– INFO KIT –

NEUSE RIVER

MILBURNIE DAM REMOVAL

RESTORATION

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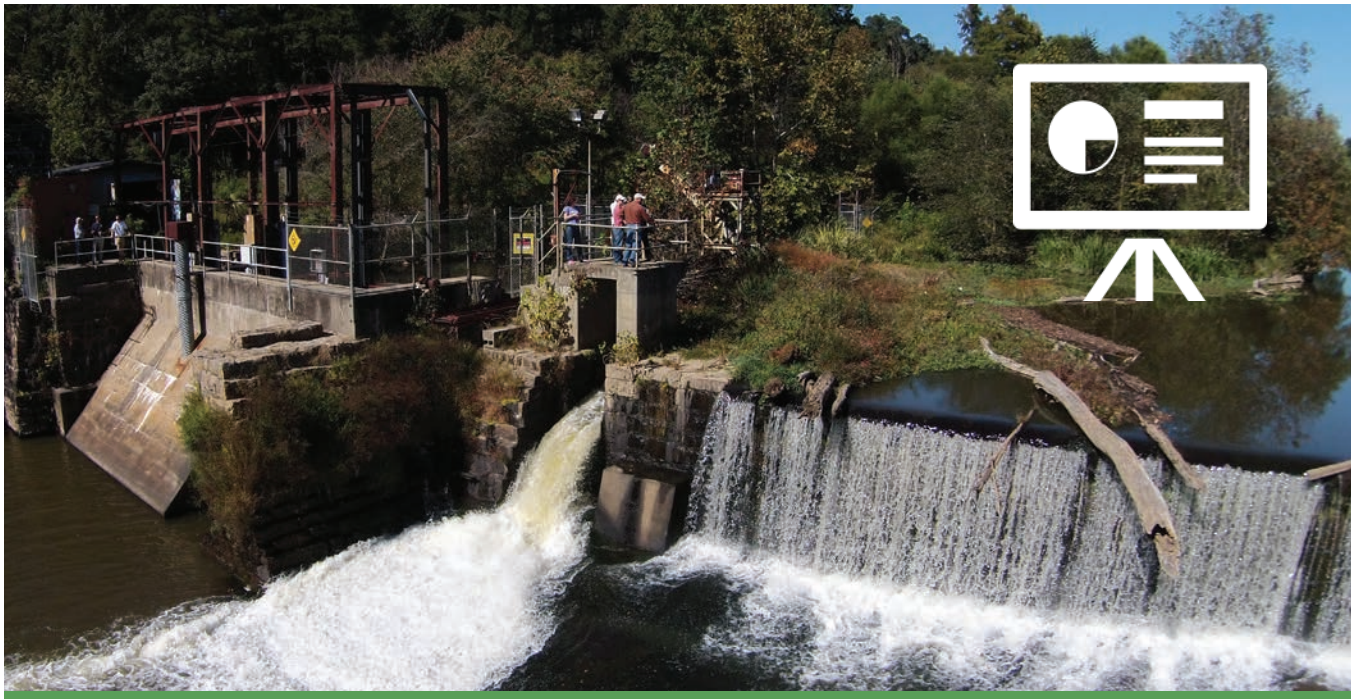
RALEIGH-BASED RESTORATION SYSTEMS, an ecological restoration and environmental mitigation company, is excited to announce the initiation of the removal of the Milburnie Dam on the Neuse River.

RESTORATION SYSTEMS is committed to keeping the public informed of the dam removal process before, during and after the project. Public understanding of the project can be educational to young and old alike concerning the justification for dam removal, and the wonderful process of natural ecological repair of the Neuse River our area can expect to witness.

With these goals in mind, we are providing this communication to establish facts that are important to fully understand this exceptional project.



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to watch our brief project overview video, as well as to access other videos, photos, and related media.

CONSTRUCTION TIMELINE AND SEQUENCE

THE PROCESS TO REMOVE THE DAM CAN BE SUMMARIZED IN THESE STAGES:

1. IMPOUNDMENT DRAWDOWN
2. SEDIMENT AND EROSION CONTROL / ACCESS
3. DAM REMOVAL / IN-RIVER WORK
4. POWERHOUSE DEMOLITION / OUT-OF-RIVER WORK
5. CLEANUP
6. WETLAND PROTECTION AS NEEDED

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MILBURNIE DAM BACKGROUND

The family of the late Raleigh attorney, Mr. Howard Twiggs, privately owns the dam and nine surrounding acres. Howard Twiggs was a conservationist and enthusiastic supporter of the removal project. Restoration Systems has a long-term contract with the Twiggs family to finance the purchase and removal of the dam.

In 2001 the dam was determined – out of 5000 dams statewide – to be a 'TOP TEN' removal priority by nine state and federal agencies.

Since that time, Restoration Systems has been working to acquire a permit and remove the Milburnie Dam.

THE DAM IS A KILLER. The "hydraulic" current of the river concentrated through the abandoned powerhouse has drowned more than 15 people. In just the time our company has been seeking approval to remove the dam, two children and two teens have drowned "playing" in the turbulence created by the dam.

Electrical power has not been produced from the site in many years, and the facility performed poorly even when it did.

The dam is deteriorating and has exceeded its design lifetime by many decades.

The property is constantly subject to trespass and vandalism. The illegal activity has increased dramatically in recent years with the establishment of new city parks on each bank and the passage of the Raleigh Greenway.

Given scarce state and federal funds, the most viable option for funding the removal of the dam was permitting the project as an environmental "Mitigation Bank," in order to produce mitigation "credits" for sale as required to off-set damage to other waterways in the region.

In 2006 Restoration Systems removed two other dams using the same finance and permitting approach. The Lowell Mill and Carbonton dam removals in Johnston and Chatham counties successfully restored over one hundred miles of impounded river and upstream waters to their free-flowing, natural condition.

The Milburnie Dam is the last impediment to migratory fish on the Neuse River from the coast, particularly the sport fish Shad and Striped Bass. The removal is the continuation of a comprehensive watershed-wide process to remove and restore the ecological integrity of the Neuse River. Four dams have been previously removed downstream on the Neuse and its tributaries.

PERMITTING

Dam removal, even when clearly justified like Milburnie, is a time consuming regulatory process. The Milburnie Dam has also been permitted as a Mitigation Bank, further adding significant additional complexity, as such a certification requires regulatory consensus between five state and federal agencies.

BELOW IS AN ABBREVIATION OF THE PERMITTING SEQUENCE:

1. In April 2009, Restoration Systems began the data collection and permitting process for the removal.
2. The Inter-Agency Review team for the project was comprised of the US Army Corps of Engineers, US Fish & Wildlife Service, NC Division of Water Resources, NC Wildlife Resource Commission, US Environmental Protection Agency, NC State Historic Preservation Office, and the National Oceanic & Atmospheric Administration.
3. Two public notices were issued and comments were taken into account by the Interagency Review Team.
4. In December 2012 and August 2017 Restoration Systems held well attended public meetings. The Power- Point presentation is available here, as are videos documenting the entire meeting and following Question & Answer session.
5. There are 160 owners of riverside property along the 6 mile impoundment. Each was notified by mail and solicited for written and spoken comments which were reviewed by the Inter-Agency Review Team of state and federal agencies.

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AFTER MILBURNIE DAM REMOVAL

As a Mitigation Bank, the project will receive close attention and extensive monitoring for years to come. “Credits” are only released upon successful monitoring of the improved ecology of the project area behind the dam.

FOR THE NEXT SEVEN YEARS MONITORING WILL BE CONDUCTED AS FOLLOWS:

MONITORING SCHEDULE FOR MILBURNIE DAM MITIGATION BANK

Monitoring Category	Monitoring Years						
	1	2	3	4	5	6	7
Mussels	–	–	–	+	–	+	+/–
Fishes	+	+	+/–	+/–	+/–	+/–	+/–
Aquatic Insects	–	+	–	+/–	–	+/–	+/–
Anadromous Fish	+	+/–	+/–	+/–	+/–	+/–	+/–
Scientific Research	+	+	+	+	+	+	+
Wetland Hydrology	+	+	+	+	–	–	–
Channel Geometry	+	+	+	+	+	+	+
Vegetation	+	+	+	–	+	–	+

+ = Monitoring planned; **–** = Monitoring not planned;

+/– = Monitoring may proceed if performance standards are not met

SOUND RIVERS

During this period and into perpetuity the site will be permanently protected by conservation easement to be held by Sound Rivers, a Neuse River non-profit advocacy and protection organization.

RS is funding a five-year Duke University study of the Milburnie Removal to be administered by Dr. Martin Doyle and the new data collected is expected to produce a PhD.

OTHER RS DAM REMOVALS:

In 2005-2006 RS removed two others dams; the Lowell Dam in Johnston County, and the Carbonton Dam in Chatham, Lee and Moore counties. Both projects were widely publicized and highly regarded successes, **freeing to a natural condition more than ten miles and five miles of the Deep River and Little River respectively.**

For nearly 200 years, the Lowell Dam, like the Milburnie Dam, had blocked the annual spring migration of "anadromous" fish, which are born far inland in rivers, live their life at sea, and return to the place of their birth to spawn. These fish have been determined by subsequent monitoring to thrive now more than 20 miles upstream of the former Lowell Dam.

The removal of the Carbonton Dam has successfully restored lake habitat to shallow river habitats as well. The project restored a federally listed Threatened and Endangered fish, the Cape Fear Shiner, to more than 20 miles of its previous range and was one of the most notable T&E species recovery efforts in North Carolina of the last decade. As at Milburnie, the project improved and increased habitat for a number of shallow water river dwelling species, such as the fresh water mussels.

Three Phd's, from NC State and UNC, were awarded based on studies performed at the Carbonton and Lowell removals and funded by grants from Restoration Systems.

Expert contacts:
Ms. Jean Gibby, U.S. Army Corps of Engineers, 919.554.4884
Mike Wicker, US Fish and Widlife, 919.856.4520 ext. 22
Dr. Martin Doyle, Duke Universtity, 919.613.8026

Conservationists and Environmental Organizations:
Sound Rivers, Matthew Starr, Upper Neuse Riverkeeper, 919.856.1180
American Rivers, Steve White, 919.682.3500
Mac Currin, former North Carolina Marine Fisheries Commissioner, 919.881.0049

Recreational Interests
Mr. Paul Ferguson, Author, Paddling Eastern North Carolina , 919.781.3080

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RESTORATION SYSTEMS is a leading environmental restoration and mitigation banking firm with more than 50 mitigation banks, turn-key restoration sites and ecosystem investments in ten states.

Our projects and investments involve more than 125,000 acres of wetlands and prairies; and 60 miles of streams, rivers and bayous. We fund our beneficial activities by the sale to developers of compensatory mitigation off-sets required by state and federal agencies that regulate development in sensitive areas.

RS was formed in Raleigh in 1998 to improve the quality of environmental restoration and mitigation by locating and acquiring the best properties, planning the site restoration using best practices, constructing and planting the site in the most conscientious manner, and maintaining and monitoring the real estate and ecology over the long term.