the Butte Fault system are Chuar-age faults (700–800 Ma). Third, we document that Chuar Group deposition was synchronous with Butte fault movement and Chuar Syncline development in the Neoproterozoic. Finally, the Chuar Group was deposited in marine, not lake, environments and thus the things we learn about fossils and sea water composition can be extrapolated to the world’s oceans. For example, Chuar shales are far richer in organic material and fossil life than the underlying units, indicating diversification of life through time and possibly more livable environmental conditions locally, and perhaps globally.

More details will be available in the upcoming edition (1999) of “Grand Canyon Geology: Chapter 5—Geologic Structure of the Grand Canyon Supergroup,” by Timmons, Karlstrom, and Sears and “ Chapter 4: Grand Canyon Supergroup: Nankoweap Formation, Chuar Group, and Sixtymile Formation” by Ford and Dehler (Beus and Morales eds.).



Mike Timmons
Karl Karlstrom
Carol Dehler

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A Translation

OK, SO IF YOU'RE not a geo-nerd, but you think this might be an interesting thing to be able to yap at your folks about, what they're saying is this:

The Grand Canyon Supergroup rocks, some 13,000 feet in all, represent some of the very long rock record that is missing between the Vishnu Schist and the Tapeats Sandstone. The Great Unconformity between those two layers is 1.25 billion years—that's the biggie in terms of missing time in the Grand Canyon. But there are actually many unconformities within the Supergroup, all of which help add up to the biggie. There are unconformities between the Unkar Group and the Vishnu Schist, between the Unkar Group and the Nankoweap Formation, *within* the Nankoweap Formation, between that and the Chuar Group, between that and the Sixtymile Formation, *within* the Sixtymile Formation and between that and the Tapeats Sandstone. Meaning what? Well, that these layers weren't deposited continuously on top of one another, that something happened in between all of these little "packages" of layers. Those somethings that happened are the interesting part of the story. This story is hypothesized, based on evidence from a lot of different sources.

A little over a billion years ago, our continent was part of a giant supercontinent called Rodinia (that other more famous supercontinent, Pangea, assembled later, at about 245 million years ago). While Rodinia was coming together, the collisions with other bits and pieces of continents caused mountain building further east. (Some folks think that our little corner of the world actually ended up in the middle of this continent, smashed up against western Australia and eastern Antarctica on the west and the rest of the U.S. on the east.) This movement broke the crust in the Grand Canyon region along long faults. Compression from mountain building happening in Texas caused ne-trending reverse faults to develop, such as those seen in Bright Angel, Bass, Vishnu and Red Canyons. This compression may also have caused stresses that *pulled* the crust along nw-trending faults in our region, causing normal faults like the Palisades Fault at Palisades Canyon (where the Morning Star Mine is) to develop. So the result is that these faults generally cross each other in a big, regional "X": compression in one direction and extension in the other.

The stress opened big basins that were the perfect places for sea water to invade, and loads of sediment to collect, hence the Unkar Group. The layers in the Unkar Group were deposited between 1.25 and 1.1 billion years ago, in rivers and near-shore environments of the coast. These sediments were all deposited either just below, just at or slightly above sea level, which moved up and down periodically, causing the shoreline to move in and out. The Cardenas Basalts erupted near the close of this time, covering the nearly 7,000 feet of

sediment already deposited. The Unkar Group sediments are all those in the Furnace Flats, Phantom Ranch, and Bass Camp areas, and Bedrock to Deer and Tapeats Creeks.

Then there's a long period of about 300 million years when no one knows what was happening here, because there are no rocks to record it in this region. But at perhaps about 800 million years ago Rodinia began

to split apart. As we pulled away from our neighbors on the west, a large basin began to form and the Chuar Group sediments were deposited into this, even while it kept deepening. The Chuar Group is a lot like the Unkar Group: sands, shales and limestones deposited in a shallow marine and near-shore environment, but the Chuar Group has a lot more organic material in it, stuff like algae and stromatolites—apparently life, even these simple, single-celled forms of life, had taken off by this time and was going great guns along this warm, shallow shoreline. You can see the Kwagunt and Galeros formations of the Chuar Group from the "Brain Rock" at the top of Carbon Creek, and if you look up Basalt Canyon as you race through Furnace Flats you can see the Nankoweap Formation as a prominent purple cap on top of the Cardenas Basalts.

By the time the Sixtymile Formation (the very top of the Supergroup) was being deposited around 700 million years ago, slumps and conglomerates in that formation show that the Butte fault system was active. It had to have been for several hundred million years in order to make space for all those Chuar sediments to be deposited. (The west side of the fault dropped down, creating a low spot for the stuff to collect.) Movement on this fault may have resulted in as much as 3 kilometers (1.8 miles!) of displacement in Proterozoic times alone. The Butte fault was also active in Laramide times, 60 or 70 million years ago. So the Butte fault started as an extensional fault, reversed movement in Laramide times to become a compressional feature, then may have had extensional movement again in the last 20 million years, similar to many of the faults in Grand Canyon. Pretty cool.

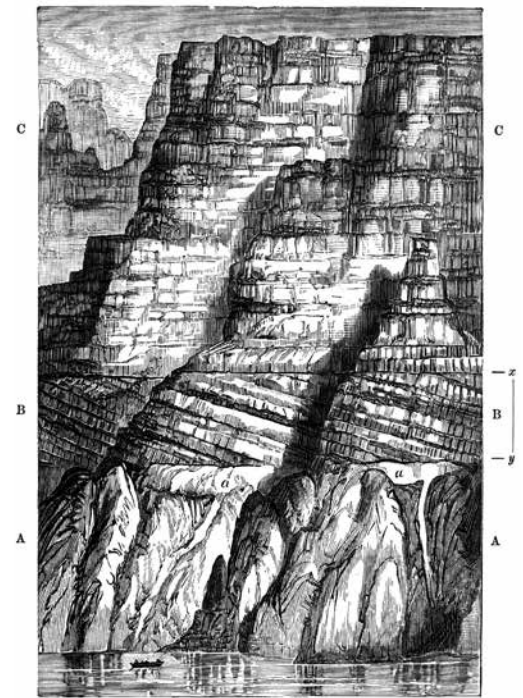


Figure 79.—Section of wall in the Grand Canyon.





Larry
and
Phoebe

Few boatmen, National Park Service employees, scientists, musicians, GCRG board members, artists, writers, or administrators have devoted as much of their life to Grand Canyon as Dr. Lawrence E. Stevens. Larry, as most of us know him, has spent the better part of the last three decades pursuing all the above avocations (and more) with one large common denominator: Grand Canyon and the ecosystems it houses. In this issue of the BQR, we present the distilled essence of two interviews with Larry, some criticisms of his viewpoints and Larry's clarification thereof, much of Larry's artwork, and a song. We hope that this issue will give the boating public a more rounded view of the eccentric character crawling through the poison ivy counting snails.

Larry Stevens

Stevens: I feel like I work for the Grand Canyon, and different groups hire me for different things, but what I work for is the healthiest, best Grand Canyon we can have. And I'm speaking this morning as a private citizen, not as an employee of any group.

As far as a resumé goes, I came to Arizona in 1970 to go to Prescott College. The first thing I saw was Grand Canyon, and immediately took a trip into the Canyon. The following fall, several months later, kayaked up at Lees Ferry, and started hiking here then. I graduated in 1974 and had some contacts in the National Park Service. They had just started an ecological inventory of the river corridor, and I knew that I wanted to work on that project. At the time the NPS had a little avian work going on, but nobody to study insects. I had focused my undergraduate studies on insects and bird life, so this was an ideal opportunity to do the first insect inven-

tory of the Colorado River. I worked for two and a half years collecting and identifying insects at the Museum of Northern Arizona, spending sixteen to eighteen hours a day preparing specimens. I identified about 50,000 specimens in that period, about 2,500 species from the river corridor. At the end of that project, I ended up with \$4.10 to my name. Science doesn't pay well, you know. Especially biology. I needed a job, so I went around in late March of 1976 to several river companies. Fortunately, I landed a job with Wilderness World. Unbeknownst to me Wilderness World had just fired all of its staff and I was hired as scab labor. That started my career as a river guide.

I rowed commercially through the rest of the seventies and into the early eighties. I began a Masters program at NAU looking at vegetation and the influence of insects on succession along the river, funding

my studies by commercial river trips and a non-lethal automobile accident. I was trying to understand why the riverside vegetation was changing as quickly as it was. I finished the Masters program in 1985. In that time period I also published a river guide, because there was such a dearth of information available to the visitors on Canyon biology. Everybody knows about Powell, a few people know about the rapids and geology, but really there was not much information on the biology down here at that time. There is a thin veneer of life over the canyon's surface, but it's incredibly rich, biologically, and a complicated world. The river guide helped me explain that a bit, and it funded my doctoral program, which lasted through 1989.

In 1980 I had begun working on specific study sites along the river, but in 1983 the Bureau of Reclamation released high flows out of Glen Canyon Dam. These spills wiped out my study plots, which I'd painstakingly photo-documented. Although those plots were eliminated, I had a rather good database for assessing the affects of those floods. I ran a couple of projects through the Bureau of Reclamation, looking at the effects of early '80s floods on the river ecosystem and came to some pretty interesting conclusions about the affects of unplanned flooding on a regulated river.

I gradually began to catch on to what was happening there, which is an ecosystem that has been subjected to a very unique and very human form of disturbance. The dam has reduced the amount of disturbance that this naturally very highly flood-disturbed ecosystem sustained. That has proven to be a very challenging management issue and I have been addressing different elements of change for the last eight years. My dissertation focused on vegetation change. Subsequent studies with the Glen Canyon Environmental Studies program focused on beach erosion, soil geochemistry, marsh development, and impacts on higher trophic levels. I have been studying from the river up, trying to compile the story of how the dam affected the ecosystem.

Steiger: When you say disturbance, can you tell me a little bit about that?

Stevens: Disturbance ecology is the study of how environmental perturbations affect ecosystems. Perturbations, disturbances, include natural events: fires, storms, flooding, volcanic activity—for example the Mount St. Helens eruption. Those are forms of natural disturbance that occur with varying predictability. Flooding happens to be a rather regular, predictable disturbance. But human disturbance of ecosystems involves many different alterations. It can be as radical an environmental change as urbanization, strip mining, or intense grazing. What it's taken me awhile to see is that some human disturbances increase the amount of upset to the landscape, and some human disturbances increase

the stability of the landscape. A regulated river, a dam-controlled river that doesn't receive regular flooding, has been ecologically stabilized. Very different than the natural situation, which is highly disturbed by flooding almost every year. Fire suppression is another form of stabilizing human disturbance. Fires are prevented and all kinds of vegetation change takes place. Similarly, building a breakwater along a coastline prevents waves from reaching the shoreline, prevents storm-related disturbance from happening. These are rather unique human impacts, not ones that most people recognize as a distinct form of landscape impact.

Steiger: What was your position with the National Park Service?

Stevens: I had done a couple of contract projects with the Bureau of Reclamation which brought me in contact with the National Park Service again after having left the agency in the mid-1970s. Those projects allowed me to get to know the staff up at the South Rim, Grand Canyon National Park, a couple of whom were interested in having me around for Resource Management issues. I worked on the last version of the River Management Plan in the late '80s, preparing a rather exhaustive piece that ended up as an appendix on how to conduct monitoring of the river corridor, how to use monitoring information to better manage this place. Much of it fell on deaf ears at the time. I hope that the new management plan will rekindle the Park Service's desire to use the scientific information for better management of the river. The plan is to be renewed every five years. The new plan is a little bit behind at this point. It should come out every five years. But the schedule is rather loose. I guess they can let it go as much as ten years without reviving it.

Steiger: What were the key points in your paper that had to do with river monitoring?

Stevens: The Park Service has a rather long and not very successful history of using scientific information to better manage its landscapes. Part of what we wrote was a plan to ensure good data collection and a reliable way of keeping that data managed so we can get back to it. It's a perennial problem, not only here but in all the government's land managing agencies. The plan I worked on called for the development of long-term databases, and a scientific process which was to be peer reviewed. So, we don't have in-house agency decisions about elements they may not know enough about. One value of Grand Canyon National Park is helping us understand the natural world. The desert environment, and much of the rim ecosystems are about as natural as you can possibly find in the West. These places have become incredibly valuable to understanding the changes going on elsewhere. For example,

Grand Canyon is largely ungrazed. There is no other block of a million-plus acres of the western U.S. that is largely protected from grazing and has been all along. The Canyon's value to understanding grazing effects in the Western landscape is absolutely prodigious because that impact is ubiquitous and very severe in many landscapes. Grand Canyon has a lot to offer the world scientifically, especially the western United States. The river management plan that I helped put together was framed around the idea of making sure we have good long term data collection, so the information collected can trigger management actions. If a change is observed in the distribution of campsites for example, then those data could be used to trigger management actions, like a planned flood. Those management actions can be whatever the Park Service sees as being most appropriate and feasible. If it needs to protect a rare and endangered species or an archaeological site, perhaps actually closing that site. If it's a landscape rehabilitation issue, maybe it means reducing visitation, going in and rehabilitating the site. It was a very active plan and I think the ideas were challenging to the National Park Service because they do not tend to manage very proactively in many cases.

The river corridor is inexorably altered by the presence of Glen Canyon Dam and human activities. There is no way to take out the dam because the nation's second largest EIS says that it must stay. If the dam remains, we can't have really big, erratic floods. There is no way to really effectively warm the water to the levels that it reached during the pre-dam summer months. Slurrying sediments through the reservoir down to the Paria River would be enormously expensive. These three processes—flooding, seasonal thermal variation, and sediment transport—are irrevocably altered by the dam, and the U.S. public has agreed to managing the river with the dam in place.

But there are substantial tradeoffs here. The river system is now at least an order of magnitude more productive than it was in pre-dam time. Lots of riparian vegetation, clear water that allows algae growth, and an aquatic foodbase that supports both non-native and native fisheries. The insects that live in the river, emerge out of the water and fly to the vegetation, helping to provide food for an enormous density of reptiles and amphibians, nearly one-third of the United States' bird species, and many mammals that we don't know much about yet. There is a much stronger ecological linkage between the aquatic and terrestrial environment here than existed in pre-dam time. To make matters a little more complicated, several rare and endangered species have come to rely on post-dam resources. The southwestern willow flycatcher lives preferentially in tamarisk in Grand Canyon. Wintering bald eagles feed preferentially on non-native trout. Peregrine falcons, which are also at the top of the food chain here, are feeding

on waterfowl, swallows and swifts, which feed, in turn, on insects that rise up from the river. All these are post-dam phenomena. To me it's a wonderfully complicated and biologically rich food chain, and regionally very significant. Riparian vegetation has been widely destroyed throughout the Southwest. So the dam has accidentally created a regionally important, biologically productive, and now more diverse ecosystem than existed in pre-dam time. Grand Canyon has become, for wildlife, just as for river runners, a refuge. Those habitats and resources are being destroyed elsewhere in the Southwest. It has become a very important stop-over habitat for migrant birds. All of these issues indicate to me that we have a dam that we have to figure out how to live with. We have a novel environment down there that we cannot return to its natural condition. This is very challenging to the Park Service which has a rather simple mandate: to manage for the natural condition. But managing for the natural state is not possible in the highly altered river landscape in Grand Canyon and it's clearly impossible in an environment like Lake Powell or Lake Mead, where lakes haven't existed for hundreds of thousands of years. Those are entirely novel landscapes, but the National Park Service has more or less the same mandate in those environments. The National Park Service may need to carefully evaluate its mission, and try to understand the regional implications of this "manage for natural" mandate. I think to some extent the National Park Service has tried to do that. Having more marshes, having bald eagles, and peregrine falcons in this environment is a sign of biological health, yet it is a sign of an altered landscape too.

Altered isn't necessarily bad, this is the message I'm trying to get across here. This is a house, an ecosystem, built on sand. Management of sediment is the bottom line—keeping flow fluctuations low and the overall ceiling of flows rather low, to retain the sediment that comes in from tributaries, then using occasional short bursts of flood flows to kick those sediments back up to recreate sandbars, backwaters, and shoreline habitats. Some of that characterized this place in pre-dam time, but it's a suite of management activities. The idea is that if we take care of sediment distribution, pretty much everything else will take care of itself. In some cases there may be specific actions that need to take place. Some species may need a specific activity. But if we can manage sediment, we should be able to keep the ecosystem together and keep the components that we value most highly, like the native fish, in the picture. The other clear message from the EIS is that management of the Colorado River is a public process, and through adaptive management we can continually improve our stewardship of the river ecosystem

Steiger: To me, your views are the most formidable contestant to the views of the Glen Canyon Institute

because you say that there are biological reasons not to do it.

Stevens: That's part of the story. I have three points about the overall situation. The first is just the daunting political framework in which Glen Canyon Dam exists. We don't live in the 1950s anymore—we live in a very crowded Southwest, with a lot of people clamoring for their own...resources...their lifestyle that is really more befitting of New York or the wet East.

Right now I don't see any limitation on that. I don't see any diminution of the drive to make the Southwest look like the wet East—and that requires water. And the way the water law is set up here in the West precludes going back. Maybe that can change—it'll take a revolution. I think actually a revolution, in the human relationship to the environment, to change water law in the Southwest.

Glen Canyon Institute will face major setbacks when the water supply to St. George, Utah is established from Lake Powell, which is being actively planned. That plan is to remove water from Lake Powell and move it over to St. George and put it into the Virgin River system. Once that's in place, the possibility of altering Lake Powell will be greatly diminished.

The second arena has to do with the regional biological story—especially with riparian vegetation in the Grand Canyon, and its value especially to bird species, but probably also to bats. Those species have lost their habitat elsewhere. We've created a refuge in Grand Canyon, and yes we could wipe that out, but what we'd be doing would be wiping out regional biodiversity. Those bird species may not have any other habitat. What I recommend is a regional planning process to restore those habitats elsewhere in the Southwest so those species don't have to rely on Grand Canyon as a refuge.

The problems with endangered fish are many. There are so many non-native fish in the Upper Basin, and the potential exists for serious disease transmission, downstream. Glen Canyon Dam is a barrier to non-native fish passing downstream. So in terms of regional ecosystem management, in terms of regional population management, simply allowing the river to flow through Glen Canyon Dam could harm the native fish downstream through introduction of non-native fish and fish diseases. My point there is that we need good long-term regional planning. And Glen Canyon plays a part in that, Grand Canyon plays a part in that, and the management, especially of riparian and stream habitats in the Southwest, is part of that story. Dave Wegner and I both support the Grand Canyon Wildlands Council, which is a regional planning effort related to the Wildlands Project, which has these goals in mind. So there is an ongoing public effort to plan for these kinds of restoration activities throughout the entire region.

The third area has to do with the rate and physical

problems associated with the actual restoration process. Just briefly, there are problems associated with drawing down Lake Powell. Those problems have to do with metal contaminants in the sediments in the delta. Again, my concern here is for native fish, for the aquatic ecosystem throughout the river system down in Glen Canyon and downstream. Drawing down the water of Lake Powell will expose sediment beds that may be extremely toxic to aquatic life. They may be toxic for two reasons: one is heavy metals that have concentrated in those sediments, especially mercury—more or less natural mercury, but there are probably mine tailings seeping into the river from headwater mines.

The other source of downstream pollutants is hydrogen sulfide, which is a natural product in buried sediments. Whenever you let silt, clay and sand deposit and seal them off from the air, anaerobic processes produce hydrogen sulfide and concentrate it. And hydrogen sulfide is absolutely deadly to fish. By drawing down the water on a sediment bed that is loaded with hydrogen sulfide, you may create a fish kill in the river system.

The Glen Canyon we lost cannot be recovered. Yes, vegetation will come back, and that vegetation would be largely tamarisk and Russian olive, and it would come in very quickly. There are problems with this restoration effort, and non-native species are a big concern. *But*, you cannot bring back the life that lived around the springs and the seeps in Glen Canyon. Those were isolated islands of habitat that probably had many unique species. We don't know what we lost, but my guess is that we lost absolute jewels of biological assemblages. We'll never get those back.

These are things to think about in terms of restoration. I'm very much in favor of ecological restoration of the Colorado River, but I want it to happen in an intelligent well-planned fashion, and I want to see the species of the Southwest preserved.

I see significant challenges in each of these three topics. Solve those problems, and you may have some restoration opportunity on your hands.

I think with Glen Canyon we have the time to be able to plan with decade, fifty-year or hundred-year planning horizons.

Glen Canyon Dam is a cash cow, there's no doubt about it, a golden goose. It's got a life expectancy of several hundred years but solving the ecological problems in 200, 300, or 400 years may cost progressively more.

Kenton Grua: Okay, I think Glen Canyon's a time bomb, ready to go off: might happen this year, might happen next year. I think we're in a race against time, and if this thing goes catastrophically, it's gonna really screw things up in Grand Canyon as well as upstream. And I think that, as well as the water issue, the waste of

water that it wastes every year.... The two things that are really pressing, we don't really have maybe that much time to study it.

Stevens: Good point. Just let me say that overall, I see the restoration of Glen Canyon as being a valuable and necessary undertaking. I very much appreciate Glen Canyon Institute's emphasis on the topic, because it helps rivers around the country. We've got 70,000 dams in the U.S. It's just abominable that we have so few rivers that are not regulated in this country. We've lost much of the integrity of our flowing water ecosystems, and we need to approach the issue of how to restore river ecosystems once we're through with these reservoirs, but there's a timeframe for *this* reservoir that's larger than that for many small reservoirs.

Steiger: Why do we want to restore all these ecosystems? What's the big deal? This Endangered Species Act—I have the sense that life forms have been comin' and goin' long before man ever entered into the picture. There were lots of life forms that became extinct as part of natural processes. So why is it so important to maintain every single species that's here now?

Stevens: And why restore river ecosystems? Simply from the standpoint of sustainability. If we value our natural heritage, we need to make sure it remains on the planet. Species are one thing, but ecosystems are the house those species live in. Without attention paid to the condition of those ecosystems, and without efforts to maintain them, we dribble away the species pool. The birds fly back, each year and there's a little bit less habitat so they don't nest successfully. Maybe it's once a year, once every few years another species fails to show up in migration, because of development in Central America where these migratory species overwinter. It's incremental loss and often very gradual. An individual might not notice it. But I cannot stand the thought of my daughter growing up and not being able to hear a yellow-billed cuckoo in the Southwest, and that's the state of the situation now. Within a few years we may have completely lost that species. And it's not just that species, many species are in the same condition—Neotropical migrant birds, in particular. The ESA is kind of moral impedance to the normal course of human behavior, which is just to keep consuming until it's all gone—and yes, maybe bemoan the loss of these life forms that have evolved here, but we *lose* them, and that's not right, from a moral or ethical standpoint. Let's rather approach the problem from the standpoint of sustainability, making sure that we have habitats and viable population of those species in the landscapes, and approach the future with that kind of view. Otherwise, just as in China, just as in Europe, just as in the other developed regions of the world, through time we undergo major losses in biodiversity. That's a world I

don't want to have to see. I don't want to be responsible for promoting that kind of world into the future.

Steiger: I know there has been some discussion on making the Canyon a wilderness area. Can this ever be a wilderness?

Stevens: There was an interesting paper in the 1950s that was called *The Death of Nature*. The author proposed that wilderness and natural processes had been stopped by human activity, that there is no way to actually achieve a wilderness anymore, no way to have a natural environment. From my years of studying insects, I know that if you drop down in scale maybe one order of magnitude, the world is a very wild place. The ants are running around in as pure a wilderness as can be found on the face of the earth, more pure than we can ever perceive. If you move to a larger scale to the distribution of birds and bats, the organisms which occupy large ranges also exist in wilderness. They don't understand it of course, but they encounter urban areas as vast deserts. Phoenix is wilderness of biblical proportions to an indigo bunting. The concept of wilderness is a uniquely post-1950 human perspective of what "wild" is. The presumption that we can stop those biological processes simply because our activities are incredibly disruptive is not true. But certainly human activities now dominate the earth's surface. In Grand Canyon, when you're within about ten meters of the river you're in a very human-influenced environment. But when you're ten meters above the river you're in an environment that, in many cases, may not have changed for a thousand years, and is in great ecological shape. Along the river about ten percent of the plant species are non-native, aliens brought in by humans. Up in the desert there are relatively few, largely because it's so harsh there. It's a very wild environment. It may not look ferocious, except to those of us that occasionally work up there in the summer, but it's largely pristine.

Steiger: Where do we fit into all that? Are living organisms separate from that? Are we separate from all the other life forms?

Stevens: This gets back to our interpretation of wilderness and our provincial ability to perceive what is really going on around us, largely because of temporal and spatial scale issues. Any species with cognitive abilities would face the same dilemma. No organism lives across the wide variety and the wide diversity of scales in which life exists. Humans are completely natural organisms in so many ways. Every valley girl completely jealous of her peer is feeling something that is perfectly biologically appropriate, even though she is living in la in an environment where she may never see a native species in her entire life. Her thoughts and emotions and antagonisms are all very much a product of the last four billion years

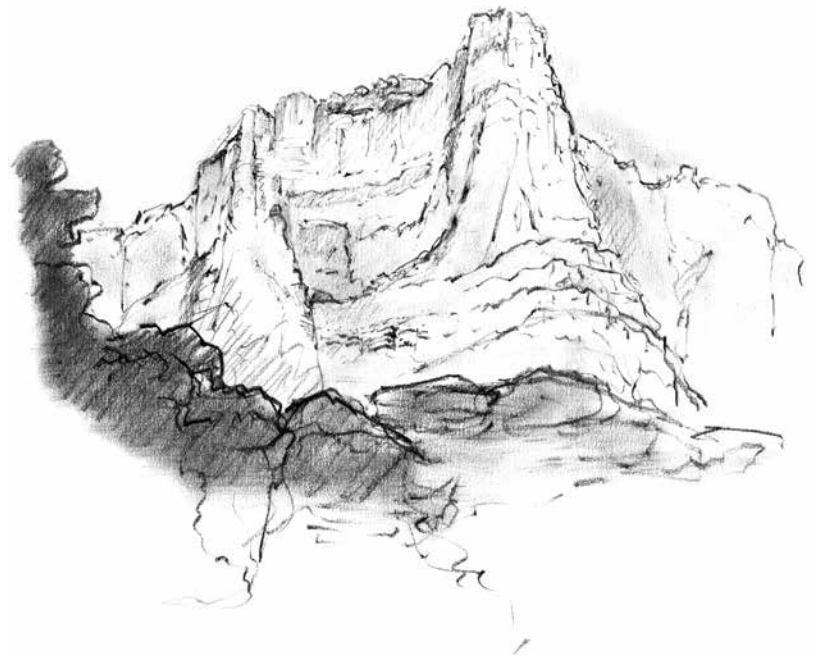
of life's experiment. They make perfect sense in an evolutionary context of each of us having to struggle to make our way in a very complicated biological and social terrain.

Steiger: What about managing the Park for *us*?

Stevens: For humans? I guess I don't take the perspective that the Park should be managed for humans. I think that the problems most Parks face are a function of over-population and use. Managing crowds is something that police want to do and the National Park Service is quite capable in that department. But human presence is the major issue and the dam is a result of human presence. We wouldn't have the dam if we didn't have a burgeoning population in the Southwest that demanded electricity, or at least the political entities that manage those populations, demanding that electricity. It all relates back to population size. In Grand Canyon, with five million visitors at the rim and crowded attraction sites along the river, it's obvious that over-visitation is a problem. The National Park Service has done a good job at managing visitation on the river, and it's a very challenging thing to do. I don't envy them that task in the future. There are some creative ways I think we could actually reallocate use for private boaters, particularly by having the NPS purchase companies when they come up for sale. That might help solve some of the overcrowding and allocation problems. But the Park should not be managed as if humans were the most important part. This kind of National Park was designated on the basis of its incredible landscapes and should be protected from human activities as much as possible, managed for the life and the natural processes that they contain. I take interest in Glen Canyon Dam partly because I see it as an analogy and outgrowth of the human condition. The socialization process we cultural beings each go through is a kind of consciousness regulation, and each of us is dammed within ourselves. Our personal dam controls our flow of energy and our expressions. So I take interest in Glen Canyon Dam in a psycho-sociological context, because I see it in the socialization process in each of us. Certainly in myself.

Steiger: Socialization?

Stevens: If we had the "natural mind" and were entirely uncultured we would be like wild flowing rivers. With the consciousness we're born with, I think, we would not know how to know beauty. We would be out of control and unable to function socially. Through the process of socialization we gain control and lose wildness. And that's exactly what we have done with Glen Canyon Dam—we have gained a great deal of energy and power,



by controlling this wild raging thing that existed here in the Grand Canyon.

In trying to figure out what the Grand Canyon is to me, I draw the analogy of an inverted onion. You may know Jung's metaphor of peeling back the onion layers of human consciousness to get at the core of truth, in dreams, in memories, or in our lives. I see the Grand Canyon in the opposite way. Here we are slowly learning what the skin of the onion looks like, the simplest, most understandable layer. Other layers of reality and truth that radiate out from that skin, radiate back into the past, radiate into the complexities of interactions between geomorphic processes and biological processes through time. These are so complicated that we cannot understand them. But we catch a glimpse of those dimensions by getting a good grasp on what exists here. So, the analogy of the inverted onion is as close as I can come in stating what I see of reality in Grand Canyon.

Phenomenal changes have taken place here through the last ten years, thirty years, century, ten thousand years, hundred thousand years, the last six million years. That change is reflected in what we see now. We get glimpses through to other dimensions that are truly profound, truly beyond our ability to understand, but they give us a special vision. The Canyon gives us a sense of contact with the earth which is now pretty much lost to urbanized Americans, who don't see the earth as sacred, as a mystery. Every bit of the earth is sacred. In this place we can see it clearly and strongly, and we respect it. We get to look down into it and see how deep reality is. Every bit of the earth is sacred and this place helps us remember that the whole sphere is holy ground.

Interview by Lew Steiger

Points, Counterpoints

Over the years Larry Stevens has contributed many articles to the BQR discussing a variety of subjects. Not all of them have met with universal acceptance—in fact, a few have drawn heavy fire. In the following pages we present two viewpoints that came in response to pieces by Larry discussing the role of science in Grand Canyon, and the downstream ramifications of draining Lake Powell. A clarification from Larry Stevens follows.

RESearch OF ANY KIND can be a benefit. Endangered species come to mind. I used to help a friend, Chuck Minkley, with fish research on the Little Colorado River in the early '80s. He was the best of the first of the Humpback Chub researchers and his teams acquired a lot of the currently used information. Those thirty-day Minkley projects were all done without benefit of a river trip. Everyone hiked in and out. And so that project felt pretty good to me. These days, a single unsuspecting chub could get shocked, snagged, tagged, and otherwise violated four times in a single day by four different research groups. I wonder what they do with those Willow Flycatchers.

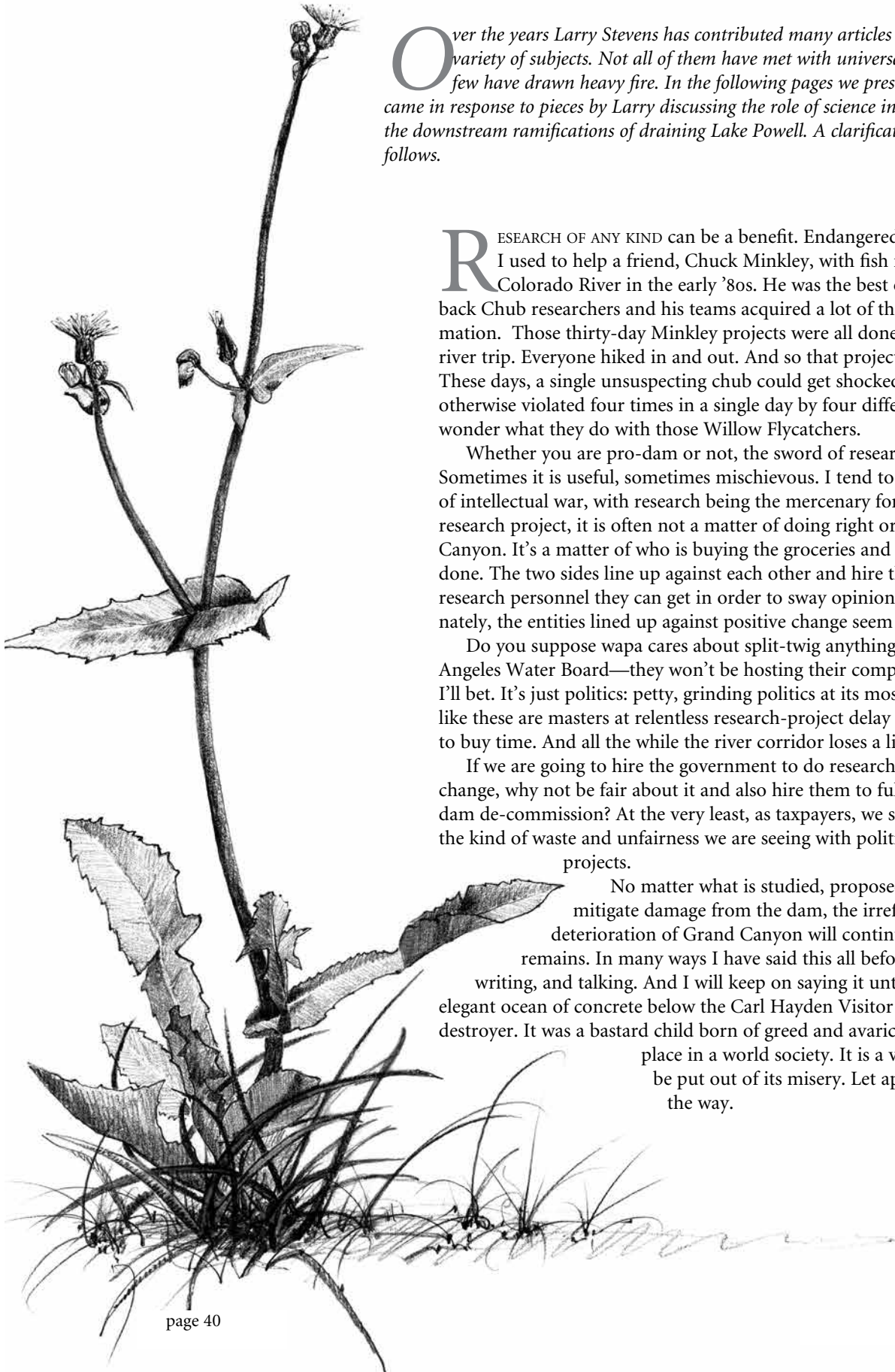
Whether you are pro-dam or not, the sword of research is double-edged. Sometimes it is useful, sometimes mischievous. I tend to think of it as a sort of intellectual war, with research being the mercenary for either side. For the research project, it is often not a matter of doing right or wrong for Grand Canyon. It's a matter of who is buying the groceries and what do they want done. The two sides line up against each other and hire the best, most prestigious research personnel they can get in order to sway opinion in their favor. Unfortunately, the entities lined up against positive change seem to have infinite capital.

Do you suppose wapa cares about split-twig anything? Or how about the Los Angeles Water Board—they won't be hosting their company picnic at Toroweap I'll bet. It's just politics: petty, grinding politics at its most absurd. Organizations like these are masters at relentless research-project delay tactics. It's a cheap way to buy time. And all the while the river corridor loses a little more.

If we are going to hire the government to do research aimed at derailing change, why not be fair about it and also hire them to fully explore the viability of dam de-commission? At the very least, as taxpayers, we should seek to eliminate the kind of waste and unfairness we are seeing with politically motivated research projects.

No matter what is studied, proposed, or actually done to mitigate damage from the dam, the irrefutable fact is that the deterioration of Grand Canyon will continue so long as the dam remains. In many ways I have said this all before, with photography, writing, and talking. And I will keep on saying it until the lake is gone. That elegant ocean of concrete below the Carl Hayden Visitor Center is the great destroyer. It was a bastard child born of greed and avarice and has no rightful place in a world society. It is a vulgar misfit and should be put out of its misery. Let appropriate research lead the way.

Bruce W. McElya



LARRY STEVENS' *A Butt Pygmy's Rebuttal* (BQR Fall 1997) conjured up an old TV commercial: Remember the one where a robed and crowned woman portraying Mother Nature is handed a muffin slathered with Brand X margarine? It tastes so good, she thinks it's butter. After being informed of the deception, she sternly proclaims: "It's not nice to fool Mother Nature," as thunder rolls at the sweep of her arm.

To be credible, a scientist in the (battle) field of biology must first be able to distinguish between natural ecosystems and manufactured ones. This should actually be easier than telling butter from margarine. But in attempting to bestow divinity upon concrete, Stevens fails this simplest of tests. What he alludes to as "environmental gains" from Glen Canyon Dam are in reality limited, short-term social benefits.

Although I am personally repulsed by the crass categorizations of science, as an advocate for wildlands and ecosystems I rely largely on science to support my cause. I have come to respect it, and to embrace the adage that science is a journey to truth. The masquerade of economics and/or "human benefit" as biological science confuses biology with socio-economics. Promoters of contrivances and manipulations based on bias are not scientists.

But the root problem is billing as "science" the twelve "gains" that the dam and other ecological manipulation of the river ecosystem have "created." Indeed, these are technically scientific observations, but they tell us nothing of what the Grand Canyon's river ecosystem is truly like, and what it needs to survive. These are purely socioeconomic judgments, not scientific hypotheses.

Stevens concedes that this soul-less constipatory plug destroyed Glen Canyon, but the nature of his lament over this loss reveals the philosophical motivation behind his pseudo-science: the fact that an incredible ecosystem was drowned isn't the concern. That we lost what "should have been one of the world's great scenic parks," is.

Biological science should represent our best definition of ecological reality, not a manipulated recipe wherein naturalness and perceived "improvements" that humanity has judgmentally imposed upon the Earth can be mixed to produce a desired product. In some places human manipulation can and should be a part of the landscape. But let's be frank about what was made "better" and for whom, especially in Grand Canyon.

Moreover, the 35 years that Glen Canyon Dam has bottled the Colorado River does not even represent the drawing of a single breath in the context of this river's

long life. To pass the dam off as a static reality that cannot or should not be reversed is to regard as sacred the works of humanity, subjugating the natural world and justifying its manipulation. The proposal to remove Glen Canyon Dam is far more reasonable than was the proposal to build it, whether using a social, economic, or ecological measuring stick. To present the alleged and narrowly defined human "benefits" of Glen Canyon Dam as a mitigating component of the dam's ecological consequences is like saying it's okay that we broke someone's leg because the designer cast we fitted them with is attractive.

Stevens sees the Grand Canyon as an impressive chasm to which we can apply window dressing and cute accouterments to "correct" its worldly imperfections as if it were a polyester Christmas tree begging for ornaments. He judgmentally refers to the pre-dam Colorado River as "sterile," (this is a desert, not a rainforest) while raving about the dam's creation of a "more productive river." And just what is more productive? The "trophy" trout fishery, and "more" of everything from vegetation to birds. Is this how "science" measures ecological integrity?

Let us hope that the biological architects and purveyors of the theme park mentality have a small following. Let us hope that their rebuilding of Grand Canyon is not upon us, wherein we can expect proposals from masons to build the walls higher, and zoo keepers to introduce hippopotamus. The latter proposal would be little more of a "benefit" justifiable by biological science than any other introduced, exotic species. It would be no less a Frankensteinian manipulation, nor a de facto defining of the Canyon's ecological purpose as an amusement park.

It is the incumbent responsibility of a biological scientist to understand that ecosystems are dynamic, and what we judgmentally perceive as "flaws" are integral, necessary components. It is further critical for humans to approach the natural world with the understanding that perfection embodies what we might perceive as imperfection.

Not only is it not nice to fool Mother Nature, it isn't possible. Butter might not be the perfect food, but it's real. And we'll all be a lot better off in the long run if we let it be butter. But to let the Grand Canyon be the Grand Canyon will take more than the patience of the ages, it will require humility.



Ric Bailey

Science, Values, and Vision for the Colorado River

I WISH WE LIVED in a world where big problems could be solved with simple solutions. I've tried to explain, obviously unsuccessfully to some, that decisions as large as the construction of Glen Canyon Dam involve irreversible trade-offs. Regrettably, the dam eliminated Glen Canyon, and transformed the flood-prone, sediment-laden, and seasonally warm Colorado River in Grand Canyon into a regulated river, one with far greater native biodiversity and biological productivity than existed there in the pre-dam past. Although several vertebrate species (especially fish) have been extirpated, the river corridor has become a refuge for numerous aquatic and terrestrial species, some of which are federally endangered, and most of which deserve more protection than they get. There is little doubt about these ecological changes, as they have been the focus of intensive scientific study by a wide array of scientists for the past two decades. In addition, there have been widespread introductions of non-native fish, fish parasites and plant species, and a considerable percentage of the Upper Basin's flow has been

abstracted through trans-basin diversion projects. These irreversible changes mean to me that removal of the Glen Canyon Dam will not restore the Colorado River in Grand Canyon to its pristine (pre-1880) condition.

This is not a justification for past actions, nor an endorsement of present-day poor judgment; rather, it is a wake-up call for increased participation in the now extremely public process of river management, and a call for improved long-range planning and implementation of appropriate actions.

But how and what? Speaking as an ox and a moron, I recognize an oxymoron when I see one, and "ecosystem management" is clearly one such conundrum. Ecosystems are too complicated for humans to understand, much less manage. Sure we can grapple with issues of water and sand in Grand Canyon, but the living world is just too humbly intricate a web of interactions to direct through human design, for some weird set of changing values. And you know that we will be hated by future generations for what we have done to the Earth. But because we are responsible for these ecological changes, we must try to do the best job of stewardship possible for the future, recognizing our limitations and the large potential for errors in judgment. This is the spirit of adaptive management, recognizing that we can't know enough about ecosystems to manage wisely, but are intelligent enough to plan on continued learning through the scientific method, and working cooperatively towards the best possible future for the earth and humanity.

Management of the Colorado River suffers strongly from strabismus: one eye is focused on ecological integrity while the other is trained on economic exploitation. Therefore, since the 1996 Record of Decision, the solution has been to manage democratically by committee. GCRG holds a chair on the Adaptive Management Work Group (AMWG) and its information support team, the Technical Work Group (TWG). GCRG is one of several "potentially environmental" voices among the 27-member AMWG, which is a Federal Advisory Committee. The AMWG advises the Secretary of the Interior on how to manage Glen Canyon Dam, based on the legislation of the 1992 Grand Canyon Protection Act, the 1995-96 Environmental Impact Statement and Record



of Decision, the “Law of the River,” and the status of ecosystem resources. Like the previous Glen Canyon Environmental Studies Program but with more reliance on a competitive, peer-reviewed approach, the Grand Canyon Monitoring and Research Center coordinates scientific monitoring of Colorado River ecosystem resources, providing that information to all stakeholders. “Potentially environmental” voices comprise more than half of the AMWG, but although virtually all meetings are open to the public, few members of the public attend or even write letters to the chairs of these committees. Is the committee approach working well? Ask your GCRG representative.

As far as science being used as a delay tactic to maintain the status quo, I think it is important to distinguish between scientific progress and management process. I certainly acknowledge that it has taken several decades to gain predictive power in understanding the interactions between flow and sediment downstream from Glen Canyon Dam. But we are not yet close to understanding most of the biological complexities in Grand Canyon, except perhaps for trout in the Glen Canyon reach. More research and monitoring, and a more rigorous discussion of values, are required to arrive at the point where we can be comfortable that we know how to manage the river’s aquatic and terrestrial ecosystems adequately.

Adaptive management requires scientific progress, with the expectation that ecosystem management will inevitably align itself to the best scientific understanding. However, in my experience important management information is not uniformly welcomed, and few take the time to read the literature. The authors of the “take down the dam” editorials in this issue of BQR have clear answers to river management, but how universal is their view? The overwhelming opinion of 36,000 members of the public through the 1995 Glen Canyon Dam Environmental Impact Statement process was that the dam should remain in place, but be better managed for downstream resources.

Anyone can snipe at science—it’s an easy target—and some projects unquestionably deserve the salvos. But what strategy do these critics propose if not democratic adaptive management using the scientific method? And if they use water and electricity, then how do they consider other people’s access to those resources in their solutions? My guess is that if they were in charge for long enough, they might end up about where the management team is now, deeply affected by this unique form of strabismus. Of course, to really understand Colorado River management, one should attend at least one AMWG and TWG meeting. The next few should be particularly enlightening from a philosophical, big-picture standpoint.

At its heart, the river corridor in Grand Canyon is extraordinarily altered. As an ecologist concerned with

conservation biology, I fully appreciate the importance of Wilderness designation as a long-term landscape protection strategy in Grand Canyon. That designation should apply to ecosystems (such as the Canyon’s tributaries, deserts and the rim ecosystems) that are still primarily affected by natural forces and largely pristine. But the Colorado River ecosystem has been inalterably transformed by human actions. This does not mean the river is not worthy of reverence, protection and a commitment to hard work for appropriate management. But perhaps additional special legislation is required for suitable protection of this odd couplet of wilderness and modified river ecosystem in Grand Canyon National Park.

I’ve had the phenomenal privilege of spending more than 3,000 days in Grand Canyon over the past three decades, as a river and trail guide, a park ranger, and a scientist. Each day there has been an inspiration. I do not pretend to know it because it’s so much larger than human awareness. Also, I can’t pretend to know how other people see it. My experience and bent is quite different from most people’s, and I recognize that my values are not necessarily common values. But the assignment of values—not just agency policy, but the public’s actual vision of this river of the future—requires additional, rigorous debate. The consensus achieved needs to stand for a long time, perhaps the Twenty-first Century, certainly for a much longer period than the normal three to five year planning horizon. In some ways the critical editorials about my vision indicate that there is enough energy among us to support such a debate.

I do worry every day as to what is best for the river and the Canyon. As a scientist, I continually grapple with my own biases and ignorance in understanding the nature of nature in a human-dominated ecosystem. I try to communicate what I learn to others, particularly to my peers in the scientific community, to river guides and to other interpreters who reach the public directly, and to managers who have to decide how to proceed with their impossible task. Some of the information is non-intuitive, and some of it is controversial. The largest lessons, those about perception and assumption, are inevitably humbling: the Grand Canyon wears many veils, and has many tricks up her many sleeves. I don’t know any other solution to overcoming one’s personal limitations than to keep trying to see clearly. My New Year’s wish is that we all use the Canyon’s foremost gift - inspiration—to rededicate our lives to working for the best future of our fellow humans and the biological integrity of our planet.



Larry Stevens

No B.S. It's the Gts! The 1999 Guides Training Seminar

WELL, MAYBE JUST a little B.S. You know how much fun it is to hang out with your pards and sling the bull some. That, of course, will be available, but so much more also as the variety of invited speakers and topics runs just about from A to Z. The dates are:

GCRG Spring Meeting	Friday, March 26
¼TS Land Session	March 27–28
Glen Canyon Dam tour/ Glen Canyon float	Monday, March 29
Adopt-a-Highway clean-up	Tuesday, March 30
¼TS River Session, upper	Wed–Tue, March 31–April 6
¼TS River Session, lower	Tue–Tue, April 6–13

The Fosters have once again made Marble Canyon Lodge available for the GTS, but this time in their new facilities. Also brought back is the popular float of the remaining 16 miles of Glen Canyon preceded by a tour of *the* dam, no longer self-guided due to new BQR policies. It's also time to recycle all those aluminum cans that have been stored along the GCRG stretch of Adopt-a-Highway on 89a, not to mention that other flotsam and jetsam. To paraphrase Edward Abbey: *Litter the roads with my beer cans? Why sure I do. In the future when recycling becomes big business folks will thank me for thoughtfully storing my aluminum along the road for them to retrieve.* Now is as good a time as any. Clean-up will occur the same day as rigging/packing for the down-river portion of the GTS.

The Land Session is open to all GCRG members, general as well as guide, and to any interested folks of the boating community and the general public. The River Session is open to guides and trainees who have work for the upcoming season in Grand Canyon.

Nominations for three board members and the new vice president/president elect will be entertained at the spring meeting on the 26th. Speaking of entertainment, be prepared for a possible guest-appearance at lunch one day—think Christmas.

Your GTS Committee

Grand Canyon Youth

GRAND CANYON YOUTH has set up shop at the GCRG office at 515 W. Birch Street in Flagstaff. They will be housed in one of the rooms at GCRG—eventually they'll have their own phone number. They are working under GCRG's 501(c)3 status for the time being, but they are their own entity, so if you want to make a donation or get involved, contact them at Box 23376, Flagstaff, az 86002. They're a great group and they need our help to get kids on the river to experience the wonders of a Grand Canyon river trip. Please make any checks payable to Grand Canyon Youth.

Christa

The Whale Foundation is Movin' On

I WOULD LIKE TO take a moment and write a word of thanks to everyone who has contributed to the Whale Foundation this past year. Also, I would like to take this time to let everyone know that the Foundation is setting up its own 501(c)3 and is no longer under the umbrella of GCRG. If you have any questions please contact me at (520) 774-4172 or e-mail me at: thegruse@aol.com.

Please send any and all contributions to:

The Whale Foundation
c/o Bob Grusy
114 W. Elm St.
Flagstaff, az 86001

Thanks! You guys and gals are the greatest.

Bob

REI Club Day

REI'S ANNUAL CLUB DAY will be Saturday, February 27, at the Paradise Valley (Phoenix) store from 12:00 p.m. to 4:00 p.m. GCRG will be there, along with many other clubs and organizations, so if you're in the area, drop on by and visit. We'd love to see you. It's free!

The Paradise Valley rei is located at 12634 North Paradise Village Parkway, West, Phoenix, Arizona. They can be reached by phone for more information at (602) 996-2211.

Seen Any Good Fatalities Lately?

DRS. TOM MYERS and Michael Ghiglieri are currently writing a book compiling and analyzing what they hope will be a complete list of non-natural fatalities below the rim in the Canyon. This is more difficult than one might imagine. Not even the NPS has a complete list of the hundreds that have happened. The goal of this book, however, is not the list itself but the conditions, decisions, mishaps, missed opportunities, etc., which contributed to these fatalities or somehow blocked their prevention or prevented a successful rescue.

We are looking not just at river-running fatalities, but also at those among members of river trips and among hikers, visitors, airplane pilots and their passengers, and anyone else who died prematurely below the rims. Causes include falls, drowning, rock falls, flash floods, crashes, hypo- and hyperthermia, and so on.

If you were a witness to one of these sorts of fatal events or were in on the immediate rescue attempt or evacuation and if you feel like reporting for the record whatever facts you know attended the event, we are interested in hearing from you.

What is clear so far is that there exists a vast difference between official NPS incident reports or Coconino County Sheriff's Office reports and the perspective of the same incident by professional guides who were present as witnesses. And, of course, discrepancies and conflicting details exist when almost any two reports of the same incident are compared. We are trying to iron out some of these so that the actual causes of the fatalities themselves are clear. Only by doing this can we provide accurate and useful information about accident prevention to professionals who have the responsibility for people's lives in the Canyon.

If you are interested in helping by providing personal observation experience, please call Michael Ghiglieri at 520-779-9977 or Tom Myers at 520-714-0305. You may, if you wish, remain entirely anonymous. Thanks for whatever help you care to give. Have a safe 1999.

*Tom Myers
Michael Ghiglieri*

Lost And Found

Custom ring found at approximately mile 205

Contact:
Box 1549
Durango, CO 81302

Help Wanted

GLEN CANYON INSTITUTE seeks a motivated individual for a part-time position in their Flagstaff office. Duties will include bookkeeping and data entry, with opportunities for involvement with the public, web site and newsletter design, and grant proposals. Hours and salary are negotiable and flexible. Send resumes to Glen Canyon Institute, Flagstaff Office, Box 1925, Flagstaff, az 86002.

FOODPACKER—full time. Please apply to: Box 635, Flagstaff, AZ 86002.

Canyon Music

GRAND CANYON RIVER GUIDES is still able to offer you a great deal on Paul Winter's wonderful cd *Canyon Lullaby*. 100% of the sale proceeds will benefit our organization's efforts. The cd was recorded above Lees Ferry and seems to capture the magical essence of the place. The beautiful and haunting soprano sax is complemented by birdsong, chirping of insects and the sound of the river itself.

We would once again like to thank Paul Winter, Earth Music, Roy Young and Charly Heavenrich for their support, and hope our members will take advantage of this limited availability. You can purchase a great cd for your collection, immerse yourself in canyon music and help GCRG in the process. What could be better! The cost per cd is \$13.00 including shipping. Get 'em while they last—they won't be around long!

Lynn

<http://www.gcrg.org>

GCRG NOW HAS ITS OWN domain name for our web site, so you no longer have to remember that other mouthful to get to us. Chris Geanious has been hard at work updating the site, so drop on in and take a gander—he'd be so tickled.

Businesses Offering Support

A FEW AREA BUSINESSES like to show their support for GCRG by offering discounts to members. Our non-profit status no longer allows us to tell you how much of a discount they offer, as that is construed as advertising, so you'll have to check with them. Thanks to all those below.

Canyon Supply Boating Gear 505 N. Beaver St. Flagstaff	779-0624	Canyon Books Canyon and River books Box 3207, Flagstaff, AZ 86003	779-0105
The Summit Boating equipment	774-0724	River Gardens Rare Books First editions 720 S. River Rd. Suite a-114, St. George, UT 84790	801/674-1444
Chums/Hellowear Chums and Hello clothing. Call Lori for catalog	800/323-3707	River Art and Mud Gallery River folk art 720 S. River Rd. Suite A-114, St. George, UT 84790	801/674-1444
Mountain Sports river related items 1800 S. Milton Rd. Flagstaff	779-5156	Cliff Dwellers Lodge Good food Cliff Dwellers, AZ	355-2228
Aspen Sports Outdoor gear 15 N San Francisco St, Flagstaff	779-1935	Mary Ellen Arndorfer, CPA Taxes 230 Buffalo Trail, Flagstaff, AZ 86001	525-2585
Teva Sport Sandals and Clothing	779-5938	Trebon & Fine Attorneys at law 308 N. Agassiz, Flagstaff	779-1713
Sunrise Leather , Paul Harris Birkenstock sandals. Call for catalog.	800/999-2575	Laughing Bird Adventures Box 332, Olga, WA 98279 Sea kayaking tours Belize, Baja and Hawaii.	503/621-1167
River Rat Raft and Bike Bikes and boats 4053 Pennsylvania Ave. Fair Oaks, CA 95628	916/966-6777	North Star Adventures Alaska & Baja trips Box 1724 Flagstaff 86002	800/258-8434
Professional River Outfitters Equip. rentals Box 635 Flagstaff, AZ 86002	779-1512	Chimneys Southwest Chimney sweeping 166 N. Gunsmoke Pass, Kanab, UT 84741	801/644-5705
Canyon R.E.O. River equipment rental Box 3493, Flagstaff, AZ 86003	774-3377	Rescue Specialists Wilderness Medicine, Swiftwater Rescue, Avalanche & Ropework Box 224, Leavenworth, WA 98826 www.rescuespec.com	509/548-7875
Winter Sun Indian art & herbal medicine 107 N. San Francisco Suite #1, Flagstaff	774-2884	Rubicon Adventures Mobile cpr & 1st aid Box 517, Forestville, CA 95436 rub_cpr@metro.net	707/887-2452
Mountain Angels Trading Co. River jewelry, call for catalog Box 4225, Ketchum, ID 83340	800/808-9787	Vertical Relief Climbing Center 205 S. San Francisco St., Flagstaff	556-9909
Terri Merz, MFT 1850 East Flamingo Road #137 Las Vegas, NV 89119 Individual/Couples/Family counselling. Depression/Anxiety	702/892-0511	Fretwater Press Buzz Holmstrom biography Discount to guides. www.fretwater.com	774-8853
Dr. Jim Marzolf, DDS Dentist 1419 N. Beaver Street, Flagstaff, AZ	779-2393	Randy Rohrig Casitas by the beach for rent in Rocky Point.	526-5340
Snook's Chiropractic Baderville, Flagstaff	779-4344	Dr. Mark Falcon , Chiropractor 1515 N.Main, Flagstaff	779-2742
Fran Sarena, NCMT , Swedish, Deep Tissue, & Reiki Master	773-1072	Willow Creek Books Coffee and Outdoor Gear 263 S. 100 E. St., Kanab, UT	801/ 644-8884
Five Quail Books—West River books 8540 N Central Ave, #27, Phoenix	602/861-0548		

THANKS TO ALL YOU poets, photographers and writers; and to all of you who send us stuff. Don't ever stop. Special thanks to Larry Stevens for the phenomenal artwork. Printed on recycled paper with soy bean ink by really nice guys.

Wilderness First Aid Courses 1999

Wilderness Review Course Date: March 19-21, 1999 (2 1/2 days)

Prerequisite: must be current wfr, went, wafa or Review by Wilderness Medical Associates (wma)

(If your previous course was not with wma you'll need to make special arrangements.)

Cost: \$155 plus lodging

Wilderness Advanced First Aid (Wafa) Date: March 22-26, 1999 (5 days)

Cost: \$255 plus lodging

Deadline for sign-ups is February 15. GCRG reserves the right to cancel any classes due to insufficient enrollment.

Place: Albright Training Center, Grand Canyon National Park South Rim

Lodging: Albright cabins: \$15/per person per night double occupancy, \$25/per person per night single

Meals: On your own; small kitchen in each Albright cabin has everything you need but the food.

Both courses include 2-year cpr certification.

Class size is strictly limited. Guides and private boaters welcome. Send your \$50 nonrefundable deposit with the application below to Grand Canyon River Guides to hold a space. The courses are already filling, so act now.

Circle One:	Wafa	Review Course
Name	_____	
Address	_____	
City	State	Zip
_____	_____	_____
Phone (important!)	_____	Outfitter
_____	_____	_____
Guiding since	# Trips	Type of current first aid
_____	_____	_____

Care to join us?

If you're not a member yet and would like to be, or if your membership has lapsed, get with the program! Your membership dues help fund many of the worthwhile projects we are pursuing. And you get this fine journal to boot. Do it today. **We are a 501(c)(3) tax deductible non-profit organization, so send lots of money!**

<p>General Member</p> <p>Must love the Grand Canyon</p> <p>Been on a trip? _____</p> <p>With whom? _____</p> <p>Guide Member</p> <p>Must have worked in the River Industry</p> <p>Company? _____</p> <p>Year Began? _____</p> <p>Number of trips? _____</p> <p>Name _____</p> <p>Address _____</p> <p>City _____ State _____ Zip _____</p> <p>Phone _____</p>	<p>\$25 1-year membership</p> <p>\$100 5-year membership</p> <p>\$277 Life membership (A buck a mile)</p> <p>\$500 Benefactor*</p> <p>\$1000 Patron (A <i>grand</i>, get it?)*</p> <p>*benefactors and patrons get a life membership, a silver split twig figurine pendant, and our undying gratitude.</p> <p>\$100 Adopt your very own Beach: _____</p> <p>\$ _____ donation, for all the stuff you do.</p> <p>\$16 Short sleeved T-shirt Size _____</p> <p>\$18 Long sleeved T-shirt Size _____</p> <p>\$24 Wallace Beery shirt Size _____</p> <p>\$10 Baseball Cap</p> <p>\$10 GRS Kent Frost Poster (Dugald Bremner photo)</p> <p>Total enclosed _____</p>	<p>We don't exchange mailing lists with anyone. Period.</p>
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Profitless Locality

THE OFT ridiculed passage below, from Joseph Christmas Ives' 1857 Report on the Colorado of the West was written, in all probability, on a remote point overlooking upper Mohawk Canyon, in what is now an obscure stretch of the Hualapai Reservation. In point of fact, Ives may have been correct in stating his would be the last party of whites to visit that precise profitless locality.

COLORADO EXPLORING EXPEDITION

GENERAL REPORT PLATE VII



J.J. YOUNG from a sketch by F. WEGLOFFSTEIN

UPPER CATARACT CREEK, NEAR BIG CAÑON

Our reconnoitering parties have now been out in all directions, and everywhere have been headed off by impassable obstacles. The positions of the main water-courses have been determined with considerable accuracy. The region last explored is, of course, altogether valueless. It can be approached only from the south, and after entering it there is nothing to do but to leave. Ours has been the first, and will doubtless be the last, party of whites to visit this profitless locality. It seems intended by nature that the Colorado River, along the greater portion of its lonely and majestic way, shall be forever unvisited and undisturbed...

The deer, the antelope, the birds, even the smaller reptiles, all

of which frequent the adjacent territory, have deserted this uninhabitable district. Excepting when the melting snows send their annual torrents through the avenues to the Colorado, conveying with them sound and motion, these dismal abysses, and the arid table-lands that enclose them, are left, as they have been for ages, in unbroken solitude and silence. The lagoons by the side of which we are encamped furnish, as far as we have been able to discover, the only accessible watering place west of the mouth of Diamond River. During the summer it is probable they are dry, and that no water exists upon the whole of the Colorado Plateau. We start for the south with some anxiety, not knowing how long it may be before water will be again met with.

phone 520/773-1075

fax 520/773-8523

gcrq@infomagic.com

<http://www.gcrq.org>

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