

RIVER WALK, ECOLOGICALLY SPEAKING

By Suzie Fowle

How many downtowns have a native habitat component, buzzing with pollinators and the soothing voice of a river? A few may come to mind, but how many have been restored to an indigenous ecosystem without a single drop of herbicide or fertilizer, while also maintaining their place in human history, both industrial and social, all the while receiving over 12,000 visits per year?

The Great Barrington Housatonic River Walk is a feat of vision and restoration. Where there was once an impenetrable tangle of bittersweet atop centuries of debris and neglect, forming a wall between life in Great Barrington and the River that runs through it, nearly 200 species of native plants now thrive alongside an accessible walking trail. The ongoing creation of River Walk also speaks to the human element. It marks the confluence of ecological renewal, environmental and social justice, the underpinnings of the industrial revolution, and the vitality of a downtown. Few, if any, ecological restoration projects can say the same. River Walk is a prototype for awareness on many levels.

The River Walk Ecosystem

In order to understand the ecological processes that are alive and well at River Walk, and what makes this piece of the Berkshires remarkable, we will start with the question: *what is an ecosystem?* Ecosystems are communities of species interacting with the physical components of a distinct area. Nutrients cycle through the animal, plant, fungal, microbial and non-living features of an ecosystem. "Ecological processes" are the pathways by which energy flows between these "trophic levels," the levels of the food chain.

An ecosystem can be large or small. For example, we can broadly describe the ecosystem of the forests of western Massachusetts. Or we can differentiate between the suite of species along ridgelines, those inhabiting floodplains, and the various communities in between. To illustrate further, the ecosystem of a particular pond is different from that of the stream that feeds it, which itself is ecologically distinct from the surrounding forest; and yet, these ecosystems are linked and interdependent.

River Walk is a "riparian" (riverside) ecosystem, delineated by its physical boundaries: the paved, human footprint along one side, and the Housatonic River on the other. River Walk, in its current, restored state, cycles energy and nutrients through a thriving community of native woody and herbaceous plants. Like any ecosystem, it receives input from the sun, as well as the river, precipitation, and the animals that move through. Inorganic elements are taken up by the living layer and assimilated into organic molecules. Eventually they return to the soil and water in inorganic forms, available for another round through the biota.

From Neglected to Vibrant

Before settlement of the Town of Great Barrington, what is now River Walk was a floodplain, absorbing the River's changing water levels and movements. Today, much of River Walk exists on artificial fill, debris deposited by townsfolk over the course of hundreds of years, well before River Walk's creation. The fill expanded the town's buildable, downtown area but left the River without the room it needs to expand and contract naturally. This constrained path accelerates the River's flow speed and increases the bank's vulnerability to scouring. River Walk depends on experts who are skilled in shoring up the banks organically, using fibrous "logs" and native vegetation. This is one of the ways that River Walk pushes the concept of "ecosystem" into a new realm: its restored, native riparian habitat depends on bioengineering.

Once the Town of Great Barrington was established, the banks of the Housatonic continued to receive debris. As W.E.B. Du Bois famously said at a local meeting in 1930, the Town had "turned its back upon the River". Thirty years later, Du Bois wrote: "the town had made a sewer of the beautiful Housatonic River, instead of the park it might have been."

In 1988, although the wall of bittersweet obscured the River, and the riverbank was unrecognizable as a resource, sixteen volunteers took the leap of faith. They began by removing fifteen tons of garbage and demolition rubble. They unearthed an array of items: plumbing parts, tractor tires, roofing materials, to name a few. The following year, seventy local eighth graders, their school adjacent to the River, continued this extraordinary feat. By 1990, the number of volunteers had grown into an army of 109 gloved and determined townsfolk. They removed another eighty-two tons of debris and garbage, mostly consisting of the torched remains of Melvin's Prescription Pharmacy, which had been pushed over the bank after burning down in 1978. Similar efforts continued, year after year, and annually to this day.

"Rescue the Housatonic and clean it as we have never in all the years thought before of cleaning it..." Du Bois said in 1930." It took a while, but today, the cumulative number of volunteers for River Walk exceeds 3,100, and the removed debris totals over 400 tons. Neighbors no longer live adjacent to a "sewer." Now, thousands of townsfolk and visitors have a view of the River and easy access to a walking trail through native habitat.

Life downstream from Great Barrington has improved as well. River Walk has transformed the way runoff is delivered to the River. Rain and snowmelt once ran directly into the Housatonic, picking up road salt, rubber and metal deposits from tire wear, dust and sand, antifreeze and engine oil, pesticides and fertilizers, and litter. Now the runoff has a chance to stop and rest, allowing the sediment to settle and the oil to separate out. The walking trail is composed of a permeable mix of gravel and soil stabilizers. Drop inlets, a rain garden, increased permeability of the soils, flow forms, and a healthy vegetative layer have restored the rapport between the town and the

River that gave rise to it. Every ecosystem and town downstream receive fewer pollutants as a result.

Benchmarks of Ecological Health

Like the transformation of the quality of water entering the River, species richness and diversity indices have changed dramatically since the creation of River Walk. A handful of invasive species—Japanese bittersweet, knotweed, garlic mustard—once dominated River Walk, outcompeting native herbaceous plants and adversely impacting existing trees and shrubs. Now, over 170 native herbaceous and woody plants are established at River Walk. The success of new plantings is no longer a struggle against impoverished soils and encroaching invasive plants, as it was for the first decades of River Walk's creation.

Ecosystems are often evaluated by their "connectivity." Any parcel of habitat is more ecologically valuable if it connects to other habitats, or to larger tracts of intact upland or wetland. Before River Walk, downtown Great Barrington fragmented the riparian habitats to the north and south. Today, River Walk provides a steppingstone between those habitats. Seventy-five species of birds have been observed at River Walk, a clear indication of its success as a stopover for foraging, nesting, or finding shelter.

Linking the large natural areas to the north and south can have a synergistic effect. Habitat connectivity gives rare species of the Housatonic a greater chance of remaining viable and maybe even increasing their populations. Species such as the Creeper Mussel and the Wood Turtle can move from one area to another and interbreed, increasing the likelihood that the gene pool remains robust and resilient.

By acting as a steppingstone where there was once a missing link, River Walk's contribution to the Housatonic ecosystem is many times greater than its footprint. Imagine a Luna Moth, or a Little Brown Bat, or a Cedar Waxwing moving along the river corridor. Envision the difference it makes to find a contiguous stretch of perch sites, nectar, native berries, and prey. Now try to imagine the turtle's perspective. Consider how a paved-over human imprint impedes migration and dispersal for non-airborne critters. Indeed, snapping turtles have nested successfully in River Walk's now fertile soil, ensuring connectivity across time, between generations.

Human Ecology

River Walk is unlike other riparian ecosystems in many ways. In order to convey a complete and accurate picture of its interrelationships and energy cycling, we need to look beyond text-book ecological processes and include the human element. Educators, historical figures, removers of debris and invasive plants, installers of riverbank reinforcement, cultivators of native plants, and many others are all vital to River Walk's energy flow. River Walk exists thanks to human feats of native planting, bioengineering, clean-up, persistence, and vision.

At River Walk, pollination extends beyond insects and birds. River Walk was founded by the seeding of ideas across time – by the words of W.E.B. Du Bois in 1930 landing with River Walk founder Rachel Fletcher, some 60 years later. As River Walk's students, interns, and fleets of volunteers disperse into new fields and jobs, their ecological know-how travels with them and seeds ideas in other communities. Think of milkweed seeds riding the wind currents.

Cross-pollination at River Walk includes a relationship to human innovation and industrial history. One section of trail celebrates William Stanley, a founding father of the modern electrical age, whose experimental laboratory stood across the River. Stanley's innovations, powered by the flow of the Housatonic, advanced electricity as we know it. However, the PCBs that would come to insulate his alternating-current transformers contaminated the River. River Walk incorporates this ironic confluence, so that visitors are reminded of our impact on the planet and the need for stewardship. Further, River Walk provides a laboratory for current issues of sustainability, where we can measure the success of eradicating invasive plants without chemicals, or monitor the recovery of depleted soils, among many other opportunities.

River Walk expands our definitions of species richness and diversity to incorporate the human element and the span of generations. A memorial to W.E.B. Du Bois, engineer of the civil rights movement on a national and global scale, rests adjacent to a memorial to Monica Schultz Fadding, local architect of the planting and propagation schemes that brought the riverbank back to life.

River Walk pushes the concept of habitat connectivity into a new realm, uniting ecological concepts with urban planning know-how. Great Barrington's Main Street is roughly parallel to River Walk, and a mere 800 feet away at the farthest point. In minutes, we can walk from sidewalks and storefronts to the solace of a river and its living bank. We can cycle back through downtown, and do it over again, like minerals traveling through the biota of an ecosystem, our souls nourished by the flow.

As you course through, stop to take in a layer or two, the buzz of insects on native plants, the settling turbulence in the rain garden, the mindset of inventors and visionaries past, or the comfort of a turtle nest buried in the soft bank.

W.E.B. Du Bois is quoted in *Berkshire Courier*, July 31, 1990, and a letter to George P. Fitzpatrick, 1961, courtesy of the family of the late George P. Fitzpatrick.

June, 2019