



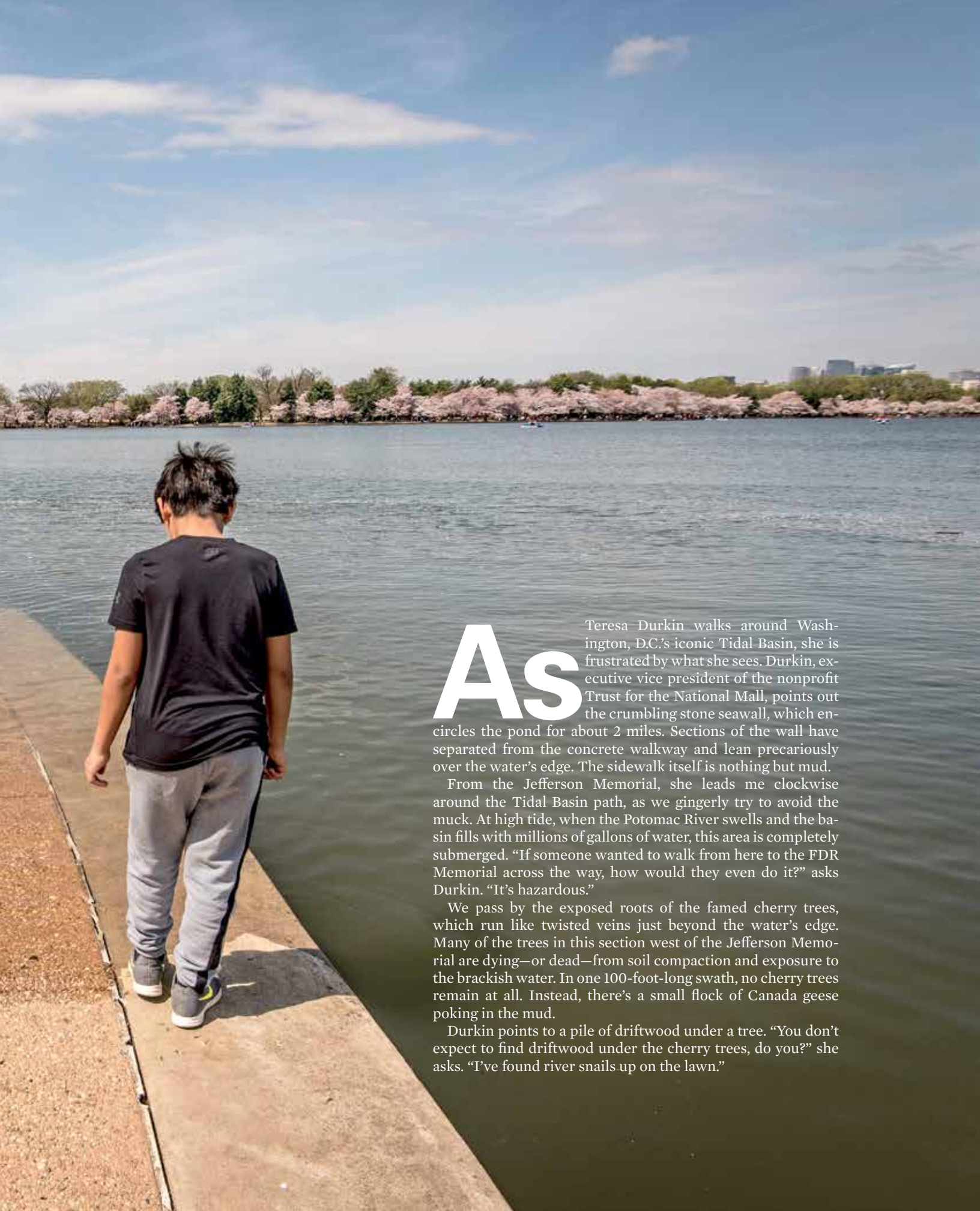
# UNDERWATER

**Sea level rise and structural problems  
pose serious threats to the National  
Mall's beloved Tidal Basin**

**by Joe Sugarman**

**Photography by Sam Kittner**





# As

Teresa Durkin walks around Washington, D.C.'s iconic Tidal Basin, she is frustrated by what she sees. Durkin, executive vice president of the nonprofit Trust for the National Mall, points out the crumbling stone seawall, which encircles the pond for about 2 miles. Sections of the wall have separated from the concrete walkway and lean precariously over the water's edge. The sidewalk itself is nothing but mud.

From the Jefferson Memorial, she leads me clockwise around the Tidal Basin path, as we gingerly try to avoid the muck. At high tide, when the Potomac River swells and the basin fills with millions of gallons of water, this area is completely submerged. "If someone wanted to walk from here to the FDR Memorial across the way, how would they even do it?" asks Durkin. "It's hazardous."

We pass by the exposed roots of the famed cherry trees, which run like twisted veins just beyond the water's edge. Many of the trees in this section west of the Jefferson Memorial are dying—or dead—from soil compaction and exposure to the brackish water. In one 100-foot-long swath, no cherry trees remain at all. Instead, there's a small flock of Canada geese poking in the mud.

Durkin points to a pile of driftwood under a tree. "You don't expect to find driftwood under the cherry trees, do you?" she asks. "I've found river snails up on the lawn."





Frankly, I'm kind of shocked. "I didn't realize conditions were this bad," I say.

"Most people don't," she says.

Due to climate change and runoff caused by development along the river, water levels in the Potomac River have risen since the Tidal Basin's construction as part of the National Mall in the late 1800s. Scientists estimate an increase of 11 inches or so in the past 90 years. That makes a huge difference in the severity of storm surges and high tide flooding. Making matters worse, the basin was constructed on manmade land and is slowly sinking. It's an unsustainable combination, and conditions are only expected to get worse.

Another problem is that the basin was never meant to accommodate the sheer number of people who come every year. The National Mall is the country's most visited national park, with some 36 million sightseers annually. More than 1.5 million of them stroll among the cherry trees during the 4-week National Cherry Blossom

Festival each spring. Without a navigable walkway, people clamber over tree roots and turn the soil into hardpan, which doesn't drain properly. And if they arrive in a wheelchair or with kids in a stroller, maneuvering around the Tidal Basin Loop Trail becomes nearly an impossible feat.

"It's just over the top in terms of use and the amount of people who come here," says Durkin, who has worked at the Trust for the National Mall since 2012. "But we want them to come here and come back. We want children to be inspired. We want to be able to teach something. It's a matter of pride, too. This is our nation's capital and a symbol of democracy, but it just becomes harder and harder to physically maintain it under these conditions."

**IN THE SPRING OF 2017** officials from the National Park Service met with representatives from the National Trust for Historic Preservation to discuss the threat to the Tidal Basin. Later, the Park Service connected the National Trust with Durkin and her





**“IT’S SUCH A REMARKABLE PLACE ... IT’S EASY TO IGNORE THE CHALLENGES THERE—UNTIL YOU POINT THEM OUT.” —SERI WORDEN**



*Previous pages:* Navigating a submerged sidewalk at the Tidal Basin. *Opposite:* The site’s delicate cherry blossoms form a living canopy around the edges of the basin each spring. *Above:* More than 1.5 million visitors flock to the Tidal Basin for the annual National Cherry Blossom Festival.

team. They all agreed that the status quo was untenable. Total restoration costs are estimated to be between \$300 million and \$500 million—and that doesn’t include an additional \$650 million in deferred maintenance for the entire Mall. The group’s efforts laid the groundwork for “Save the Tidal Basin,” a fundraising and public awareness campaign overseen by the two nonprofit organizations and the Park Service.

As part of the campaign, the group approached five of the nation’s leading landscape architecture firms and asked them if they’d come up with innovative designs that address not only flooding around the Tidal Basin, but also other pressing issues, including accessibility, security, and visitor circulation. The five firms—DLANDstudio, GGN, Hood Design Studio, James Corner Field Operations, and Reed Hilderbrand—are collaborating as part of an “Ideas Lab,” supported by a \$750,000 grant from American Express and guided by the architecture firm Skidmore, Owings & Merrill. This fall designs from the Ideas Lab will be exhibited in Washington, D.C., as well as

online, in order to bring awareness to the Tidal Basin’s plight and inspire creative thinking about how to address it.

To help kick off the campaign, the National Trust added the Tidal Basin to its list of National Treasures in April of 2019 and distributed “Save the Tidal Basin” buttons and T-shirts to thousands at the National Cherry Blossom Festival last spring. The Tidal Basin also made it onto the National Trust’s 2019 list of America’s 11 Most Endangered Historic Places.

Seri Worden, acting senior field director at the National Trust, says the publicity created by the campaign and the Ideas Lab should go a long way toward helping create greater awareness of the basin’s condition, with the general public as well as a Congress tasked with appropriating funds. “It’s such a remarkable place,” she says. “The public goes there and it’s almost like they don’t want to see the damage because they’re so focused on the beauty and significance of it. It’s easy to ignore the challenges there—until you point them out.”



**“THERE ARE CROWDED SIDEWALKS, NOT ENOUGH RESTROOMS, PEOPLE TRAMPLING TREE ROOTS. THE RESOURCES ARE BEAUTIFUL BUT THEY’RE SLOWLY BEING DESTROYED.” —SEAN KENNEALY**

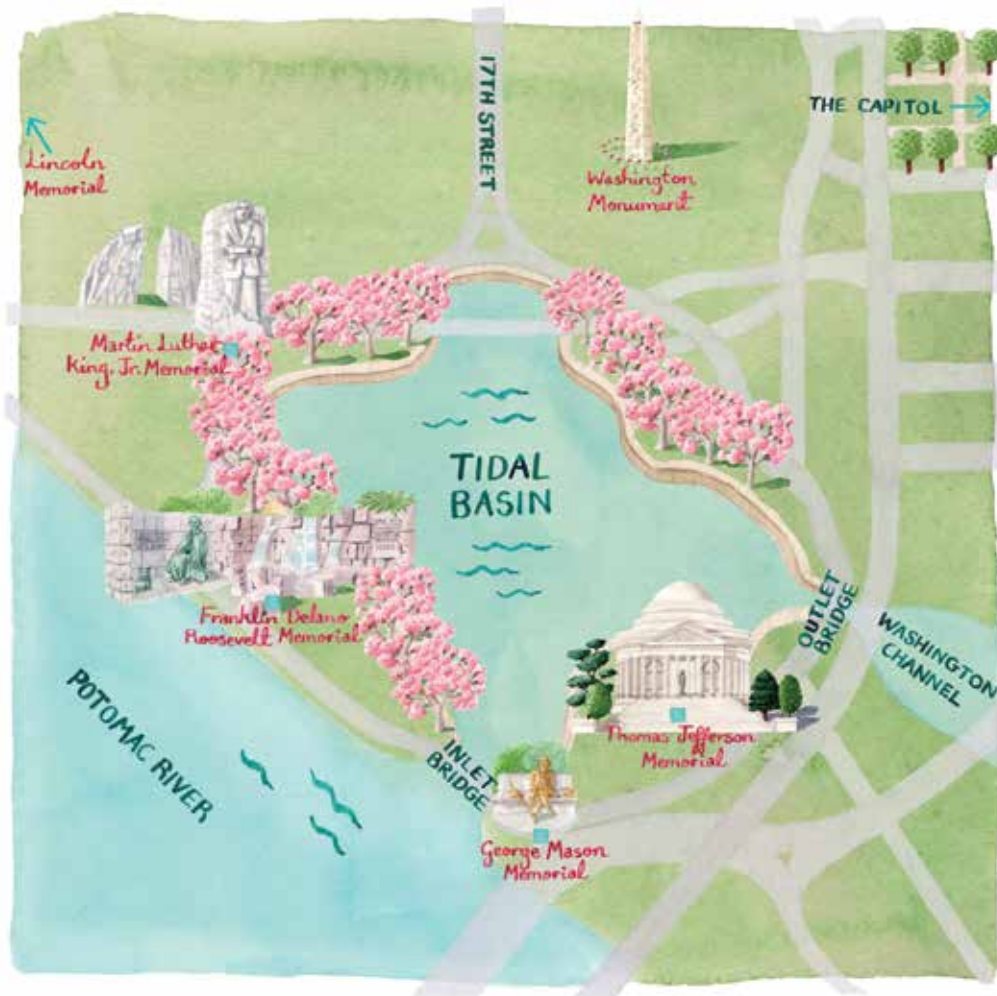
**FLOODING IN WASHINGTON, D.C.**, isn’t new. The Tidal Basin was built in response to a flood in February of 1881 that was so severe, people couldn’t access the southern part of the city except by boat. Water from melting snow and storms flooded sections of the National Mall, nearly up to the Capitol building. One year later, Congress appropriated funds to build the basin in order to control future floods as well as to help clear the Washington Channel of silt.

To build up the land that would eventually form East and West Potomac parks, which surround the basin, the U.S. Army Corps of Engineers dredged shipping channels along the Potomac River and used sediment to fill in the tidal wetlands. In the 1890s and early

1900s, engineers installed multiple sets of gates at the entrance and exit of the newly created inland pond. Twice a day at high tide, around 250 million gallons of water from the Potomac River rushed through the inlet gates, filling the basin. The force of the water exiting the outlet gates as the tide ebbed helped flush the Washington Channel of debris, allowing deep-hulled boats to navigate its waters. But the inlet and outlet gates haven’t been fully operational in decades. Silt has built up on both sides of the massive doors, which can barely open. Currently, water floods over the gates or flows between the openings. (As part of the Ideas Lab, the five landscape architects are also addressing solutions for the gates.)



*Clockwise from left:* Compaction of the soil from millions of footsteps and exposure to brackish water from constant flooding is harming the trees’ roots; The flooding causes muddy, hard-to-navigate sidewalks; The stone wall around the basin is crumbling in places.



In 1897, Congress designated the recently formed parkland to be used for the “recreation and pleasure of the people.” Bridle paths, boating facilities, and a bandstand soon followed.

The renowned cherry trees—more than 3,000 of them—arrived in 1912 as a gift from Japan. On March 27 of that year, First Lady Helen Taft and Viscountess Chinda Iwa, wife of the Japanese ambassador, planted the first two Yoshino cherry trees on the northern bank of the basin, about 100 feet south of what is now Independence Avenue SW. In subsequent years, workmen planted the remaining trees around the basin and the Washington Monument and along East Potomac Park, creating a tapestry of pink blossoms every spring. After several small celebrations marking the trees’ bloom, local civic groups organized the first official Cherry Blossom Festival in 1935.

In the basin’s earliest years, Washingtonians used it to cool off during summer. Congress funded the construction of a Tidal Basin bathing beach on its southern edge in 1918. Beachgoers lounged under umbrellas, took swimming lessons, and demonstrated their diving skills from several platforms into the water, which is about

10 feet deep. Despite hosting an annual beauty pageant, beach officials prohibited women’s bathing suits that were more than six inches above the knee. The rule was strictly enforced by a Tidal Basin “beach cop,” with tape measure in hand.

Like many parts of the District, the Tidal Basin beach was for whites only. Congress had decided to fund a separate area for African Americans, but some senators objected. Instead of working toward a compromise, lawmakers had the beach closed in 1925.

By the late 1930s, the focus of the Tidal Basin had shifted toward monument building. On its southern side, the Jefferson Memorial opened to the public in 1943. After a hiatus, memorials to Franklin Delano Roosevelt (1997), George Mason (2002), and Martin Luther King Jr. (2011) followed. The often flooded Tidal Basin Loop Trail became the pathway linking them all.

“The landscape has changed so much with these new sites, and it brings in much greater visitation,” says the Park Service’s Sean Kennealy, acting deputy superintendent for the National Mall and Memorial Parks. “It wasn’t designed to accommodate the traffic. There are crowded sidewalks, not enough restrooms, people trampling tree roots. The resources are beautiful but they’re slowly being destroyed.”

**KENNEALY IS ANXIOUS TO HEAR** the concepts proposed in the Ideas Lab. First on his wish list is a creative solution for the seawall, which, he says, essentially impacts everything else—the walkways, the health of the cherry trees, and how people access the trees. Also high on his list is security, particularly around the Jefferson Memorial, which relies only on temporary Jersey barriers to deter vehicular traffic. He’s also concerned about how people get to the Tidal Basin itself. Currently, visitors must cross several congested thoroughfares in order to reach the area from the Mall.

What the outcome might ultimately look like, Kennealy doesn’t know, but he’s ready for a fresh approach. “I think at this point we



**“WE HAVE TO START IDENTIFYING SOLUTIONS BASED ON WHAT WE KNOW HOW TO DO NOW AND ACCEPT THAT WE MIGHT NEED TO START THINKING ABOUT THINGS DIFFERENTLY.” —TERESA DURKIN**

Flooding is not typically happening on the eastern side of the Tidal Basin, where these Yoshino cherry trees are located. But foot traffic in the area has led to heavily compacted soil, which crushes and prevents growth of the trees’ roots.

should be open to a variety of ideas,” he says. “Now is the time to be creative. We’re not wed to anything. It’ll be good to get some outside-the-box thinking.”

Durkin, who was trained as a landscape architect and worked for years in land management issues for public institutions, anticipates the five design firms will not disappoint. In the process, the Tidal Basin may well become a very public example of how cities deal with saving historic sites threatened by rising sea levels. And she realizes that some people might not be as enthusiastic as others about the results. “It’s going to require a change of thinking,” she says. “How are we going to preserve these historic places and keep them exactly the way they are? It just might not be possible. How much can you fight the river?”

“Look,” she continues, “you can’t build a wall around every city. You have to come to terms with having to lose some of these places. What are we willing to do in order to preserve this place in some form or another? Does it get de-structured a bit? Does it get bridges where some of the wall is going away? Do we create wetlands on the edge? Do we fill part of it in? There are so many ways to look at it. We have to start identifying solutions based on what we know how to do now and accept that we might need to start thinking about things differently and be open to change.”

Historically, altering the Tidal Basin landscape has not always gone over well. In 1938, before construction started on the Jefferson Memorial, a group of more than 50 women marched on the White House to protest the destruction or disturbance of 171 cherry trees that were to be affected by the work. The next day, the women, whose ranks had swelled to about 150, symbolically chained themselves—as well as a park police officer—to trees at the construction site in an effort to stop the work. Ultimately, the protesters were unsuccessful, but they had made their point. The event would famously be remembered as the Cherry Tree Rebellion.

Nathan Heavers, an associate professor of landscape architecture at Virginia Tech who is also a member of the Ideas Lab advisory committee, says he understands that significant changes to a beloved landscape might not go over well. But he points out that the Tidal Basin’s use has already changed dramatically over the years.

“It’s a question of what we mean by preservation of a pretty dynamic landscape that has come together piece by piece,” he



says. “I sort of hope that people see it as a landscape that can continue to change and try to think about what aspects of it we’d like to preserve.”

Like Durkin and Worden, he believes the Ideas Lab has an important role to play. Some ideas won’t be implemented at all, but everyone involved believes it’s vital to get the conversation started.

As we continue our stroll around the Tidal Basin, Durkin tells






The National Mall's Tidal Basin is part of the National Trust's National Treasures program. To learn more about how you can support National Treasures, visit [SavingPlaces.org/treasures](https://SavingPlaces.org/treasures)



me the situation has indeed become urgent. She only hopes that through the Save the Tidal Basin campaign, the general public and Congress will see it that way as well.

“The situation is not changing, except that the river will continue to rise,” she says. “It could continue to rise for another 100 years if nothing is done. We have to project ahead and think about how are we going to adapt, which is the key word. A lot of people like to

talk about resiliency, but I think we really need to adapt here. We may have to change our thoughts about the Tidal Basin as we go forward, but we certainly have to stabilize it or else it will disappear, and then it’ll be too late.” 

**JOE SUGARMAN** is a frequent contributor to *Preservation*. His last story for the magazine was about the restoration of Christ Church in Philadelphia.