



DIVISION OF WATER RESOURCES
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

STREAM WATCH NEWS

Fall 2000

Issue 39

Letter From The Coordinator

Dear Friends of North Carolina Waters:

Stream Watch groups have a significant effect on waterways all over this state. From the smallest headwater streams to the largest rivers, fellow North Carolinians want to know about your successes, trials or tribulations. Please share your experiences by submitting an article to *Stream Watch News*. It is one way we, as environmental stewards, can stay connected. Thank you for your continued efforts and to the new groups just starting out.

We want to hear from **you**.

Division of Water Resources

1611 Mail Service Center - Raleigh, NC 27699-1611

Sincerely,

A handwritten signature in black ink that reads "David Wojnowski".

David Wojnowski



Cultivating a Voice for Rivers in the Next Generation

Chad L. Hallyburton
Ellerbe Creek Watershed Association

In October of 1999, *Wildlife in North Carolina* magazine released a special issue titled "Rivers of North Carolina" which contained an article examining the current state of urban waterways. This piece, written by Chris Powell, began by querying, "Why shouldn't city kids have a chance to play in clean streams?" Put some hard thought into this question, and you may find opportunities for your Stream Watch group to introduce the next generation to some of our most valuable and threatened natural resources. At the same time, you can build overall community support for your group's efforts and prepare those who must take up the work when your toils end.

Through involvement in Stream Watch, many of our organizations strive to raise awareness and support for aquatic conservation. Take a moment to consider the traits in your members and the community you serve which would help you reach this goal. Your list



Snorkling in Ellerbe Creek

continued from page 1

should probably include the following: energy, curiosity, and open minds. Through my work as a teacher, museum youth program leader, and Stream Watch volunteer, I've been lucky enough to talk with many different kids about their relationships to streams and waterways. When I take a group of kids into a stream, whether they are affluent or inner-city, there is no lack of energy, curiosity, or open mindedness. Young people can provide the "get up and go" your group needs; however, the benefits don't stop there. They can also help you take your message to the streets.

A renewed national desire to offer activities promoting healthy development in young people is perhaps a positive aspect of the bad press our nation's youth have recently received. By involving youth in Stream Watch organizations, we can tap into this wellspring of community support. Not only do we gain access to a larger group of stake-holders (the parents and families of young volunteers), we stand a better chance of attracting the attention of the media and government agencies.

I recently led a group of young volunteers on an exploration of a local urban stream. The kids surveyed aquatic life, organized a stream clean-up, and presented their findings at a regional scientific meeting. These few activities resulted in press coverage by two newspapers and the newsletters of a local neighborhood association and a museum. The kids also gained the attention and support of the museum's employees by inviting them to help remove trash from the stream. Also, our city's Storm Water Services staff taught the group to sample aquatic invertebrates, and is now interested in pursuing further collaborations with the sponsoring Stream Watch group. That's what I call a big community awareness "bang" for very few "bucks."

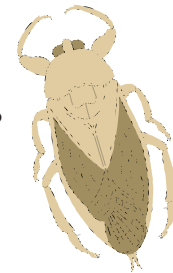
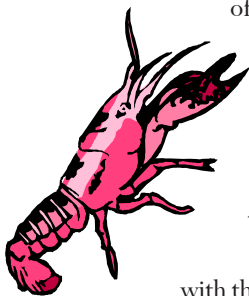
Bringing youth into the activities of your Stream Watch group takes time, energy, and planning. Are the rewards worth the effort? I believe they are. A Durham high-school student (and future community leader) recently said to me, "I've lived right by that stream (Ellerbe Creek) all my life, and until now I've never visited it or had any idea what lived there." This young person has taken the first step toward ecological stewardship. She has developed an attachment to a particular place in her surroundings, and has realized her link and responsibility to that place. As Alan Gussov said in *A Sense of Place*, "A place is a piece of the whole environment that has been claimed by feelings... We are homesick for places, we are reminded of places which haunt us and against which we often measure our present." If we can transform our urban waterways from hidden drainage ditches into places of personal worth, we have set them on the road to recovery. With the help of our youth, we have a fighting chance.

Scouting for Macroinvertebrates in Taylorsville

Cub Scout Pack 272 in Taylorsville, NC has been scouting out Stirewalt Creek in the Catawba River Basin. The Scouts have enjoyed learning about what type of critters live in the stream near the church where they hold their meetings. They have found various aquatic insects such as: water striders, backswimmers, and damselfly larva. In addition to nature walks, the Pack does litter pick-ups.

Increasing their knowledge of Stirewalt Creek and helping to keep the stream clean is fostering a stewardship ethic that will hopefully continue into their adult lives.

Judy Abernathy (leader, Cub Scout Pack 272) also volunteers her time with the Foothills District Day Camp. This summer she lead a group of Webelos in the Pisgah National Forest at Mortimer where they investigated Thorps Creek.



“People everywhere are being asked to use water more efficiently,” Nelson states. “The idea of conserving water becomes relevant when citizens are challenged to use less water and still meet their needs.”

To purchase a copy of the Conserve Water Educators Guide or Conserve Water Student Activity Booklet, contact The Watercourse at (406) 994-5392 or by email at lhveem@montana.edu.

Mark Your Calendars

Plan to join us for FOOD and FUN at the first River Revival
An outdoor environmental educational festival about rivers water quality, your effects on it, and its effects on YOU! Come out for live performances, hands-on activities, food, activities on the lake, and fun!

Saturday, June 9, 2001
10:00am-4:00pm
Lake Benson Park in Garner, NC

Stay tuned for more information!
Or call Wake Soil and Water Conservation District
at (919) 250-1050.
And remember: We all live downstream!

Sponsored by these and other
community partners:
Wake County, Town of
Garner, NC Department of
Environment and Natural
Resources, US
Army Corps of Engineers,
Neuse River Foundation,
Triangle Land Conservancy,
Lower Neuse Initiative.



supported and run by U.S. soil and water conservation districts, forestry associations and other sponsors in the United States and Canada, including the U.S. Forest Service and Carhartt.

More than 600 volunteers, students and advisors participated in this year's competition to make it a success.

The Canon Envirothon represents the third and final round in a competition that began early this spring in communities across the United States and Canada. More than 500,000 students competed against teams from other high schools in local contests, with the winner moving on to state and province levels. Environmental professionals, including university professors, soil and water conservation scientists, game biologists and water resources specialists, selected winning teams. The competition began in 1979,

sponsored by three Pennsylvania soil and water conservation districts. In 1993, the event became an international competition. The 2001 Canon Envirothon will take place in Raymond, Mississippi. For more information on the Canon Envirothon, log on to www.envirothon.org, or, for North Carolina Envirothon information, contact Steve Bennett, 919-571-4700.



Dave Vogel (center), Soil and Water Director, congratulates the Fred T. Foard High School Team, first place winner in the 2000 Envirothon.

New Conserve Water Educators Guide Now Available

BOZEMAN, MT - In the midst of one of the driest summers in many parts of the United States, the headquarters of The Watercourse and International Project WET (Water Education for Teachers) announces the release of the Conserve Water Educators Guide, a new publication of The Watercourse's national water conservation education division.

"The need for water conservation education is greater than ever," states Dennis Nelson, Executive Director of The Watercourse and International Project WET. "As many regions of the United States face drought conditions and water shortages caused by reduced snow pack or below average precipitation, water systems are being asked to meet growing needs with shrinking supplies. The new Conserve Water Educators Guide is designed to help educators, water managers, and community leaders to inform others about basic water science topics with a focus on water conservation."

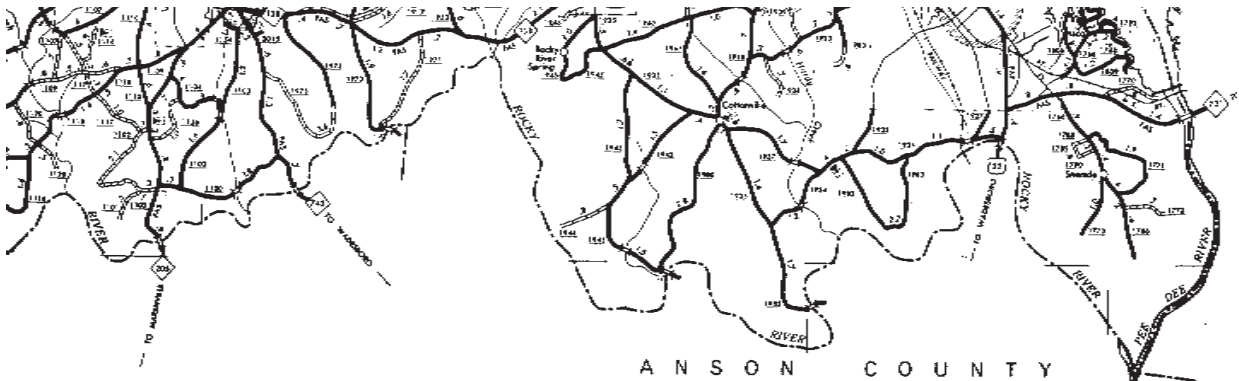
A companion piece, the Conserve Water Student Activity Booklet, and the Educators Guide, provide teachers and students with contemporary materials. "The colorful 16-page Conserve Water Student Activity Booklet is filled with challenging games and activities and helps children understand what they can do to conserve water," says Sandra DeYonge, Project WET USA Director.

The release of the Conserve Water Educators Guide and the Conserve Water Student Booklet is part of The Watercourse's ongoing commitment to provide educators, resource managers, and interested citizens with contemporary, scientifically accurate water science education publications and programs. Established in 1989, The Watercourse currently has 16 water education divisions (i.e., watersheds, wetlands, and ground water) and programs in 48 states, the US Islands, Canada, Mexico, the Philippines, and the Peace Corps.

The Webelos found crayfish, salamanders, caddisfly larvae and a water snake.

Thanks go to Judy Abernathy, and other parents and adults like Judy, for providing outdoor learning opportunities for today's youth.

Clever Clovers 4-H Stream Watchers



The Rocky River is the main river of Stanley County. If it is polluted we would be in serious trouble. Some houses have wells that are very close to Rocky River. If the river is polluted this could contaminate the wells. Recently the Clever Clovers 4-H club of Stanfield tested the river for different things through the Stream Watch program. What they found was appalling! The river is not in good condition at all! The only life forms that are present are ones that are tolerant of pollution, the ones that cannot live in large amounts of pollution cannot be found in Rocky River.

While the Clever Clovers are working diligently to clean up parts of the river, it is not enough. With all the people moving into Stanley County we must be careful about runoff from construction. Construction sites must have silt fences to keep soil runoff from entering the river. We should be aware of other forms of pollution too. If you see a polluter it is your duty as a citizen of Stanley County and the Earth to report them. If we all play our part we can clean up the river and make it a healthy habitat for all kinds of life forms.

John McMillian
Clever Clovers 4-H Club

Cheoah River: A Balance in Question

by Fred Tarver

When the Tennessee Valley Authority was created in 1933, the Aluminum Company of America (Alcoa), already had three dams in the Little Tennessee Basin. Built by Alcoa to provide electricity to its aluminum plants in Alcoa, Tennessee, the Cheoah Dam and the Calderwood Dam were completed in 1919 and 1930, respectively, and impound the Little Tennessee River; the Santeetlah Dam was completed in 1928 and sits on the Cheoah River, a tributary of the Little Tennessee River.

The Santeetlah Dam captures 176 square miles of the Cheoah River's drainage area, including the waters of Tulula, Snowbird, Santeetlah, and Sweetwater creeks, to form Santeetlah Reservoir. The water in Santeetlah Reservoir is diverted through pipe and tunnel to spin the turbines of the powerhouse, located on the banks of the Little Tennessee River, five miles to the north. Except for infrequent spills to pass flood flows, less than three cubic

feet per second, or 0.6 percent of the annual average runoff, leaks through the dam to the Cheoah River below.

The Tallassee Project—Santeetlah, Cheoah, Calderwood and Chilhowee Dam on the Little Tennessee River--was licensed in 1955 by what is now known as the Federal Energy Regulatory Commission. The license for the project expires in February 2005. In preparation for filing a new license, the licensee, Alcoa Power Generating Incorporated (formerly Tapoco Incorporated), is funding various inventories, surveys and studies to determine the impacts and assess the value of project operations. The licensee is corresponding and meeting with federal and state agencies, local municipalities, non-government organizations and private citizens to address concerns, review data and discuss conclusions.

The dams have benefitted the local economies of eastern Tennessee and western North Carolina by providing jobs, recreational opportunities, and desirable real estate. The dams, however, have modified the ecology of the rivers, especially the Cheoah and Little Tennessee Rivers.

Cheoah comes from the Cherokee word “tsiyahi” which means “otter place.” The impact of the Santeetlah Dam is most apparent within the reach of the stream from the dam to the first large tributary, Gladdens Creek, 1.3 miles downstream. A walk along this stretch of the Cheoah River reveals a surprising blend of aquatic plants: cattail, watershield, pondweed and watermilfoil. The rocky bottom is covered with a thick layer of silt. Alder trees and other terrestrial vegetation have stabilized the sediment in the channel, forming hummocks which redirect the flow into braided rivulets. Beaver dams help to pond the meager flow.

Gladdens Creek and the other 19 major tributaries rejuvenate the Cheoah River as it journeys the nine miles from Santeetlah Dam to its confluence with the Little Tennessee River. However, when it rains, the Cheoah River runs cloudy with sediment carried from bare ground in the tributary watersheds. Lacking the flow to transport the materials, the sediment accretes in the channel.

Virginia spiraea, *Spiraea virginiana*, was identified only recently along the Cheoah River. *Spiraea* is a member of the rose family and one of the rarest shrubs in North America. The habitat of the plant is rocky, flood-scoured riverbanks with well-drained, wet sites in full sun. The reduction in frequency of scouring flows in the Cheoah River has allowed other woody plants to encroach and shade the spiraea.

The Cheoah River is also home to the Junaluska salamander, *Eurycea junaluska*. First discovered in 1939, the Junaluska salamander was determined to be a new species in the mid-70's using specimens collected in the Cheoah River drainage. This small, dull yellow-brown salamander requires clean, clear streams with abundant rocks and logs. In 1998, a search failed to relocate a known Junaluska population near the Santeetlah dam; however, Junaluska adults were found at night, during a rain, on the road adjacent to the lower Cheoah River in 1999.

So far, mussels surveys in the Cheoah River have yielded a single live individual, an endangered Appalachian elktoe, *Alasmidonta raveneliana*. The elktoe was widely distributed in the upper Tennessee Basin, but has been extirpated from many streams, including a tributary of the Cheoah River, Tulula Creek. The elktoe inhabits cool, well-oxygenated waters of moderate to fast-flowing streams. It is adversely impacted by siltation and flow modification. The banded sculpin is known to be a suitable fish hosts for the parasitic young, or glochidia, of the elktoe.

The waters of the Cheoah Basin are a valuable resource. The question of how to allocate this resource for the needs of man and the needs of nature will be addressed during the relicensing period. Whether it can be answered to the satisfaction of all the parties concerned remains to be seen.

used cleaning fluids, and other pollutants, stickers with the message AProtect South Ellerbe Creek - Rain Water Only!@ will be placed above storm drains in neighborhoods along the creek.

For more information: <http://www.owdna.org/fosec>

Wilson Creek Designated Wild and Scenic

The Wilson Creek Wild & Scenic designation was signed into law by President Clinton on August 18, 2000. The legislation that made this possible was introduced and pushed hard by Congressman Cass Ballenger (R-NC). Thanks go to all Carolina Canoe Club (CCC) members who responded to the American Canoe Association's (ACA) request for help with this matter. Since ACA began pushing for this designation in 1995, CCC has been the most responsive club in the state. Articles have appeared in "The Paddler" and club members have written hundreds of letters to members of Congress.

In the 48 hours before the key vote in the House of Representatives CCC members responded with over 150 letters. Since then the number of letters has soared to over 300 as ACA requested that club members contact senators Helms and Edwards. As a result, Wilson Creek (located in the Pisgah National Forest) is now better protected and will continue to be a spectacular place to paddle.



NC Students Take 9th Place at International Envirothon Competition

NOVA SCOTIA- After six days of intense competition, five high school students from Catawba County, North Carolina captured ninth place at the 2000 Canon Envirothon competition that concluded August 5th at Acadia University in Wolfville, Nova Scotia. The students competed against teams from 40 states and nine Canadian provinces for college scholarships totaling \$25,000. This was the first year Canada hosted the finals of North America's largest environmental science contest.

North Carolina's Fred T. Foard High School students participated in four days of hands-on study and research about soils, forestry, aquatics, wildlife and wetlands. Team members Lonnie Coulter, Gabrielle Scronce, Christian Rudisill, Lenae Ruffner and Porscha Yount were coached by advisors Steve Bennett, an Area Coordinator for the NC Division of Soil and Water Conservation, and Denise Coulter of the school. The team was sponsored by The NC Division of Soil and Water Conservation and the State Envirothon Committee of the NC Association of Soil and Water Conservation Districts. Team members won a plaque, \$400 cash, medallions for each student and Canon Sure Shot cameras for each student. The Catawba Soil and Water Conservation District won their choice of a camera or binoculars.

The teams began competing August 1st as the students learned about the natural resources of the Annapolis Valley, an area filled with orchards and lush farmland that lies within sight of the majestic Bay of Fundy. The students demonstrated their knowledge in hands-on field tests, with scores from these tests representing over half of the total score they would receive at the competition's end.

The Canadian and Nova Scotia Forestry Associations hosted this year's event, which is

Clean Water is Par for the Course in Durham County

by Andy Fisher, NC State University

A Durham County Neuse Education Team project is showing local planners and engineers that clean water can be par for the course. Earlier this year, the team planted a stormwater wetland near the entrance of the Hillandale golf course in the upper portion of the Neuse River Basin. The wetland is about one third of an acre in size and treats runoff from a 90 acre watershed that drains into Ellerbe Creek, which then empties into the Neuse River. The site is down stream of Interstate 85 and blends seamlessly into the lush landscape one would expect to find in a golfing community. From a scientific perspective, stormwater wetlands are the most effective water-management tool for dealing with nutrient removal, such as nitrogen, according to Bill Hunt, Neuse Education Team member and stormwater specialist.

“As far as water-quality designs, stormwater wetlands rank at the top of the list for removing such things as nutrients and metals,” he says.

The project began with Neuse Team members Craven Hudson and Bill Hunt looking around the Ellerbe Creek area with a Durham City Engineer and a concerned citizen. “Bill Hunt spotted the feeder stream along the golf course parking lot and remarked that it would be a good spot for a stormwater wetland,” says Craven Hudson. “I contacted golf course superintendent Roy Clark to explain the demonstration idea.”

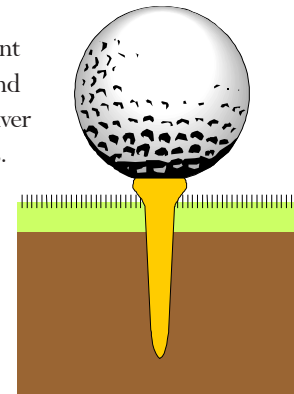
From that point on, the project caught fire. Clark agreed to the project immediately. “Every year we’ve had sediment and flooding problems with that area, so when they said they could help, I listened,” says Roy Clark, Hillandales’ superintendent.

Hudson and Hunt wrote a grant proposal to the Upper Neuse 319 Nonpoint Source Pollution (NPS) Team. The Team, which is comprised of local citizens and government agencies concerned with water quality issues in the upper Neuse River basin was established by the Department of Environment and Natural Resources. The Team secured funds for the

Hillandale project, with the sponsorship of the City of Durham, through a grant program administered by the North Carolina Division of Water Resources. The folks downtown liked the idea and granted close to \$16,000 for the project. The end result: not only does the Neuse

Education Team have yet another demonstration site for its educational efforts, but the Hillandale community has shown its commitment to improving Neuse River water quality.

Just as important as the scientific merit of this demonstration project is the cooperative spirit that has been present since day one. “We pulled together outside funding, involved the City of Durham Stormwater Services, Durham County, the Ellerbe Creek Watershed Association and the golf course,” says Hudson. “When it came time for the actual planting I was impressed with the number of volunteers Steve Hiltner (President of the Ellerbe Creek Watershed Association and Stream Watch group leader) had recruited to help us out. This project is what Extension is all about.”



The Ellerbe Creek Watershed Association

There are two groups working to protect Ellerbe Creek in Durham. One group, called the Friends of South Ellerbe Creek, focuses on a south branch originating in the 9th Street area. The other, the Ellerbe Creek Watershed Association (ECWA), is a non-profit exploring restoration opportunities along the creek’s entire length, from its origins in western Durham to



its outlet at Falls Lake.

ECWA is dedicated to making Ellerbe Creek an asset for Durham. Though currently degraded both in water quality and appearance, the creek still has many fine features worth preserving and restoring. An initial project was to transform eroded ditches in a local park into wetland gardens full of the many native wildflowers, rushes and sedges that thrive in wet, sunny areas.

Last year, the group gained official 501(c)(3) non-profit status in order to acquire 6 acres of wooded property along Ellerbe Creek through a Durham County matching grant. Like most urban woods, the six acres are overrun by exotics like wistaria, Japanese honeysuckle and English ivy. Each weekend, ECWA volunteers work to replace the exotics with a more diverse community of native plants.

Eventually, this urban reserve will provide a public nature trail and a place where local school groups can learn about piedmont ecology and the creek. Despite the urban setting, beaver, herons, barred owls and kingfishers are all residents or frequent visitors to the reserve.

ECWA has had marked success working with other neighborhoods, state agencies and local businesses to bring positive change to the watershed. A collaboration between NC State, Hillandale Golf Course and ECWA has yielded a new stormwater wetland. North Carolina's Wetland Restoration group is considering stream restoration projects in Northgate Park and elsewhere along the creek.

One long-term goal is to help residents, developers and local government view stormwater as an opportunity rather than as a burden to be passed off on downstream communities. This includes the integration of stormwater wetlands and rainwater gardens into landscaping for new developments and as retrofits in oversized parking lots. Other longterm goals for the organization include the establishment of a volunteer network throughout the watershed, preservation of Ellerbe Creek's headwaters and restoration of the creek's lower floodplain.

Chad Hallyburton, an educator at the Museum of Life and Science, leads ECWA's Streamwatch chapter. He and a summer intern have been sampling aquatic life throughout the watershed. Thus far, they have accounted for 18 of the 35 or so species known from Ellerbe Creek in recent history. Some interesting patterns of distribution are beginning to emerge.

Exploring Ellerbe Creek and its possibilities is proving to be an adventure. It has turned out to be an opportunity not only to get to know the creek, but to meet the many people who live along it and have taken an interest in its potential.

Stephen K. Hiltner

President, Ellerbe Creek Watershed Association

To learn more about Ellerbe Creek and ECWA, visit our web site at www.ellerbecreek.org

Friends of South Ellerbe Creek - A Community Effort

*F*riends of South Ellerbe Creek have been working hard to clean up sections of their adopted creek in Durham, North Carolina. Several successful cleanups have been a concerted community effort. A multitude of debris from glass and tires to a rusted wheelchair have been removed from South Ellerbe Creek.

To remind residents not to discharge motor oil, paint,



Stream Watch Welcomes New Groups

The North Carolina Stream Watch program would like to welcome the following groups who have joined our program



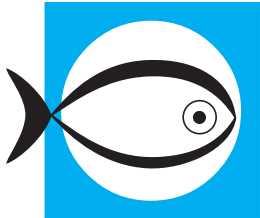
WELCOME ABOARD !!!

<u>Group</u>	<u>Adopted Stream</u>	<u>River Basin</u>
Bethesda Christian Academy	Stirrup Creek	Neuse
Conservation and Outing Club	Little Creek	Cape Fear
Cove Creek Stream Watch	Cove Creek	Watauga
Cub Scout Pack 272	Stirewalt Creek	Yadkin
Davidson College Stream Watchers	Wilson Creek	Catawba
Ellerbe Creek Watershed Assn.	Ellerbe Creek	Neuse
East Carolina University	Little Goose Creek	Tar-Pamlico
Future Black Scientists of America	Walnut Creek	Neuse
Inside Out Incorporated	Rock Creek	Broad
Lorax Stream Watch	Rocky Branch	Neuse
Museum of Life & Science Staff	Ellerbe Creek	Neuse
Museum of Life & Science		
Youth Partners	Ellerbe Creek	Neuse
NC Wildlife Canvassers	Beaver Dam Creek	Neuse
NC Zoological Park	waters within NC Zoo boundaries	Cape Fear
Rockingham County Watershed Preservation Coalition	Mayo River	Roanoke
Stoney Creek EcoRangers	Stoney Creek	Neuse

James B. Hunt Jr., Governor

Bill Holman, Secretary

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