

land management



The Button Factory

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Water has become a flash point of late, as mention of pipelines, lead contamination, or the prospect of mining harken us to the day the Cuyahoga River burned. The essence of water has always been controversial, both devastating and tranquil, amassing respect and admiration for its synchronous complexity and simplicity. Yet somehow, with life at its mercy, it has managed to cover our planet with unimaginable diversity. Locally, water is abundant, and can easily be taken for granted. As someone who enjoys fishing and paddling, I must remind myself just how fortunate we are to have so many rivers and streams in our surrounding landscape, foregoing a desire to treat it as an embarrassment of riches.

In our area, concerns over water quality are mainly focused on pollution from runoff and siltation. Pollution can be thousands of gallons of ethanol spilled from a railroad car directly into the water, but more commonly it's oils or other chemical residuals from our roadways and croplands that are slowly washed into our streams and rivers, leading to the Mississippi and eventually the Gulf of Mexico. If the process of sweeping these pollutants into our waterways isn't swift enough, we hope that the sun's UV rays will cook them into a less harmful state before they leach into the groundwater. Siltation, a type of sedimentation, refers to a process where fine particulates of soil, carried by water, eventually become settled in the bed of some body of water. Typically in our area, the occurrence of this process leads to the loss of topsoil and eventual piling of "muck" in our waterways, which can be especially noticeable along their banks. This process is natural to the extent that it doesn't overtake our waters too rapidly. Prior to current land management practices, our native vegetation stabilized banks and acted as a sponge on the landscape, soaking up and filtering water as it drained. Presently dominated by shallow-rooted crops and lawns, heavy rains can exacerbate sedimentation twofold in our area, as water sheets across the land, giving rise to flash floods that effectively mangle the banks of our streams and rivers, leaving them uncommonly high and abrupt during ordinary stages. Waters unshielded from the adverse ramifications of runoff and sedimentation are noticeably, and frustratingly, murky or cloudy throughout the year, save for periods experiencing substantially less rainfall.

Clear and clean stretches of water near us are protected by some kind of substantial, natural buffer on either side for an extended length of their course. The substrate found in them is typically rock, gravel,



or sand which can compile to form "bars" along inside bends. Shallow, rocky riffles may briefly inhibit flow, oxygenating and cooling water as it glances by. The course of such a stretch will meander, widening and narrowing, as if a giant crayon scribbled it onto the map. In addition, the overall health can be determined almost exclusively based upon the inconspicuous prevalence of mussels. Mussels are bivalve mollusks, denoting they are a two-shelled, invertebrate animal from the phylum of Mollusca. In other words, mussels are a freshwater clam. Interestingly enough, of about 300 species of mussels known to be native to North America, 80 were native to Illinois. A mussel's shell is made of calcium carbonate, and limestone, a staple geologic feature of Illinois, harbors naturally occurring minerals which can combine to form calcium carbonate. The shell that is formed becomes the key identifying feature in determining species. So, if you have a few species of mussels in your waterway, that's a good thing. If you 15 different species of mussels, that's a strong indication you have a very healthy aquatic ecosystem.

Nonetheless, mussel populations are prone to decimation via commercial harvesting and, of course, pollution. For over 50 years, from the early 1890s to the early 1940s, the shells of mussels were used to make buttons for clothing, and the soft inner tissue was considered somewhat of a delicacy. Soon after the invention of plastic, the old button factories became obsolete, but excessive harvesting had taken its toll. Of those 80 species of mussels known from Illinois, over half are threatened, endangered, extirpated, or extinct today. That is a strong indication that the aggregate health of our aquatic ecosystems in Illinois is poor. Once prized by the button factory for their shells, the mussel has newly acquired providence, as surveys of their remaining populations provide us a measuring stick to calculate the success of our restoration efforts. So long as we have the mussels, we know it's not too late to make a difference in our water quality. Realistically, the goal is to achieve balance. Roadways, parking lots, lawns, agriculture, and rooftops are part of our daily lives, so our responsibility is to be mindful of their impact. If our societal infrastructure acts as a countertop, then we need more sponges to help slowly filter water wherever gravity leads it. Rain barrels or a small garden of native wildflowers would be a simple way to make a difference, since every little bit counts. Elementary interventions are all that are required on our behalf, as truly the restoration of stream and river corridors is bestowed to all of us.