

GLOBAL WARMING IN OUR WATERSHED

CAUSES, EFFECTS AND SOLUTIONS



Photo credit: Joe Cook

There's no doubt—the earth's climate is changing because human activities are altering the chemical composition of the atmosphere through the buildup of greenhouse gases, such as carbon dioxide and methane. The proof is in ice core samples, climate models, record heat waves, and melting glaciers.

Many greenhouse gases are created from the burning of fossil fuels including coal, oil and natural gas. According to the U.S. EPA, about 80% of global carbon dioxide emissions come from cars and trucks, heating homes and businesses and power plants. Additional greenhouse gases are coming from natural sources like previously frozen methane thawing in warming arctic permafrost.

While the United States represents only 5% of the world population, we contribute 25% of the emissions that cause global warming. Tim Flannery, a leading authority on global warming and author of *The Weather Makers*, says that we need to reduce our emissions by at least 70% in the next 50 years with major efforts made *in the next ten years*, in order to prevent catastrophic impacts to public health, economies, and property values.

Global Warming Impacts in the Southeast

According to a recent national report focused on the Southeast, the area's enormous population increase since the 1970s—a 30% jump—will exacerbate global warming's effect on strained water resources, as greater numbers of



Photo credit: Chris Hughes, National Park Service

Global warming will affect wildlife, such as this blue heron which takes flight as a Chattahoochee canoeist paddles by its perch in the buffer along the river.

people require water. EPA cites a study that predicts increases in extremely hot days and more frequent heat waves, which will increase the number of heat-related deaths and illnesses. This situation will also increase concentrations of ground-level ozone which already exceeds national ozone health standards.

While climate model simulations have not yet come to a consistent conclusion about the amount of warming the Southeast should expect, scientists agree that significant change is coming. Estimates range between a rise of 4 and 10 degrees Fahrenheit in this century and drastic

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NEW STATE ENERGY PLAN IN THE WORKS

Georgians are energy hogs. We use 25% more electricity than the national residential average and rank 40th in the nation in per capita spending on energy efficiency. While our population has just about doubled over the past two decades, our energy use has gone up even more—by 76%.

Last March, Governor Sonny Perdue initiated a State Energy Strategy and this fall environmental officials took Georgia's first draft energy plan on a five-city tour, seeking public input prior to final approval of the plan by the new Energy Policy Council in December, 2006. Jason Rooks with Georgia Conservation Voters represents the environmental community on this Council.

Georgia's plan could result in recommendations for new laws, executive orders, or regulatory incentives. Critics of the 160-page draft plan that was presented in late September said that it fails to outline stricter energy standards, as well as funding to enforce them. According to an Associated Press article, Dennis Creech with

Southface Institute said, "Without financial resources, we won't be able to overcome the market and energy barriers to energy efficiency."

Other southern states, including the two Carolinas and Florida, already have energy plans in place.

Need to Concentrate on Efficiency and Conservation

Significant numbers of Georgians attended and spoke out at the September hearings held by



Paddler floats peacefully down the river with Plant McDonough in the background.

the Energy Policy Council. Ordinary citizens and small business people testified that Georgia needs to concentrate on energy efficiency and energy conservation.

A second popular interest was alternative sources of energy, with a focus on solar energy for direct water and space heating and to generate electricity. Another popular and low-cost option that was recommended is what is now called "geo-thermal" power—using the natural temperature of the soil (both heat and cold) to heat and cool homes and businesses.

If Georgians can save energy through efficiency and low-cost conservation techniques to reduce our use to the national average, four existing power plants in Georgia could be available to meet new users' demands, at no additional construction cost. A conservative energy strategy that is based on avoiding high-cost solutions, like expensive new power plants, will save money while making our air cleaner, and using less water.

12th ANNUAL PATRON DINNER

RIVER BENEFACTORS

Mary Lou & Larry McDaniel
Janis & Mike Eckert
The Coca-Cola Company
Dennis Dean Catering Company
Honda Marine
JST Foundation
Turner Foundation
Whole Foods Market

RIVER DEFENDERS

Butler, Wooten & Fryhofer
Colonial Pipeline
Cox Enterprises
Ellis Communications
Georgia-Pacific Corporation
The Marcus Foundation
Newfields
Paul, Hastings, Janofsky, & Walker
Plantation Pipe Line Company
Smith, Gambrell, & Russell
Turner Broadcasting System

RIVER ADVOCATES

Andrews, Knowles & Princenthal
C.W. Matthews Contracting Co.
CH2M Hill
Chevron
GeoSyntec Consultants
Lawson, Davis, Pickren & Seydel
Don Mazursky
Merrill Lynch
Montgomery Watson Harza
PricewaterhouseCoopers
Southwire
SweetWater Brewing Company
Angela & Rhett Turner

REFLECTIONS

My 13-year old, mostly-lab dog Molly B. has been with me longer than I have been with Upper Chattahoochee Riverkeeper. Next to my two sons, who are now 25 and 21, she is the heart and soul of my daily life.

At our 12th Annual Patron Appreciation Dinner, UCR's board of directors honored me and Molly B. by purchasing the naming rights for our new pontoon boat during the event's live auction—to my complete surprise. The boat will be called *The Molly B* and it will ply the waters of Morgan Falls and West Point Lakes, as well as the deeper sections of the Chattahoochee. (See *Captain's Corner* on page six for more details.)



Photo credit: Beig Honorar/
Atlanta Journal Constitution



Originally Molly, a friend suggested the short-hand name for the mineral Molybdenum - Molly B.; the B. became Bethea, beautiful, bad, bodacious, etc.

This naming gift brought me to tears. You see, Molly B. has always been there for me at the end of long days, when I've left her to defend our home, often with a full bladder, while I worked to save the river. It's tough to match a dog's loyalty. Now, she'll live on to help monitor the Chattahoochee and take people on voyages to learn more about our river.

UCR is fortunate to have quite a few long-time supporters and donors whose continuing loyalty has been critical to achieving our accomplishments over the years. A number of them, who were also sponsors of our annual dinner, are highlighted on this page.

Need Your Help to Purchase New Floating Classroom

Our boat needs have not ended, unfortunately, with the acquisition of *The Molly B*. We are working vigorously to raise funds to purchase a new Catamaran for the highly successful floating classroom program that we operate on Lake Lanier in partnership with **Elachee Nature Science Center**. Over the past six years, we have brought more than 12,000 students aboard our pontoon boat, the *Chota Princess*, for hands-on learning activities.

Earlier this year, a Coast Guard stability test determined that the number of people that the *Chota* can safely carry must be significantly reduced. This comes at the same time that more schools and teachers are clamoring to use this popular program. The Catamaran that we hope to purchase, along with two Honda motors, has a glass bottom for underwater viewing, a safe capacity of 49 and a price tag of \$180,000.

We're half way to reaching this goal, but need your help so that we can buy this boat before the 2007 season. For more information please contact our Development Director, DJ Strickland.

Sally Bethea



ATTORNEY STEVE O'DAY HONORED AT 12TH ANNUAL DINNER

We celebrated our 12th Annual Patron Appreciation Dinner with 350 guests at The Foundry in Atlanta. After long-time UCR supporters and event chairs **Mary Lou and Larry McDaniel** welcomed our guests, four awards were presented to individuals who have made a significant contribution to preserving the Chattahoochee River and the drinking water of millions of Georgians.

Attorney **Steve O'Day**, partner at Smith, Gambrell & Russell, was honored with our *River Guardian Award* for his many precedent-setting legal cases that have significantly improved environmental protection for Georgia's rivers. **Senator Seth Harp** from Columbus was presented with the *River Legislator Award* for his tireless efforts to promote legislation to help protect downstream communities, land and wildlife.

Our *River Neighbor Award* went to **Mildred Burdette**, resident of Hogansville, Georgia, for her devoted efforts to



Event chair Larry McDaniel welcomes the crowd and toasts UCR's achievements over the past years.



UCR Boat Captain Harlan Trammell (2nd from the left) enjoys the event with representatives from sponsor Honda Marine.

promote good government and clean water in her small community. **Pete Frost**, Director, Douglasville-Douglas County Water & Sewer Authority, received the *River Steward Award* for his willingness to work collaboratively with diverse groups on practical solutions to protect and manage drinking water supplies.

The Apostles of Bluegrass serenaded guests, as they arrived for the VIP Reception sponsored by **Colonial Pipeline**, which included six varieties of **SweetWater's**

popular beer. As the awards program began, guests were treated to a fabulous dinner by **Dennis Dean Catering Company** and **Whole Foods Market**. For the first time, we held a silent auction along with the live auction, which helped us raise close to \$190,000 for the evening. Thanks to all who supported this annual celebration.



Crowd of over 350 guests enjoy the program and dinner prepared by Dennis Dean Catering.



Award presenters Fran O'Day, Ciannat Howett, UCR Executive Director Sally Bethea, and River Guardian Award recipient Steve O'Day.

KIA PLANT PROPOSAL THREATENS STREAMS

The **Georgia Economic Development Authority (GEDA)** has applied to the Corps of Engineers for a permit to pipe 10,000 linear feet of streams and fill 25 acres of wetlands in the construction of the KIA Motors production plant in West Point. UCR believes that the environmental impacts must be thoroughly analyzed and considered before any final decisions are made about the footprint of the facility. We worked with Southern Environmental Law Center to draft a comment letter that was submitted this summer, raising several issues of concern: (1) failure to meet federal guidelines, particularly with respect to the proposed construction of stormwater detention ponds in existing wetlands, (2) failure to adequately assess impacts, (3) failure to offer sufficient mitigation for impacts, and (4) failure to involve the Georgia DOT with regard to impacts of an interchange that will serve the facility. We hope to work with both GEDA and KIA to help minimize the impacts of this development and ensure that **West Point Lake** and its tributaries are protected.

CHRONIC SEWER SPILLS CONTINUE IN EAST POINT

Citizens called UCR repeatedly in 2003 to report chronic sewage spills in the **city of East Point**. These spills were documented in streams in neighborhoods, in parks, and on school property—posing a public health threat and damaging private property. After communication efforts failed and UCR threatened to sue the city under federal law, the state Environmental Protection Division (EPD) decided to negotiate a consent degree with East Point in December 2004. While the city has made some progress implementing the terms of the order, none of the underlying problems have been fixed and sewage overflows have continued. In fact, the city has experienced *more than 60 sewage overflows* in the last 18 months, some involving millions of gallons of raw sewage. Despite good efforts, EPD was unable to reach agreement with the city on a new consent order and had to unilaterally issue an administrative order requiring certain repairs and payment of a penalty. The city has since appealed the order. UCR will continue to monitor this situation, supporting EPD in its efforts to bring East Point into compliance with clean water laws.

DRAINING A CORNFIELD IN WHITE COUNTY?

Last summer, a UCR member was enjoying a relaxing paddle down a section of the Chattahoochee River below the 255 Bridge in White County, when he rounded a bend in the river and came upon a large mound of dirt in the river. Upon further investigation, it appeared that someone had bulldozed an 8-10 foot swath of earth and vegetation down to the water's edge, through the state-protected buffer, and then pushed the material at least 10 feet out into the Chattahoochee.

The paddler called UCR for assistance and also contacted White County. As a local issuing authority, the county is charged with enforcing Georgia's buffer regulations and overseeing land disturbing activities on this stretch of the river. After UCR also notified EPD, the agency identified the landowner as an Atlanta company, **Coker Properties, LLC**. Ostensibly, a farmer who leased the property from this company had undertaken the illegal activity to "drain a cornfield"... The state told the farmer that he had to remove the soil that was pushed into the river and stabilize the riverbank with grass seed covered with mulch.

Dirt Pile Remains in River

Several months after the encroachment was first discovered, UCR staff paddled downriver to the site to see if the dirt had been removed, as had been reported by the county. It had not—although a sprinkling of grass seed and

On Patrol

RIVER ACCESS CONTROVERSY STIRS IN ROSWELL

Earlier this year, residents along **Old Riverside Road** in the city of Roswell noticed an increase in traffic, trash, people and riverbank erosion in an area that has long been used for informal river access by paddlers and anglers. According to the neighbors, there were no problems until last year when a *private river outfitting company* began to bring large numbers of rafters to the site to get on the river. Concerned residents contacted Roswell, Fulton County and the National Park Service. At the urging of the NPS, the County blocked off the access, which heightened the debate about future access and use. Roswell held meetings to gather information and hear input from concerned citizens. UCR attended these meetings and submitted comments focused on protecting the river while allowing reasonable access as part of Roswell's comprehensive river recreation plan. We will continue to be engaged in the process.

TRISTATE WATER WARS WAGE ON IN COURTS

The 16-year water dispute between Georgia, Alabama and Florida over two shared river basins, **ACF (Apalachicola-Chattahoochee-Flint)** and **ACT (Alabama-Coosa-Tallapoosa)**, has moved to the courts in recent years. Litigation followed the tristate negotiators' failure to meet or re-extend federal deadlines. In 2006, a flurry of legal proceedings in several courts was capped by mandatory mediation among the states ordered by Judge Bowdre in the Northern District of Alabama. These negotiations continue behind closed doors and have altered operations of the Army Corps of Engineers dams. The Fish and Wildlife Service (FWS) recently reported on the impact of dam operations on endangered species in the Apalachicola River. The FWS "biological opinion" evaluated impacts to four species of mussels and the Gulf Sturgeon. After the FWS found that there was no "jeopardy" to the species, Florida and Alabama both filed suit challenging the opinion. Governors from the three states are scheduled to begin ACF negotiations again in November.

straw, along with stepping stones, had been added to the dirt pile. We have strongly urged EPD to fully enforce the state's buffer protection law and require that as much of the soil be removed as practicable.

The natural vegetation along north Georgia trout streams and the Chattahoochee River provides shade to moderate water temperature during the long hot months of summer. Riparian cover also serves to slow storm water runoff, filter out pollutants and hold sediment in place with a well-established root system. For these reasons, Georgia law requires a 50-foot buffer on trout streams and a 25-foot buffer on warm water streams throughout the state. Waters designated for drinking water supply, located in protected river corridors or steep mountain areas are afforded additional buffer widths to protect their integrity.



Paddlers encountered this large mound of dirt that was pushed into the Chattahoochee above Lake Lanier in violation of state buffer laws.



TURNER VOLUNTEERS DO IT AGAIN!

In September, forty enthusiastic volunteers from **Turner Broadcasting System** joined UCR, the National Park Service and kayaker extraordinaire Richard Grove for a riverside cleanup at the Power's Island Unit of the



This pint-sized volunteer enjoyed lending a hand in the cleanup process.

Chattahoochee River National Recreation Area. This is the fourth year that UCR has participated in the annual **Turner Volunteer Day**—a worldwide campaign that encourages Turner employees around the globe to act locally. During the 3-hour cleanup, volunteers pulled debris from the river and surrounding banks. Canoes were used for trash



Volunteers gather to hear cleanup instructions before embarking on their mission.

and garbage that could not be accessed by land. Volunteers also helped by removing non-native vegetation such as Chinese Privet and English Ivy. Many thanks to all who participated in this event and made it a great success.



EXPLORE THE CHATTAHOOCHEE AT WHOLE FOODS MARKET

Whole Foods Market opened its newest store on States Bridge Road in Duluth-Johns Creek in late September at a Bread Breaking Ceremony superbly organized by WFM's **Russ Benblatt**. What is unique about this new market is not that it is the largest WFM store in Georgia, but that it includes a replica of the Chattahoochee River from the headwaters to Lake Seminole artistically designed on the store floor! UCR staff worked with Whole Foods to design the display and provide river facts.



Customers can follow the path of the Chattahoochee River as it winds through the new Duluth store.

As you embark on your journey through this Whole Foods Market, take a moment to reflect on the images under your feet. You'll see the Chattahoochee River guiding you on your adventure, with markers along the way explaining how the Chattahoochee has shaped Georgia's

landscape and history. A legend of circles and rectangles of various blues and greens are used to express river uses and interesting facts. UCR is grateful to Whole Foods for furthering our efforts to help educate the community and public of the importance of our river to our lives.

Bio-Diesel Fuels WFM Trucks

Doing its part to reduce the emission of greenhouse gases, Whole Foods announced in August that all of the tractor-trailers in its Southern Regional distribution fleet will be using about 6,000 gallons of B20 blend (20% bio-diesel and 80% petroleum diesel) every month. This action will reduce

its particulate emissions by 12%, unburned hydrocarbons by 20%, carbon monoxide by 12%, sulfur dioxide by 20% and carbon dioxide by 16%.



REDUCE YOUR CARBON FOOTPRINT: EASY THINGS WE CAN ALL DO

The best way to become part of the solution is to get involved—in your everyday life, in your community, and even nationally. Go to www.stopglobalwarming.org to sign up for the "Virtual March on Washington". Then go to the website's carbon calculator to determine your carbon footprint. After that, it's easy to make small changes every day to reduce your carbon contribution.

If you replace three frequently-used light bulbs with compact fluorescents, you can save 300 pounds of carbon dioxide per year. Replace your old shower head with a low-flow shower-head and reduce the amount of energy needed to heat the additional water you save; you will save 350 pounds of carbon dioxide per year. Adjust your thermostat. If you lower your heater two degrees in the winter and raise it two degrees in the summer, you can save 2000 pounds of carbon dioxide per year. *For many more easy changes that you can make go to www.stopglobalwarming.org/sgw_actionitems.asp.*



stopglobalwarming.org

- **Car air filter:** check your car's air filter monthly and save 800 lbs. of CO₂ and \$130 per year.
- **Home thermostat:** move your thermostate down two degrees in the winter and up two degrees in the summer. Save 2000 lbs. of CO₂ and \$98 per year.
- **Home water heater:** keep your water heater insulated and save 1,000 lbs. of carbon dioxide and \$40 per year.
- **Showers:** Showers account for two-thirds of all water heating costs. Save 350 lbs. of CO₂ and \$99 per year by using less water in the shower.
- **Hybrid cars:** The average driver could save 16,000 lbs. of CO₂ and \$3,750 per year driving a hybrid.
- **Un-used electronics:** even when electronic devices are turned off, they use energy. Save over 1,000 lbs. of CO₂ and \$256 per year by unplugging them.

Saving energy saves water.

Stepping Lightly

- **Compact fluorescent bulbs:** replace three frequently-used light bulbs with compact fluorescents and save 300

Riverkeeper Staff

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Policy Director

Sally Bethea
Executive Director and Riverkeeper

Birgit Bolton
Programs Coordinator

Alice Champagne
Technical Programs Director

Bill Crawford
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Magnus Christon
Special Events Director

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Ben Jordan

Kay Lee

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Our mission is to advocate and secure the protection and stewardship of the Chattahoochee River, its tributaries and watershed.

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DNR TROUT RELEASE GUARANTEES A GREAT KIDS FISHING DAY

This year's Kids Fishing Event on the Chattahoochee, which coincided with the 35th anniversary of National Fishing and Hunting Day, brought more than 250 youngsters to the banks of the river below Buford



Look what I caught!

Dam in Forsyth County. The event was held at the Lower Pool Park on September 23, which also happened to be a "free fishing" day for Georgia residents on any public waters.

As one of the event's main sponsors, the **Georgia Department of Natural Resources** (DNR) aims to introduce kids to an enjoyable outdoor activity, while raising their

awareness of the important role that outdoorsmen and women have played in conservation and improving our natural resources. Those under the age of 15 were invited to gather along the Chattahoochee with their families to experience a beautiful day and a fun, outdoor adventure.

"First Fish" Certificates

While the mist was still rising off the river and participants were just beginning to sign in and prepare their fishing gear, DNR's **Buford Trout Hatchery** released 1,500 rainbow trout into the cold, clear tailwaters below the dam. With the additional stocking of rainbows, the young anglers' efforts were rewarded with high catch rates. When the kids tired of fishing or reached their catch limit, they took a break from the river to enjoy lunch. Additional

activities included fly-tying and casting demonstrations, prize give-a-ways, educational exhibits and the opportunity to pet a Great Horned Owl named Zeus!



Kid's fishing day draws a big crowd of eager participants.

UCR and other organizations provided necessities such as poles, life jackets and fishing assistance for the participants. Bait was provided courtesy of Rainbow Ranch—those too squeamish to use live worms for bait were given corn instead—and those lucky enough to experience the thrill of catching their first fish during this event received a "First Fish" certificate provided by the **Georgia Tailwater Chapter of Trout Unlimited**.



Girls can fish too!

In July, kids from the **Boys and Girls' Clubs of Hall County** enjoyed a similar fishing event as part of UCR's *Partners for Clean Water Program*, funded by the U.S. EPA. A day of fishing, along with a grilled hot dog lunch and tour of the Buford Hatchery, were provided.



SOAK UP THE SCIENCE AT WORLD CLASS ENVIRONMENTAL EDUCATION CENTER

A new eco-museum for kids of all ages—the **Gwinnett Environmental & Heritage Center**—opened this fall in the Chattahoochee watershed. Located on 200 acres near the Mall of Georgia in Buford, this Gwinnett County facility offers a fun and 'wet' learning environment outfitted with water guns, a huge spouting frog and an interactive water fountain. All of the games and educational tools help teach kids and their families the importance of clean water. Other displays and videos highlight the history of water and its uses in Gwinnett County.

The museum is designed so that it receives the full day's sun and an indoor waterfall running under a bridge helps to cool and heat the interior. Plants on the roof help

absorb and lessen the impacts of stormwater that typically runs off roof tops when it rains. The restrooms are equipped with special plumbing that uses treated wastewater in the toilets instead of drinking water, and the men's urinals are waterless!

The facility also holds a lecture hall, a classroom with a lab containing cutting-edge equipment that allows research and distance learning. Critters such as hermit crabs, a turtle and an alligator, all native to Georgia are also on display. All of this for the low admission price of \$7 for Gwinnett County residents and \$10 for non-residents. For more information on the Heritage Center, visit: www.co.gwinnett.ga.us/cgi-bin/gwinty/envhc/Home.do



FATHER AND SON PADDLE FOR TRASH

In September, a father-son duo took a week long excursion down the Chattahoochee River from Buford Dam to Bartlett's Ferry Dam above Columbus. Along the way, they picked up more than 100 bags of trash, partnering with Governor Perdue's new anti-litter campaign.

As volunteers for the Chattahoochee River National Recreation Area, **Mike Simpson** and his 26-year old son, Chris, spend so much time picking up trash that they say it

is second nature to them. Even so, they were stunned to see the amount of trash and other debris in the river below the confluence of Peachtree Creek and the Chattahoochee. This creek and other tributaries that drain Atlanta's most urban sections contribute the majority of the trash, often flowing to the river through storm drains.

Floating Refrigerators

In addition to the usual array of tires, plastic, Styrofoam and balls of every description, the Simpsons saw two floating refrigerators that they were unable to remove. Mike says that the river's plight brought him to tears several times. Now he wants to do something about it.

With help from the International Fire Fighter's Union, Mike and UCR will develop a long-term cleanup plan to tackle the floating and embedded debris in the main stem of the river below Peachtree Creek. We are looking for corporate sponsors to help with the project. *If you know someone who might be interested, please contact Birgit Bolton at bbolton@ucriverkeeper.org or 404-352-9828 ext.24.*



Photo credit: Mike Simpson

Photo credit: Desiree Doucet



(L-R) Ray, Richard, Chuck and Joel on the River.

Anticipated, accomplished...

These words describe the recent *Paddle Mania Trip* led by Richard Grove from Abbott's Bridge in Atlanta to Franklin, Georgia on the Chattahoochee River. After paddling through the day and the night, the four participants arrived tired, but with a sense of accomplishment—102 miles and 26.5 hours later.

"In the end, the trip was everything that we hoped it would be and everything that we feared—all rolled into one river adventure."

HOW A CURIOUS GEOGRAPHICAL ACCIDENT 'BEHEADED' THE CHATTAHOOCHEE RIVER BASIN

One hundred years ago, geologist Douglas Wilson Johnson explored an area south of Tallulah Falls and found, as he anticipated, "beautifully rounded and water worn" pebbles and large cobbles in the long-abandoned valley of the Chattooga River. (*Drainage Modifications in the Tallulah District, 1907*)

It is a curious and little-known fact that not so long ago, geologically speaking, the upper Chattahoochee River watershed was approximately twice the size of the present watershed. In fact, it occupied all of the mountain area south and east of the Blue Ridge Divide, including present-day Highlands and Cashiers, North Carolina and a portion of western South Carolina.

What caused the waters of the Chattooga and Tallulah Rivers, currently in the headwaters of the Savannah River, to be diverted from the Chattahoochee? A geologic process known as "stream capture".

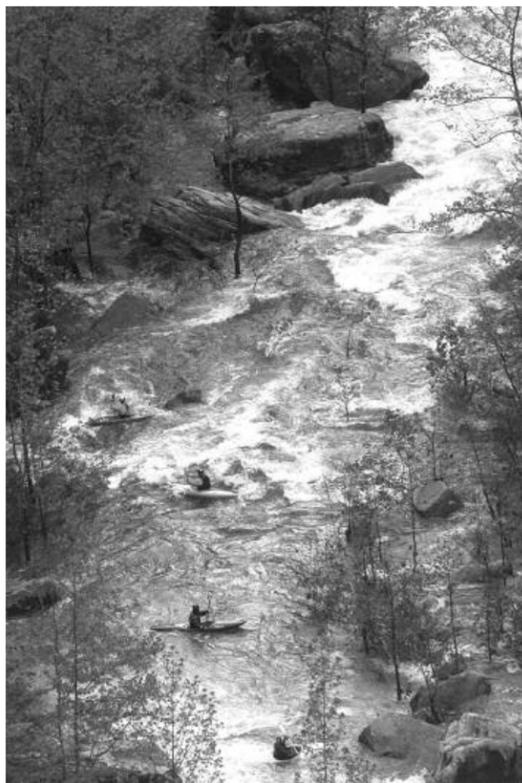
River Piracy

Stream capture, also known as "river piracy" or "stream beheading" occurs when one stream flowing in a lower region erodes uphill and intersects the path of a stream flowing at a higher elevation. This results in the "capture" of all of the water that is upstream and diverts it downhill into the watershed of the capturing stream.

Through careful detective work, geologists have determined that the Chattahoochee used to flow from the Carolina mountains along a plateau above the Blue Ridge escarpment, below which the Savannah River flowed steeply through the Piedmont to the Atlantic Ocean. The Savannah was a faster-moving stream, which created conditions that encouraged it to erode steeply into the Chattahoochee's escarpment.

A 90-Degree Turn to the Southeast

When the headwaters of the Savannah breached the channel of the Chattahoochee, the waters in the upper portion of the Chattahoochee (including the Tallulah



Tallulah Gorge

Photo credit: Laura Noel/ Atlanta Journal Constitution

River) were diverted at the point of capture approximately 90 degrees to flow southeast into the basin of the Savannah. Because of the steep gradient of the capturing stream, the rates of flow of the Chattooga and Tallulah Rivers were dramatically increased—resulting in the dramatic waterfalls and precipitous sides of Tallulah Gorge and the famous rapids of the Chattooga River that we enjoy today.

A look at the map of north Georgia and the Southern Appalachians confirms this geographic history. The Chattooga runs in a southwesterly direction until it reaches a point just east of Tallulah Falls, where it takes a sharp elbow bend to the southeast.

River Rocks Tell the Story

Much of the direct evidence of this geologic event has been obliterated because it is an example of "remote capture", occurring long ago. A physical examination of the terrain between Tallulah Falls and Clarkesville and the present Chattahoochee River provides some proof that a large river once flowed through this area. In road cuts and in some fields, it is possible to see well-rounded boulders, smooth rocks and polished pebbles that are characteristic of river stones; yet, they are located miles away from any present river.

Another Stream Capture in the Making?

The USGS topographic map reveals another stream capture in the making. Tributaries to the North Oconee River, which flows into the Altamaha River and then the Atlantic Ocean, are eroding into the ridge east of Lake Lanier—about 100 feet below the lake level. Over geologic time and unless restrained by man, these streams will erode through the ridge to capture all of the Chattahoochee's water north of that point...

This article is a condensed version of a paper prepared by James Groton, a retired Atlanta attorney who describes himself as an amateur geologist, lover of nature, hiker, sometime river paddler, and map freak.



UCR's Boat Captain Harlan Trammell.

CAPTAIN'S CORNER NEW PONTOON BOAT ADDS TO UCR FLEET

Thanks to a grant from the **R. Howard Dobbs, Jr. Foundation** and an in-kind contribution from several dealers, we have added a 22-foot pontoon boat to our fleet. **Smokercraft Boats** in LaGrange, Georgia sold us a hull for cost and **Honda Marine** donated a brand new bf 90 four-stroke outboard.

The boat will be used to take larger groups on deeper areas of the river that will handle such a vessel and to lakes, such as Morgan Falls and West Point. The vessel is uninspected, so the capacity for its commercial use—any use other than solely for pleasure, such as data collection—will be 8 total and 10-12 for recreational use, such as touring. This restriction is based on the new Coast Guard recommendations of 185 lbs per passenger.

Honda Continues to Power our Programs

With the very fuel-efficient, dependable, Honda model bf 90 horsepower four-stroke outboard motor, I expect the boat to have a 20 knots cruise under commercial use. Speed will vary on the weight aboard and prop used; I am still reviewing prop data at this time. The fuel consumption

on the bf 90 is approximately 8 gallons per hour at wide-open-throttle and much less at 3/4 throttle (cruise speed). The 12-gallon fuel capacity will give the boat a safe range of about 50 miles at cruise speed.

We will have a high capacity double-axle trailer, so we will be able to go pretty much wherever we want over the road with it. Larger groups will be able to see other rivers and lakes as needed. The pontoon boat is quite comfortable with four couches, carpet, set-up deck tables, drink holders, bimini top and ample storage with a lockable area. Our passengers will definitely ride in style, as they learn about the river!

The name of the vessel was determined by auction at our annual Patron Appreciation Dinner (*see page 2*). UCR's board of directors purchased the boat's naming rights in honor of our founding director, Sally Bethea, so that she could name the boat after her longtime companion—Molly B, a mostly-black lab dog. *The Molly B* will be prominently displayed on the bow. We look forward to years of dependable service from this fine addition to our fleet.

GLOBAL WARMING

Continued from page 1

changes in soil moisture.

Based on these models, conditions will either become more warm and moist, or more hot and dry. The models that predict a warm-moist climate show that, in some areas, there will be decreases in rainfall. In areas where higher precipitation occurs, like Georgia's coastal region, those rain events will become more extreme with heavy, violent rains that will cause increased soil erosion and flooding—already a serious problem in urban areas where development has destroyed stream buffers, floodplains and wetlands.

Conserving Water, Reducing Energy Consumption

It takes a lot of energy to develop a water supply source, pump the water, treat it to drinking water standards, deliver it to homes and businesses, then deliver it to a wastewater treatment plant, and treat it *again* to make it safer for discharge into streams. Every time a household, business or industry finds a way to use a little less water, we reduce the volume in this cycle—saving water and energy.

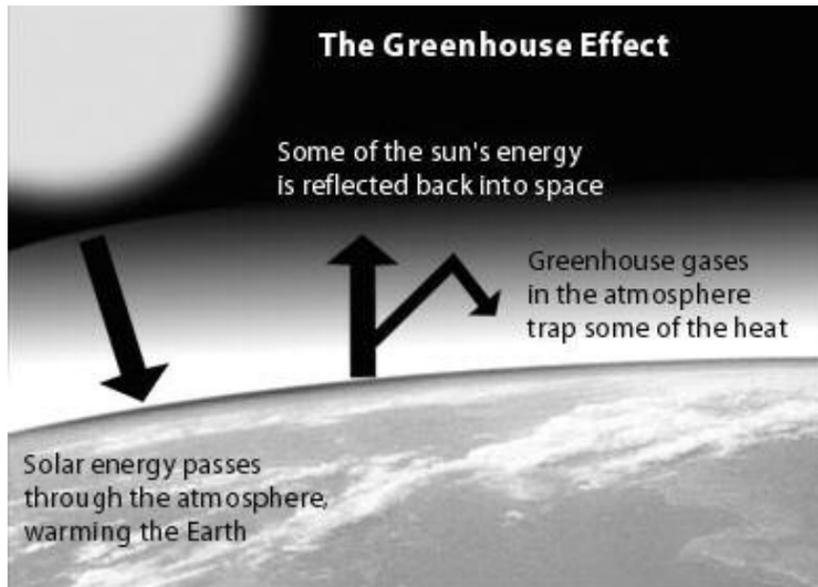
A big percentage of most household energy use is water-related, usually 20%, often 40% or even more. Water conservation can help reduce energy use by 10-20% in just a few years and by more in the next 50 years. Through water efficiency in homes, businesses, industries, utilities and cities, we will also reserve more water to meet the needs of growing populations and healthy rivers.

As the world's largest user of energy on a per capita and absolute basis, and as one of the most affluent and technologically-advanced, our country has the opportunity and the imperative to lead the way on greenhouse gas reductions. Proven technologies, practices and programs that can pay for themselves are the low-hanging fruit that must be grabbed and implemented now.

And, there are other water-related ways to reduce our energy consumption: reuse wastewater and find ways to use stormwater to meet water needs; in other words, integrate the management of drinking water, wastewater and stormwater systems. Innovative technologies may also reduce major consumptive uses of cooling water in power plants.

Our Role in Global Warming

Watershed and riverkeeper groups that work with local communities on practical, site-specific projects have tremendous strengths to bring to the



Graphic credit: Heather Trueman

task at hand—to help reduce our water use and energy consumption and thereby the greenhouse gases that are dramatically changing our climate.

As one example, the time has come to *mandate* that metro Atlanta utilities conserve water—not just to reduce the impact on our streams from increasing withdrawals, but also to decrease amount of energy that is used in the water delivery cycle. We believe that the local utilities in the 16-county metro region should be required to conserve specific amounts of water in the next ten years with interim benchmarks, doing so by whatever means they find most effective.

While Upper Chattahoochee Riverkeeper has actively promoted legislation and specific conservation measures at the Metro Water Planning District over the past year, we have not seen much progress to date. Some business leaders would rather rely on voluntary conservation programs and educational materials. Such approaches might have been useful several decades ago, but we no longer have time to waste. Acting now is the only responsible thing to do—for ourselves and our grandchildren. *See page 4 for other ways to reduce your "carbon footprint".*



Photo credit: ANDY SHARP/Atlanta Journal-Constitution

Temperatures climbed into the 80's in October, which made Sape Creek, a tributary of the Chattahoochee, surprisingly warm.



SAVE THE HOOCH AND STOCK THE STREAM!

SweetWater Brewery's *Save the Hooch Campaign* has been a huge success—thanks to those of you who purchased the great SW beer and bought “give your liver to the river” paper fish at the forty bars and pubs that participated in the program during August and September. Since Chattahoochee River water, treated by the city of Atlanta, is a component of SweetWater's product, they have a vested interest in making sure that the river is clean, in addition to giving back to the community.



The brewery donated a portion of the proceeds from the sale of every single case of beer sold during these months to support UCR's river advocacy programs and to help stock the Chattahoochee, working with the Georgia Council of Trout Unlimited and the state Department of Natural Resources. Over \$7,500 was raised from the paper fish sales that were available in participating bars. Proceeds from the sale of beer cases are still being tallied.

Popular Local Microbrewery Gives Back

SweetWater is a 30,000-barrel per year microbrewery located in Atlanta that specializes in producing aggressive West Coast style beers. In 2002, SweetWater became the first, and is still, the only brewery east of the Mississippi to win “Small Brewery of the Year” at the Great American Beer Festival. The taste for SweetWater has grown throughout the Southeast. UCR commends Sweetwater for their commitment and dedication to cleaner water. Says SweetWater's Steve Farace, “We have all used the river's waters for fun, beauty, fishing, relaxation, beer, and survival and we must act to ensure we can continue to do so.”



Sweetwater had many “Save the Hooch” displays such as this one in Kroger stores throughout metro Atlanta.

LOOKING FOR A RIVER-FRIENDLY HOLIDAY GIFT?

Give the gift of clean water by supporting UCR's programs with the purchase of one or more of the special items listed below—for yourself, your family or your friends. To order, please call us at 404-352-9828 or go on-line to our store at www.chattahoochee.org. Prices include shipping and handling.

UCR GIFT Membership - \$25

You are already a member (thank you!), so why not give your friends and family a membership as well. We will send a gift card inside of our new UCR water bottle. See enclosed envelope for membership levels.



EBB FLOW T-Shirt - \$15



This trendy T-shirt comes in a women's cut, as well as a men's cut. The black tee has pearlized lettering and will create conversation whenever you wear it!

UCR T-Shirt - \$15



White cotton UCR T with blue sleeves comes in men's sizes as well as a women's babydoll cut.



UCR Nylon Backpack - \$10



Whether day hiking, running errands or going to the grocery store, this lightweight pack is trendy, durable and easy to store.

Hemlock T-Shirt - \$13



Buy a T-shirt and help save the Eastern Hemlocks that grow beside our mountain streams. Natural eradication of the Asian insect, Woolly Adelgid, is sought through the establishment of a beetle lab at North Georgia College. Dark blue in color.

Riverkeeper Cap- \$15

Enjoy this 100% cotton Bedford card twill cap washed for softness with pewter buckle and grommet closure.

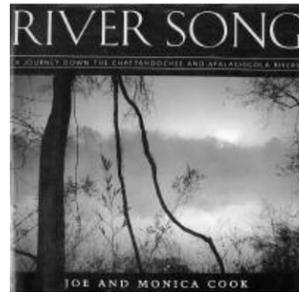


Riverkeeper's Guide to the Chattahoochee - \$12

If you are looking for trailheads and access points to the Chattahoochee, this is the book. A wonderful gift for those who love the river or for those who are just getting acquainted with all it has to offer. By Fred Brown and Sherri M. L. Smith

RIVER SONG (hardcover) \$30 Holiday SALE!

Beautiful coffee table book about a Chattahoochee River journey by Joe Cook and Monica Cook.



Waters to the Sea DVD - \$25 Holiday SALE!

This interactive CD/DVD takes the viewer on a virtual journey down the Chattahoochee River to the Gulf of Mexico, including river history, ecology & water quality. Great experience and learning tool for children and adults alike. Includes teachers guide.

RIVERS OF AMERICA - \$40 NEW RELEASE!

With stunning photos of rivers all across America and an engaging, personal commentary, author/photographer **Tim Palmer** reveals the variety and vitality of our natural waterways and explains why rivers are important in our lives. Over a 30-year period, Tim has canoed or rafted on more than 300 rivers nationwide and has worked on conservation campaigns to protect many of them.

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River Matters

The Beetle Battle Paddle November 11
A benefit to help save the Hemlock Trees
9:00am-2:00pm
To find out more details or make reservations, visit www.canoegeorgia.com or call 706-864-7117.

Adopt-A-Stream Biological Workshop November 18
Chattahoochee Nature Center
Roswell, GA
For more information, call 404-730-8006

12th Annual X-MAS Party to Save the Planet - Experience the Elements December 8
The Tabernacle in Atlanta.
For information, visit www.xmasparty.org

2007 General Assembly Begins January 9

Georgia River Network Annual Conference February 16-17
Milledgeville, GA
For more information, contact dana@garivers.org

Paying for Sustainable Water Infrastructure Conference March 21-23
For information and to register, visit:
<http://www.payingforwater.com/>

Georgia Water Resource Conference March 27-29
"Managing Georgia's Water into the 21st Century"
University of Georgia, Athens.
For information, visit www.GWRC2007.org,

5th Annual Back to the Chattahoochee River Race & Festival June 9
For more information, contact bbolton@ucriverkeeper.org

Paddle Georgia Ocmulgee River June 23-30
For more information, visit http://www.garivers.org/paddle_georgia/pghome.html