Ohio EPA cleanup of ‘salt fill site’ should allow ecologically damaged Mentor Marsh to truly heal after more than 50 years

Updated: Jul. 15, 2022, 9:12 a.m. | Published: Jul. 15, 2022, 8:00 a.m.

Great Lakes Construction has begun work on a $10.6 million Ohio-EPA led cleanup of a salt dump that has been contaminating Mentor Marsh for decades.Peter Krouse, cleveland.com

By Peter Krouse, cleveland.com

MENTOR, Ohio – It was one of the worst ecological disasters to befall Northeast Ohio and it has nothing to do with the infamous Cuyahoga River.

More than a half-century ago, Mentor Marsh, then a largely forested wetland along Lake Erie that would become Ohio’s first state nature preserve, began dying after a contractor dumped more than 200,000 tons of waste salt into a feeder stream called Blackbrook Creek.

Such a decision would never be allowed these days, but this was 1966, before the Clean Water Act the creation of the U.S. Environmental Protection Agency and ahead of the nature preserve designation in 1971. As one might expect, the dumping of the salt had disastrous consequences.

Fortunately, this story has a happy ending, or at least a hopeful one. Not only has the Cleveland Museum of Natural History led a successful reemergence of the 700-acre preserve, but the Ohio EPA recently began a $10.6 million cleanup of the source of the pollution.

Remediation of the so-called “salt fill site” should finally stop the leaching of salt and other caustic materials into the marsh so that it can truly heal.

“Fifty-six years in the making, it’s pretty historic,” said David Kriska, restoration ecologist with the Cleveland Museum of Natural History, which owns the preserve along with the Ohio Department of Natural Resources.

The Ohio EPA is leading a $10.6 million cleanup of a salt dump that has been contaminating Mentor Marsh State Nature Preserve for more than 50 years.Plain Dealer file

A pre-regulatory disaster

It all began when the Morton Salt Co., which has a mine in nearby Grand River, hired a company run by Jerome T. Osborne Sr. to get rid of low-grade salt that had no commercial value at the time. Osborne's solution was to spread it on property that he owned adjacent to Mentor Marsh along Blackbrook Creek.

"He filled in the 7-acre ravine right here," Kriska said, pointing to an area behind a residential subdivision where earth-moving equipment had begun the task of removing the salt and layers of lime kiln dust and fly ash that Osborne had piled on in subsequent years.

"It just wilted the whole place," Kriska said.

Eventually, all the trees in the marsh died and the vegetation was choked out by an infestation of phragmites, a non-native reed grass found along the Tigris and Euphrates rivers in Iraq and up and down the Nile River in Africa.

Phragmites are an "uber invasive" plant, Kriska said, and soon there were an estimated 1 billion of their stems – about one every 3 inches - rising from the marsh bed, in some cases as high as 24 feet.

The reeds crowded out other wetland plants, creating a monoculture that drove away the diverse, native species of birds, mammals and aquatic life. And when the phragmites dried

out, they periodically caught fire. The last big blaze happened in 2003, dropping dark black soot 20 miles away and making international news.

That same fire also destroyed the Wake Robin Trail Boardwalk that extended nearly 1,000 feet into the marsh. That's when the museum said enough was enough. It paid a premium for a special herbicide to kill the phragmites around the boardwalk while not harming fish and other aquatic life.

Then in 2012, the museum began to use helicopters to drop herbicide on other areas of the marsh, Kriska said, and thus began an all-out assault from the air, one chunk of marsh at a time. Later, a contractor was hired to drive an amphibious vehicle through the marsh to mash down the phragmites so they would rot and expose the soil to sunlight, and work crews were dispatched to spot treat areas with herbicide.

Invasive phragmites (left) encroached on the Wake Robin Trail Boardwalk at Mentor Marsh before a 2003 fire burned them off, paving the way for marsh restoration (right).Cleveland Museum of Natural History

A much-improved marsh

Today, 90% of the phragmites are gone and those that remain are either single stalks or small patches scattered around the marsh, Kriska said.

Slowly, the native habitat began to return, including flowering plants such as blue vervain and the swamp milkweed that attracts the Monarch butterfly.

One of the early amphibians to return was the leopard frog, a sign that the ecosystem was coming back together.

“That means the frogs were eating aquatic insects,” Kriska said, and snakes were eating the frogs and hawks were going after the snakes.

Foxes and wild turkeys also returned in abundance, as did the migratory birds that used the marsh as a stopover. During the recent spring and fall migrations, 5,000 ducks were observed

coming into roost nightly, Kriska said, after which they would hang out in the shallows during the day.

Most of the fish in the marsh also had been squeezed out by the super dense infestation of phragmites, but removal of the reeds combined with higher water levels on Lake Erie have created a much more accommodating habitat. Observers have now identified 26 species of fish in the marsh, including yellow perch, Kriska said.

Removing the pollution source

But continuing to treat the marsh with herbicide did not remove the cause of the damage, the neighboring salt dump. That would be left to the Ohio EPA and the state Attorney General's Office. After various efforts over the years to prevent leaching, including culverting Blackbrook Creek, capping the salt fill and eventually rerouting the stream, the Ohio Attorney General on behalf of the Ohio EPA sued Osborne in 2013 over damage to the marsh.

Osborne, who had become a business legend and prominent philanthropist whose name adorns the football field at Mentor High School, died in 2014, and the state eventually settled with his heirs in 2019.

A consent order turned the contaminated property over to the Lake County Land Bank and provided the $10.6 million to remove the salt. The Ohio EPA then hired Great Lakes Construction to do the work that's necessary to stop the leaching and allow the salt to be flushed from the marsh once and for all.

The remediation plan, which Great Lakes Construction has a year to complete, calls for taking the salt and other contaminants to a secure landfill in Ashtabula County, said David Emerman, assistant chief of the Division of Surface Water at Ohio EPA, and then contouring the property but not restoring the creek.

David Kriska, restoration ecologist with the Cleveland Museum of Natural History, stands near a patch of phragmites in Mentor Marsh State Nature Preserve.Peter Krouse, cleveland.com

While the Mentor Marsh has improved, there still are hot spots, said Dan Donaldson, district administrator for the Lake County Soil and Water Conservation District. “I think we’re going to see a pretty immediate response once this salt is taken out of there.”

Whether the marsh becomes a forested wetland again remains to be seen. Today, it’s pretty much an open marsh since all the woody vegetation was killed off.

“It all depends on management and nature, I guess,” Donaldson said.

Whatever the course of recovery, the marsh will never get back to where it was before the ecological damage occurred, said Gavin Svenson, director of research and collections at the Cleveland Museum of Natural History, because you can’t recreate the exact species composition, chemistry and other aspects of the habitat that existed before.

Ecological damage is not 100% reversible, he said, “But we can do a good job trying to get as close to it as possible.”'

The Mentor Lagoons Nature Preserve, which borders the western end of Mentor Marsh State Nature Preserve, has recovered better than other areas of the marsh area that are closer to Blackbrook Creek, a feeder stream polluted with low-grade salt.Peter Krouse, cleveland.com