

A Study in Community Action for Environmental Protection: The Raleigh Walnut Creek Wetland Center

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The story of the Walnut Creek Wetland Center is about evolution: from liability to asset, from dump to nature preserve, from embarrassment to pride. This backwater place had been overlooked for decades until several community activists and local politicians collectively turned their attention to the area. The Center is a case study of how persistence and a moral imperative can lead to success. The Center promotes interest in both the cultural and physical aspects of the wetlands, their history and use (and abuse) by humans, as well as their place in a healthy ecology.

Context of the Project

The Walnut Creek Wetland Center is a 59-acre education and nature facility owned and operated by the City of Raleigh. The site is located in southeast Raleigh just north of Interstate 40 and is part of the Walnut Creek basin, which includes much of south Raleigh. The Center is located two miles from downtown Raleigh in the Walnut Creek floodplain, adjacent to the Rochester Heights neighborhood, St. Ambrose Episcopal Church and Carnegie Middle School. The Walnut Creek Greenway passes through the site. Industrial brownfields are nearby, as are small commercial developments and neighborhoods. Large parcels of land in the area are owned by the City of Raleigh and the State of North Carolina.

Unlike the hilly environs of Crabtree Creek, which drains much of north Raleigh, the area around Walnut Creek consists mostly of low-lying land and hundreds of acres of wetlands that contribute to the Neuse River basin.

The area is very rich biologically. Little Rock Creek enters the wetland from the north, joining Walnut Creek. These creeks flow together a few feet below the surface of the wetlands, which are marshy areas more or less saturated with water. The water courses have slowly built up their own levees as a result of flooding. Sediment deposits adjacent to the stream banks eventually raised the ground elevation, in some places by just a few inches. Drainage is often poor behind such natural levees, and water collects there, fed by runoff and flooding. The Walnut Creek Greenway trail is located mostly on this slightly higher ground.

Numerous types of wildlife have been identified in the area. Evidence of raccoons, ducks, muskrats, beavers, coyotes, mink, deer and dozens of bird species has been found.¹ The stream course serves as a wildlife corridor, allowing species that are otherwise found in undeveloped lands to penetrate nearly into downtown Raleigh. The Walnut Creek wetlands were the source of many of the

first animal specimens collected by the North Carolina Museum of Natural History, contributing to the museum's early renown for its particularly rich and complete specimen collection.²

Although the environmental fundamentals remain intact, the area is also very fragile. Like many urban wetlands, the Wetland Center property has been abused for decades. It has been used as an illegal dump by individuals, particularly for building debris, tires, furniture, and appliances. Over time, most of the large trees were cut, so that shrubby undergrowth now prevails. In all programming for the Center, it is recognized that the restoration to pristine conditions will be a long process and perhaps an unachievable goal.

The Area Prior to the Wetland Project

Wetlands have traditionally been viewed as marginal areas. While offering some opportunities for fishing, hunting, and trapping animals, as well as harvesting timber, they were otherwise considered useless wastelands that were for the most part impediments to agriculture and obstacles to travel. Wetlands were considered unhealthy places that bred fevers and disease, serving as habitats for mosquitoes, poisonous snakes and the occasional alligator.

Up until the middle of the twentieth century, Walnut

Creek and the wetlands were surrounded by farmland, much of it owned by African-Americans. Clarence Lightner, the first African-American mayor of Raleigh, recalled:

My granddaddy [Calvin Lightner] had a dairy farm [along Walnut Creek], and after he stopped dealing with dairying and moved onto something else he literally gave the land away for housing. So where Rochester Heights is, Biltmore Hills, all that was our dairy farm. He gave [part of] it away for housing for black people because they couldn't afford houses anywhere else. I used to go to the farm when I was a kid. Well, some family members lived there, but we would go there mostly on weekends and it seemed like a long way, from Raleigh to the farm... but it was right here in town, literally.³

The neighborhoods that Dr. Lightner mentioned were the first mid-twentieth century suburban housing to be marketed specifically to African-Americans. Rochester Heights is a ranch house neighborhood west of St. Ambrose Episcopal Church and immediately adjacent to the wetlands and has suffered periodic flooding from Walnut Creek.



Raleigh Walnut Creek Wetland Center. *Photo courtesy of Frank Harmon Architect PA.*

Dr. Norman Camp on the Education Center:

“Well the education center is being built there on that property. We knew that having a facility owned by the city and maintained by the city will bring some awareness in the community that this is a valuable piece of property and should not be used for dumping trash. Also, there was a need to open up the whole arena of studying wetland ecosystems to the schools that surround this site. Carnage Middle School for instance, Fuller Elementary School, Ligon Middle School, and Washington Middle School, and the colleges that are located near by, all of these could benefit from some experience in the wild, in the environment. So it really opened up a vista for research and also a venue for kids to come and learn about wetlands and the value of wetlands.

And this particular wetland, the Walnut Creek wetland is a special one because it's in the heart of a black community that has had neglect in the past because of what it was, and what it is today. These are the things that we push because of history and because I have lived through these times and my own history. So we pushed hard to have this to happen. With my experience of coming to church here at St. Ambrose and jogging in this area, I understood the wildlife that I saw and treasured and knew that if we developed a wetland park here that other people could experience that kind of joy and enlightenment when they experience the wild creatures in an urban setting.”⁴

1996-2001: Hurricane Fran and the Formation of Partners for Environmental Justice

In 1996, Hurricane Fran brought severe flooding to the Rochester Heights neighborhood, intensifying ongoing concerns by the St. Ambrose congregation over dumping into the wetlands and the need for flood risk mitigation. Eventually through FEMA participation, the most flood-prone houses in Rochester Heights were purchased and demolished. The State Street bridge over Walnut Creek was, and continues to be, a convenient dumping spot, with refuse plainly visible in the wetland around the bridge.

Three nearby Episcopalian parishes decided to band together to help address the wetlands issues. In 1998, the group Partners for Environmental Justice (the Partners) was established at St. Ambrose Church, chaired by local resident Dr. Norman Camp. Dr. Camp, a member of St. Ambrose Church and an accomplished educator with long experience in environmental matters, began to think of the Walnut Creek wetlands in a different light, from

a liability to an asset. As a founding member of the Partners, Dr. Camp provided leadership and articulated the moral imperative for the restoration of the wetland. In addition to clearing junk and mitigating flood risks, the Partners saw an opportunity for the wetland to be a recreational, educational, and economic amenity. Spurred by the group's discussions, “Walnut Creek 2000,” the initial master plan for the area, was launched to promote the Walnut Creek wetlands as a community asset to be recognized and celebrated, with the ultimate goal of establishing an urban wetlands park.

A significant component of Walnut Creek 2000 was education. Through a grant from the North Carolina Water Conservation Trust Fund, the Partners engaged Robin Moore, professor of Landscape Architecture and leader of the National Learning Initiative, a research and design assistance program of the North Carolina State University (NCSU) College of Design. The Natural Learning Initiative promotes children's awareness and appreciation of the natural environment, through environmental design, action research, education, and dissemination of information.⁵ Professor Moore was tasked with guiding a community participation process for the development of a design program and master plan for a wetlands education park. The development of the plan itself provided an educational experience by engaging an NCSU student team in the design process.

The Walnut Creek 2000 initiative formed around ideas developed in a series of public charrettes. The meetings attracted interest from a wide range of local citizens, NCSU and Shaw University faculty, and religious and secular partners from across the city. The participants produced a list of goals and strategies, with the overarching goal of providing an environmental preserve that would also serve as an educational resource about wetlands.

The project participants used the park master plan documents and brochures to advocate for the creation of a Walnut Creek wetland facility. Policy makers, including local politicians, were the main targets of this campaign. The Walnut Creek 2000 leadership also used the design studio exhibition boards to promote interest within the community, the North Carolina Department of Natural Resources, Raleigh Department of Parks and Recreation and the Raleigh Parks Board, of which Professor Moore was then a member.

After the conclusion of the planning exercise, community clean-ups were organized by the Partners twice a year. Tons of trash were removed from the wetlands, but old debris continues to re-surface. As noted by area resident James Revis:

I was one of the first members here [at St. Ambrose Church]. And we were also interested in keeping the area and environment clean. Twice a year, spring and the fall, we have a clean up where we go through the creeks; you

would be surprised by the things we pull out, television sets, automobile tires, and all that. We pile it all on the side of State Street, and the City picks it up and takes it to the dump.⁶

2002-2004: Selecting the Site and Design Team

Out of the expansive wetland, the Partners decided to focus on the 59-acre area owned by the City of Raleigh and managed by the Raleigh Department of Parks and Recreation. Nearby wetlands properties were owned by the State, among others, and had confused title issues, so the City-owned property proved to be the easiest to program. The City of Raleigh, also, was an eager partner in the project. The funds for the project were approved by Raleigh citizens in the 2003 Parks and Recreation Bond Referendum.

2005-2010: Design, Construction, and Grand Opening

The City Council approved the project in July 2005, with a budget of \$1.2 million. The wetlands were funded in part by \$500,000 in N.C. Clean Water Management Trust Fund money.

The design team for the Center included Frank Harmon, architect; David Swanson, landscape architect; Design Dimensions; and the National Learning Initiative. Cynthia Rice, landscape architect, later joined the team. The team produced a schematic design. The only challenges during the design and construction of the building involved the building's response to the wetland site. Building above the ground on piers is not common in the Piedmont of North Carolina, which drew some concern from the City and Wake County about how emergency response vehicles could access the building.

In July 2009, the Walnut Creek Wetland Center officially opened. The building has about 6,000 square feet of enclosed space, plus 1,200 square feet of deck overlooking the wetland. The building contains a wet lab area, conference space, library, office, spaces for about three full-time and three part-time staff, and a display gallery. All of the rooms are primarily accessed from the deck rather than through internal circulation, thereby encouraging visitors to go outside and participate in the environment.

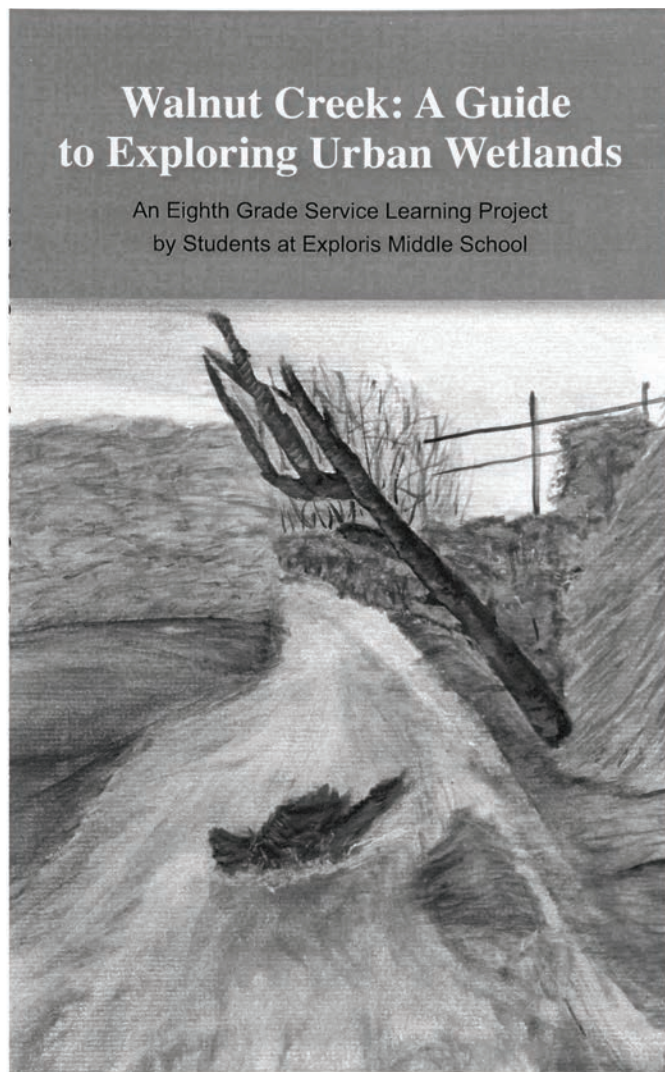
By design, the building responds directly to the site. Built on slender piers, any flood waters will pass relatively unobstructed below the structure. The building relies on natural lighting, and each room receives daylight from at least two directions. The narrow south-facing form, with a deep roof overhang providing shade in summer and sun in winter, allows the building to be opened for cross-ventilation during the temperate seasons of the year.

Evaluation and Next Steps

The stated mission of the Walnut Creek Urban Wetland Center is to promote understanding and protection of an urban wetland, enhance community pride, and encourage economic development.

The Center operates in a very hands-on, participatory manner, with volunteers providing valuable help. This involvement endows the facility with a strong underlying moral presence in the community. With its history as a flood-prone dumping ground in an African-American community, the new Center shows that citizen initiative and ongoing support, with cooperation from the City of Raleigh, could produce something of pride in a previously neglected area.

The Center is the first "education" park in the Raleigh parks system. In an early educational initiative, a field guide for the Center was prepared by students from Exploris Middle School; they also compiled an oral history of people who had experiences with the wetlands, and these materials are now used at the Center. The Center is an example of a successful grassroots project with multiple community partners, including NCSU, the North Carolina Museum of Natural Science, Keep America Beautiful, local schools and churches, and many others. Hundreds of volunteers are involved in clean-ups and



Exploris Middle School's wildlife guide to the wetland center. Photo of cover image courtesy of James Brantley.

promotional, fund raising, and advocacy activities. The park is the most accessible environmental education and nature-based recreation resource in the city and provides an amenity for a previously underserved population in the neighboring community.

Like most park projects, the Wetland Center will evolve in phases as additional funds and opportunities become available. Due to its location, the Center is a crucial link in the overall Raleigh greenway plan.⁷

Access to the wetland is currently limited to the Walnut Creek Greenway which passes through the site, but eventually the wetlands will also be accessible via its own trail and boardwalk system. As the greenway system continues to expand and evolve, direct connections will be available to downtown Raleigh and Pullen Park. The Walnut Creek greenway between NCSU's Centennial Campus and the Worthdale area in southeast Raleigh, a distance of about five miles, will be complete by 2012.

The planning and construction of the Center demonstrates the long-term payoff of volunteer efforts to coordinate a multi-stakeholder group. Continuity of leadership has been crucial. It will be interesting to see how fast and to what degree the park stimulates economic development nearby.

Special thanks to Robin Moore from the NCSU College of Design, who provided a valuable timeline of the project; Dr. Norman Camp; Frank Harmon and Erin Sterling (Frank Harmon Architect, PA); Frank McKay (Exploris Middle School); Vic Lebsock (City of Raleigh Parks); Tiffany Frost (Walnut Creek Wetland Center); and Margaret Cotrufo (North Carolina Museum of Natural History).

Endnotes

¹ Exploris Middle School. 2008. Walnut Creek: A Guide to Exploring Urban Wetlands.

² Cooper, John E. 1979. The Brothers Brimley: North Carolina Naturalists. *Brimleyana: Journal of the North Carolina State Museum of Natural History* 1, 1-4.

³ Exploris Middle School. 2010. The Walnut Creek Oral History Project: Where People and Wetlands Matter. http://www.soil.ncsu.edu/feature/wc_oral_history/index.html (accessed February 2010).

⁴ *Ibid.*

⁵ The Natural Learning Initiative. 2010. <http://www.naturalearning.org/> (accessed February 2010)

⁶ Walnut Creek Oral History Project, 2010.

⁷ City of Raleigh Department of City Planning. 2009. Raleigh Comprehensive Plan, 191-193.

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