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Free-Flowing Water, Restrained

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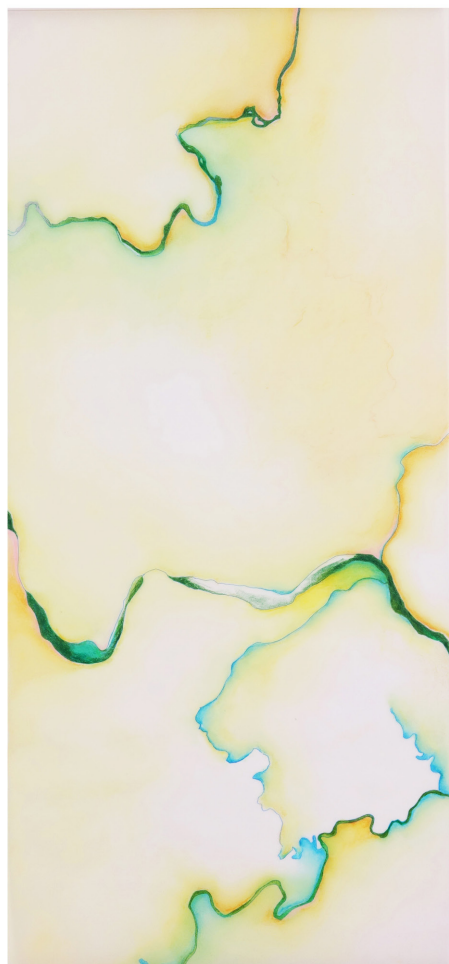
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Wabaunsee Waters I
Lynn Benson



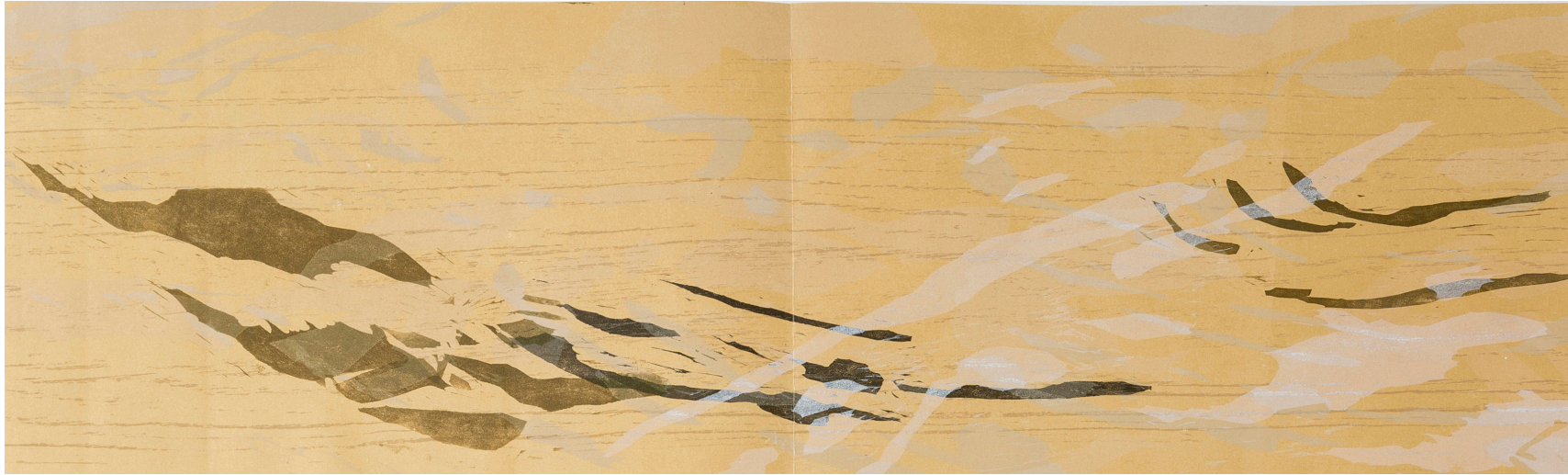
Wabaunsee Waters II
Lynn Benson

FREE-FLOWING WATER, RESTRAINED

I suspect few think of the Flint Hills — an upland landscape with modest rainfall and occasional droughts — as an important area for free-flowing water.

Surprisingly, though, it is. For one, the Flint Hills has the largest concentration of springs in Kansas. There are more than 200 on just the Tallgrass Prairie National Preserve alone. While most are intermittent or “wet weather” springs, several have strong flows year-round, and a few springs in the Flint Hills are downright impressive. An example is Miller Spring in Chase County, which reliably releases about 1,800 gallons of water per minute. The Flint Hills are also the ultimate source of several relatively pristine streams and rivers, although most have been impacted by dams constructed over the past seventy years.

One Flint Hills stream that stands out as a gem is Ivanpah Creek, which has its origin along the eastern flank of Butler County. Because Ivanpah’s watershed is almost entirely native prairie, its water runs clean and clear, which in turn supports a rich aquatic community. An important member of that community is the spotted bass, the only bass native to the Flint Hills. The Ivanpah is considered one of the better spotted bass fisheries remaining in Kansas. The more aggressive largemouth bass appears to be slowly replacing spotted bass in many Flint Hills streams, and likely in the Ivanpah too. This non-native is problematic for other native fish as well. (Think of largemouth



Missouri River Book , page 6
Gesine Janzen

bass as a modern-day, freshwater version of T-Rex.) Where largemouth bass reside, bait-sized fish must hide from this apex predator instead of doing things like making babies. Perhaps most impacted by largemouth bass is the Topeka shiner, a small minnow whose last stronghold is in the Flint Hills. The Topeka shiner borrows the spawning beds of sunfish (saucer-shaped depressions in the substrate created and defended by male sunfish) to lay its eggs, but apparently the presence of a T-Rex equivalent predator squashes its reproductive urge to venture onto these spawning beds.

From the heights of Ivanpah's watershed, about 1,650 feet, water flows easterly until reaching the West Branch of the Fall River. From there it takes a southeasterly course, where it ties into the Fall, Verdigris, Arkansas, Mississippi, and, eventually, Gulf of Mexico. As it flows to the Gulf, Ivanpah's water encounters several hydrologic alterations. The first is the sixty-plus stock ponds in the watershed used to water cattle. Next is a thirty-five acre watershed impoundment (north/downstream of the 2014 and 2018 Symphony in the Flint Hills site) designed to lessen the risk of downstream flooding. These types of impoundments were built

across the Flint Hills as a substitute for larger, federal reservoirs discussed below. Two similar structures are located on other branches of the Ivanpah. Further downstream in the Fall River is a low-head dam that was built to provide water for the city of Eureka, and then a few river miles later Fall River Lake, the first of several federal reservoirs built by the U.S. Army Corps of Engineers. Let's take a deeper dive into this lake.

Fall River was the first federal reservoir authorized in Kansas in 1941, but World War II delayed its completion until 1949. It was touted as an engineering marvel to provide flood control, municipal water,

fish and wildlife habitat, and recreation. Many flocked to the lake after its construction to recreate. Even my parents honeymooned here shortly after the lake filled. While the benefits of the lake are many, there were and are undesirable impacts too. One was the uprooting of families to allow for the lake's construction and impoundment. Several of these displaced families had roots here since statehood. Not only were homes lost to condemnation, but also their agricultural livelihood. Even cemeteries with interned kin had to be relocated. While landowners were financially compensated, skyrocketing land values and the delay

between appraisals and compensation meant they could not replace what had been taken. Being forced off their land was more than some could bear. Tragically, two suicides were attributed to the lake's construction. Even though this occurred seventy years ago, there is still lingering resentment about the lake.

There is also an ecological cost to damming a river. When a stream is dammed, it is transformed from a free-flowing, well-oxygenated habitat to one of standing water. This impounding of water allows suspended sediments to settle, forming a blanket of silt across the lake bottom. Over the past seventy years, siltation has reduced Fall River Lake's water storage capacity by nearly 30 percent. Because part of the precipitated sediment is organic, oxidation occurs, depleting oxygen and releasing carbon dioxide in the process. Lake-adapted species benefit from this transformation, but at the expense of many riverine species. Suitability of downstream habitats is also impacted. The discharge of accumulated flood waters confines the immense energy of floods to only the downstream channel, rather than over the river's flood plain, resulting in streambed downcutting and lateral migration. Dams

are also a physical barrier to fish. No longer can species like the American eel reach Kansas because of the many dams that now block their path. Dams also block the passage of freshwater mussels, which hitchhike during their larval stage on the gills and fins of fish.

The recent abundance of ponds and lakes in the Flint Hills, not to mention water wells, has lessened the importance of free-flowing water for today's Flint Hills residents, something that was of critical importance just a couple generations back. While the benefits of impounded water are apparent, we should recognize the negative side too and explore ways to mitigate impacts. We should also appreciate and protect waters that run free, an important water feature teeming with life with a longing to flow unobstructed to the sea.

Brian Obermeyer is the director of The Nature Conservancy's Flint Hills Initiative. He works with private landowners to help preserve this impressive landscape. He also oversees stewardship on more than 13,000 acres of Conservancy-owned land in the Flint Hills, including the Tallgrass Prairie National Preserve.



Dancing in the Fog
Crystal Socha