

WATERSHED

A Newsletter of the Wood-Pawcatuck Watershed Association

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Winter 2013

Browning Mill Pond Trail Project by Denise Poyer

Anyone who's been to Arcadia Management Area knows what a great family hike the Browning Mill Pond Trail is. Starting at the parking area off Arcadia Road in Exeter, RI at the Browning Mill Pond Picnic Area, this 2.3 mile trek circumnavigates the entire pond. Traveling counter clockwise, you first walk through the beach area, then cross several bog bridges over wetlands and unnamed brooks, and even a few bridges over Roaring Brook. The trail skirts the Arcadia Warm Water Hatchery on the west side of the pond before meandering through a lovely pine forest and ending back at the parking lot. It's a great place to walk any time of the year.

This easy-to-follow trail wasn't always easy. Fifteen years ago the trail was overgrown with bushes and clogged with blowdowns and debris. The bog bridges were decaying and there was no bridge over Roaring Brook below the dam on the west side of the pond. At the urging of long-time volunteers, Charlie Hickox and Elly Heyder, WPWA decided to adopt this trail. Work began in 1998 on a number of projects to make the trail not only passable, but safe and enjoyable. WPWA staff and volunteers built the west-side bridge and the following year students from Chariho High School

and Boy Scouts from Troop 1 Hope Valley cleared and marked the trail and built bog bridges and small foot bridges. In order to help walkers stay on the trail and out of the hatchery property, the scout troop built a split rail fence along the boundary. Funding for all these projects came from the RI Trail Advisory Committee (TAC).



Eagle Scout volunteers from Troop 1 Charlestown work together to rebuild the split rail fence at Browning Mill Pond.

Since then, WPWA has endeavored to maintain the trail, always using volunteers. This trail has spawned a number of Scout project opportunities over the years. Most recently, WPWA and the Scouts partnered to replace the split rail fence. Weather had beaten it down over the last decade, and it had become an eye sore as well as a potential hazard. A TAC grant again provided funding for all the materials and rental of a post hole digger. Ben Nadeau, an Eagle Scout candidate from Troop 1 Charles-

town, agreed to take on the challenge. WPWA worked with RIDEM Forest Environment and Fish and Wildlife Divisions to organize access to the project area. Ben figured out the materials needed, ordered them, arranged delivery to the worksite, and solicited volunteers to help complete the project. Over the course of two weekends this past October 2012, 27 teens and adults replaced 300 yards of fencing. The Scouts also completed some additional trail maintenance work that really spruced the trail up. WPWA would like to thank Ben and the Scouts for improving the safety and beauty of Browning Mill Pond trail.

If you haven't done this hike yet, check it out in WPWA's [Walks in the Watershed](#) hiking guide, hike #7, Browning Mill Pond & Tefft Hill Trails (www.wpwa.org/shop.php). While on the trail we hope you appreciate all the volunteer hours that went into making this trail safe and enjoyable!



Drilling holes for the 300 yard long fence.

From the Executive Director

Thank you all for your annual contributions in late 2012 and early 2013. These are tough economic times for us all and we are working hard to stretch every WPWA dollar. Without your generous giving we would not be able to accomplish all that we do each year.

This winter WPWA has been undergoing a thoughtful and intensive strategic planning process that will further assist our efforts to protect the valuable natural resources of the watershed. Enhancing our fundraising capabilities is a top priority. You can help by encouraging friends and family to join our membership. Though our membership year runs from June to May, anyone who joins before June 2013 will enjoy a membership extension through May 2014.

With the addition of Heather to our team, we have an opportunity to expand the programs that we offer and we want your ideas. We are looking for creative ideas for new programs to offer, especially ones that draw people to our ever evolving campus. Email your ideas and why you believe they would be successful to info@wpwa.org. If we select your idea, you will win a \$50 gift certificate toward any of our programs or merchandise. Gift certificates make a great gift too!

Thank You For
Your Support,



THE WATERSHED GREEN CORNER

These articles are brought to you by RI NEMO - Produced by URI Cooperative Extension for RI Stormwater Solutions, a project funded by the RI Department of Transportation, in partnership with the RI Department of Environmental Management and RI municipalities. This article has been formatted by WPWA to fit this space.

It's Not Too Late For A Resolution That Will Keep You & Our Waters Healthier!

by Lisa DeProspero Philo and Lorraine Joubert, Rhode Island NEMO

By February, you might have decided that New Year's resolutions aren't for you after all. Take heart! You have another chance starting now, and we have a resolution that is sure to succeed: don't pour it out! We're talking about toxic chemicals, such as drain and oven cleaners, paint, and paint thinner, to name only a few. **When these are poured down household drains, storm drains, toilets, or on the ground, those chemicals end up in nearby waters.**

Rather than trying to figure out a safer way to dispose of those household chemicals, try using non-hazardous products when you can. There are many brands available at major grocery stores, although basic ingredients that you already have in your pantry can be just as effective. Lemon juice, vinegar, borax, soap, and baking soda, can be combined with hot water to create a variety of cleaners. A quick internet search of "natural cleaning recipes" will generate an endless variety of possibilities.

You just might find that these non-toxic cleaners are not only easier on local waters, but are also easier on your wallet!

This all-purpose cleaner is our favorite! Just mix and add it to a spray bottle:

- ½ cup vinegar
- ¼ cup baking soda
- ½ gallon of water

Of course, it would be nearly impossible to completely eliminate all toxic products from your household. So if you do have household chemicals to dispose of, please make an appointment at the Eco-Depot, a free drop-off at the Rhode Island Resource Recovery Corporation's facility at the Central Landfill in Johnston. Their contact information can be found online at: www.rirrc.org/resident/household-hazardous-waste/. For Connecticut residents, go to www.ct.gov/deep/cwp/view.asp?a=2718&q=325448.

And as always, if you're interested in learning about additional tips to help safeguard our waters, visit:

www.ristormwatersolutions.org



Thank you Don Bousquet for your cartoon donation!



The Polly Coon Bridge by Harvey Buford,

Hopkinton Conservation Commission

Before spring arrives, the first pedestrian bridge on the Wood-Pawcatuck Rivers will cross the Pawcatuck River, thanks to a RI Trail Advisory Committee Grant. The new bridge, which is a joint project of the Hopkinton and Westerly Land Trusts, will connect the two towns at the site of the former Polly Coon Bridge.

There is an old house foundation on the Hopkinton Land Trust's Grills Sanctuary, all by itself, down between the bluff and the Pawcatuck River. This was the home of Polly Burdick and Patty Coon in the 1840s. Somehow, one's first name and the other's last name were combined to identify the surrounding area and nearby bridge connecting to Westerly. Maps from 1854 and 1868 detail a road using Polly Coon Bridge to connect Chase Hill Road and Burdick Farm in Hopkinton with the Stonington Rail Road and beyond in Westerly.

I first came upon the remains of Polly Coon Bridge, the stone abutments and the center island, while canoeing downstream from Bradford. Just downstream, protected from the swift current by the Hopkinton abutment, was a promising place to land. Without knowing where I was, I climbed up that old driftway and soon spotted piles of junk cars. I was behind a local landmark, Perry Motors.

Back when Perry Motors was still operating, vandals stole car jacks and jacked the upper abutment and center

island stones into the river, partly damming the river. DEM pulled many of these submerged stones from the Westerly side and hauled them away. The Hopkinton side is less accessible by vehicle and the stone blockage on that side remained until recently. Hopkinton Land Trust retrieved these stones, restored the abutment and re-armored its sides for functional, cultural and aesthetic reasons before the new bridge work. While on site, the contractor stood up one of the numerous large quarry stones discarded along the driftway shoulder. Commoli Granite will inscribe this stone with the 2010 flood elevation.

In 1886, The Great Freshet (flood) began with a heavy fall of snow on top of hard, frozen ground. Next came two days of warm, torrential rain. All the rain and melting snow fed right to the rivers. Hopkinton lost Polly Coon Bridge and ten others.

continued on p. 7



Contractor restoring the Hopkinton abutment of the bridge prior to installation of the new pedestrian bridge. (Photo courtesy of H. Buford.)



WPWA MEMBERSHIP APPLICATION



Name(s) _____ Phone & Email _____

Address _____

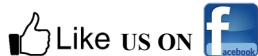
PLEASE SELECT YOUR LEVEL OF GIVING

\$35 Individual \$50 Family \$75 Contributor \$100 Supporter / Corporate \$250 Sponsor \$500 Patron \$1000 Benefactor

In addition to my dues, I am enclosing an extra, tax deductible, contribution of \$ _____ to remain anonymous? _____

Please Make Checks Payable To: WPWA OR Circle Credit Card Type: Master Card / Visa / Discover

CC # _____ Exp. _____ CSC # _____ Signature of Cardholder _____



Putting Rhode Island's Ecological Communities on the Map

by:

Paul Jordan, *GIS Services Division,*

RI Department of Environmental Management

Charles LaBash, *The Environmental Data Center,*
University of Rhode Island

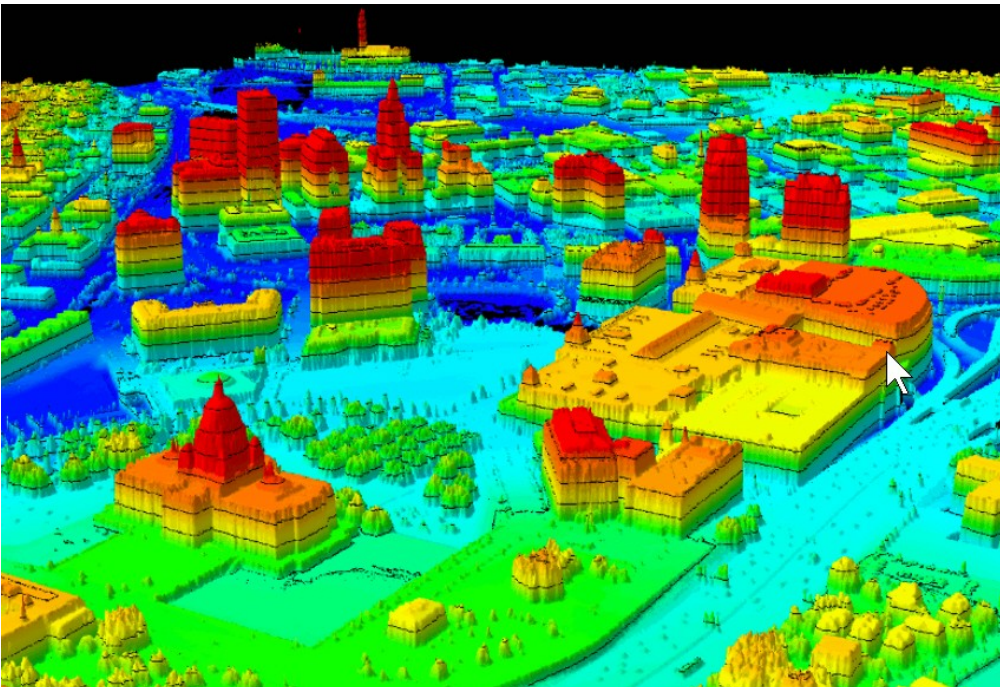
Peter August, *Department of Natural Resources Science,*
University of Rhode Island & WPWA Board Member

Rhode Island has the most comprehensive and detailed Geographic Information System (GIS) database of any state in the country. This is a result of a long history of cooperation among state and federal agencies in RI to create and maintain an open, shared database for all to use. Our small size helps too!

One of the cornerstone datasets in the RIGIS library is statewide land use. We have three generations of land use data, the first was developed from 1988 aerial photography, the second from 1995 imagery, and the most recent from 2003-2004 color orthophotography. The various versions of the land use data have served natural resource managers and planners very well over the decades. However, ecologists have longed be-moaned the fact that our rich and diverse natural communities are generalized into a small number of very broad classes – brushland, deciduous forest, coniferous forest, and mixed forest. This shortcoming is about to end, a new Ecological Communities dataset is under development.

Creating a detailed ecological communities GIS dataset is far more complex than appears on the surface. Many pieces must come together: detailed multiband imagery from which habitats can be mapped; a nomenclature that can be used to identify and name different community types; forest canopy height information to discern forest stature; and finally, remote sensing classification procedures to consolidate data, identify community types, and check the accuracy of the final results. In this article we provide an update of where we are in the process.

“It Takes a Village” to pull off a project as complex as this. Scores of individuals and many institutions have collaborated on the endeavor. Major funding has come from the DEM Division of Fish & Wildlife, the RI Division of Planning, the RI Conservation Stewardship Collaborative, the RI Department of Transportation, the US Department of Agriculture, URI Coastal Institute, and the US Geological Survey. Scientists from DEM, URI, US Fish and Wildlife Service, the RI Natural History Survey, and The Nature Conservancy have spent thousands of hours working on various aspects of the ambitious project. The pieces of the project puzzle are many.

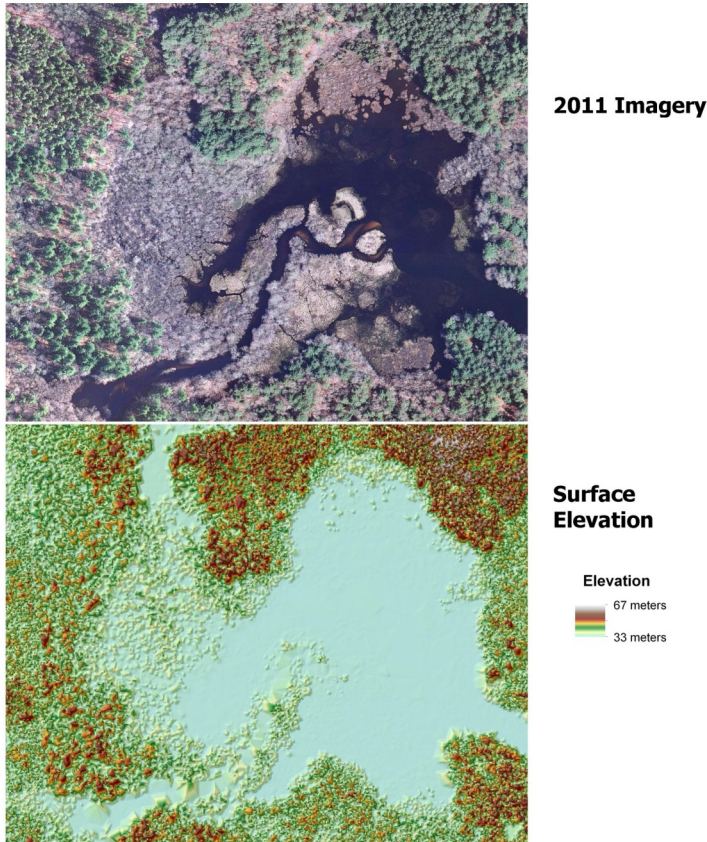


New Imagery: Under the leadership of the DEM Divisions of Fish & Wildlife and Planning & Development, brand new 4-band digital orthophotography was obtained in the spring of 2011. The detailed imagery (6 inch pixel size) shows true color and color infrared views of our landscape. The infrared imagery is very helpful in discerning vegetation types. These data will be the basis of the natural communities GIS dataset. They are available for download off the RIGIS web site

(www.edc.uri.edu/rigis).

2011 LiDAR elevation data for downtown Providence, RI. Image courtesy of RIGIS.

Surface elevation using LiDAR data. Tree canopies (dark brown) are clearly evident in this map of Frying Pan Pond just north of the WPWA campus on the Wood River. Image courtesy of RIGIS.



A Classification System: Under the leadership of Rick Enser working with the RI Natural History Survey, a classification system to name RI's ecological communities has been developed and adopted. The system is based on the Northeastern Terrestrial Wildlife Habitat Classification (NTHC) that was created to identify ecological community types in the northeastern United States. The NTHC was modified to accommodate some unique habitats found in Rhode Island. The RI Ecological Community Classification (RIECC) was finalized with scientific guidance provided by a large number of the state's ecologists and naturalists. A number of important characteristics define the RIECC. It is consistent across state boundaries and is used by our neighboring states. It is mappable -- great effort was spent identifying habitats that can be seen and mapped from aerial imagery. The RIECC technical document and a photographic atlas of the different communities can be found at www.edc.uri.edu/rieccatlas.

Forest Height Information: Using federal ARRA stimulus funding, the US Geological Survey recently completed the Light Detection and Ranging (LiDAR) for the Northeast project. This created detailed measurements of the elevation of the ground surface and forest canopy for the whole state of Rhode Island. Ground surface elevations are accurate to within 4-5 inches vertically and are at a 3 foot (1 m) horizontal spatial resolution. Preliminary testing of the forest canopy elevation data show them to be extremely accurate as well. The LiDAR elevation data will help discern habitats where vegetation height is a critical diagnostic characteristic.

Putting It All Together in a Mathematical Meat Grinder: Using advanced object-oriented remote sensing classification procedures, the 4-band imagery and the topography data, as well as other information such as soils, can be analyzed to distinguish habitats based on their spectral, topographic, and landscape setting properties. This aspect of the project is just getting started. Using seed data consisting of locations of known occurrences of the ecological communities identified in the RIECC, algorithms will be developed to characterize the spectral and elevational properties at these locations and then identify locations in the state that show the same properties. This procedure was used to develop the 2003-2004 RIGIS land use dataset and has been found to be extremely accurate.

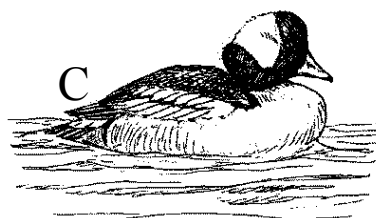
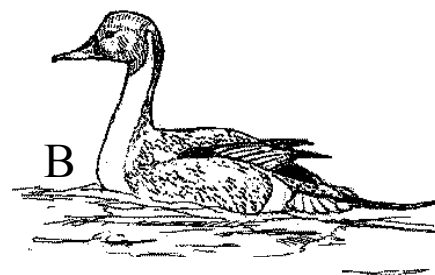
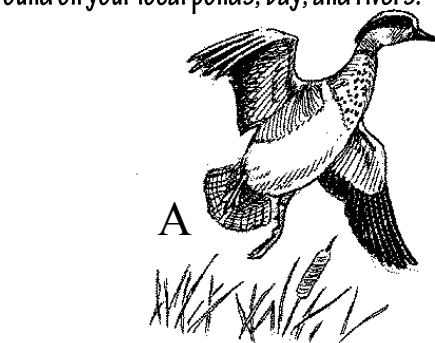
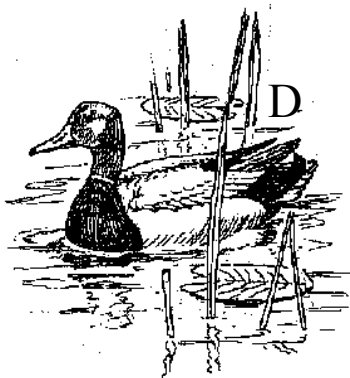
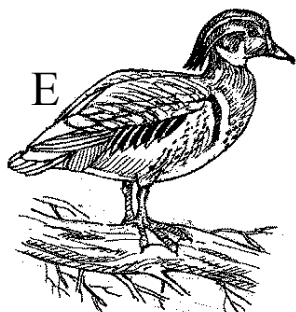
The Final Product: We are still a year or two away from having a final ecological communities dataset available for download on RIGIS. The remote sensing analysis will begin soon and working out those technical details, as well as assessing the accuracy of the final product will be a complex process. The project team has been working diligently for over three years now and the end is finally in sight.

Why Do We Need an Ecological Communities Database Anyway? Rhode Island's landscape is complex. Our forests, brushlands, and other habitats require monitoring and stewardship. Rapid and profound changes to our natural ecosystems can result from pests, pathogens, land use change, and climate change. The RI Ecological Communities database will be an essential baseline from which we can determine where changes are happening and assist us in determining the best (if any) management actions that should be taken in response to these changes.

WATERSHED KIDS' CORNER

If you're out and about this winter & spring, you'll probably see more ducks floating around on your local ponds, bay, and rivers. Can you unscramble these duck names? Can you match the picture with the name?
(Answers at page bottom. Don't peek!)

1. ADLRMLA _____
2. FABULHEEDF _____
3. ODOU UKCDU _____
4. NIITPAL _____
5. GNEER-DWGEIN LATE _____



Drawings property of Project WILD '93

Winter & Spring Birding Hikes

- 23 March; 9 a.m.-12 p.m.-
East Beach & Ninigret National Wildlife Refuge, Charlestown.
Meet at East Beach.
- 12 April; 6:30-8:30 p.m.-
Woodcock Walk at Big River Management Area, West
Greenwich. Meet @ corner of Division Rd & Hopkins Hill Rd.
- 13 April; 8-11 a.m.-
Francis C. Carter Memorial Preserve, Carolina Back Rd.
(Rte 112), Charlestown
- 4 May; 8-11 a.m.-
Great Swamp Management Area, Great Neck Rd., West
Kingston

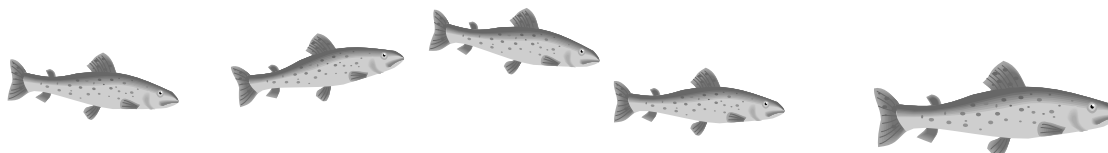
Education Workshops for Teachers

(3 part series, choose one or more!)

- 23 March; 9a.m.-3:30 p.m.-
Wetlands & Water Quality (content course) @
URI Bay Campus, Narragansett
- 30 March; 9a.m.-3:30 p.m.-
Watershed Science (content course) @ URI Bay
Campus, Narragansett
- 27 April; 9a.m.-3:30 p.m.-
Project WET environmental education curriculum @
Kettle Pond Visitor Center, Charlestown

Other WPWA Events

- 9 & 11 May-
Map & Compass Workshop (attend both classes)
May 9th: 6-9p.m. @ WPWA Campus, Hope Valley
May 11th: 9a.m.-3p.m. @ Arcadia Mgmt Area,
Exeter, RI



Follow me to the answers!

- Answers:
1. MALLARD (D)
2. BUFFLEHEAD (C)
3. WOOD DUCK (E)
4. PINTAIL (B)
5. GREEN-WINGED TEAL (A)

continued from p. 3

In 1893, new investors reopened the old Capwell Quarry at Polly Coon for a few years. They raised the bridge abutments and the center island four feet and capped it with a dozen heavy timbers in order to haul heavy quarry stones to the rail road including a 20 ton stone in 1894. A neighbor who has lived here all his life recalls the bridge timbers still in place in the 1930s.

The 100-year flood elevation at Polly Coon Bridge is EL 35. The 1893 stone abutments are just below that level. The 2010 March Flood, a 500-year event, peaked 4 ½ feet higher at EL 39. The river backed up so much from the natural and manmade restrictions at Meeting House Bridge (Route 3), that it resembled a calm lake more than a raging torrent, as one might expect after all that rain.

Now Polly Coon Bridge will be going back to work. The Westerly and Hopkinton Land Trusts recently protected fourteen hundred acres and ten miles of Pawcatuck River frontage where the original Polly Coon Bridge once stood. The two land trusts are re-connecting both sides of the river with a 75-foot free-span arched aluminum pedestrian bridge at the old bridge location. New concrete landings will be raised 1 1/2 feet above, and be set back of, the existing abutments.

There is only one remaining missing piece of this puzzle linking the two trailheads. The Tomaquag Brook floodplain in Hopkinton, northeast of the Polly Coon Bridge, is a wide swamp. Hikers can only count on being able to cross it a few months of the year. Currently, trail workers utilize a natural log bridge and sandals or waterproof boots to get back and forth. The Hopkinton Land Trust has been investigating bridge options for five years and has now selected the location for a 300-foot helical pile sup-

The remains of the old Polly Coon Bridge in the beginning phase of the construction process. Photo courtesy of auntiebeak.com.



ported crossing. The land trust expects to finalize design and permitting this winter. Much of the construction will be completed with volunteer labor, but the land trust hopes to receive a trail grant from the RIDEM this spring. The bridge could be open to the public during the summer of 2013.

I would like to thank Dwight Brown for much of the historical information used above.



Want to help your local watershed while celebrating **Earth Day** at the same time? Well, we have the perfect thing for you!

Help WPWA keep our watershed healthy & beautiful.

Volunteer for a few hours anytime between April 20th & 21st at one of many cleanup sites. Some may be right in your neighborhood!

Go to our Events Page for more information & to choose a site.

www.wpwa.org/events.php





Brian Murphy & Jeffrey Murphy RI MASTER#A-3142

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