

DULUTH

# Duluth's Park Point may be gradually crumbling away

The future is important to the more than 300 residential structures, hotels and other businesses that call it home, as well as the bustling shipping industry

By Pam Louwagie (<http://www.startribune.com/pam-louwagie/10645326/>) Star Tribune |

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DULUTH - From atop this city's steep and rocky hill, the thin ribbon of land cradling the western tip of Lake Superior looks serene.

Known as Park Point, the 6-mile sand spit just beyond the city's iconic lift bridge is dotted with buildings and trees and grassy dunes. Beige beaches slope into the world's largest freshwater lake on one side, and backyards about an industrial harbor on the other.

It's not easy to see what some scientists do: Park Point may slowly be slipping away.

Like other sandy barrier islands and bay-mouth sandbars around the Great Lakes and the world's seas, historically high water levels and battering storm waves are eroding Park Point from all angles. Lighthouse piers have stopped sediments from replenishing it. And the lake bottom is slowly but unevenly springing back from the weight of the glacier that formed it, tipping even more water toward Duluth.

Park Point's future is important to the more than 300 residential structures, hotels and other businesses that call it home, as well as the bustling shipping industry that relies on the safety it provides for the Twin Ports.

"Park Point, sitting out there in the lake, is essentially drowning" — and starving — said John Swenson, an associate professor of earth and environmental sciences at the University of Minnesota Duluth, and one of a handful of scientists who have studied what is happening there. "Some of it is human caused, some of it is natural."

## Storms take a toll

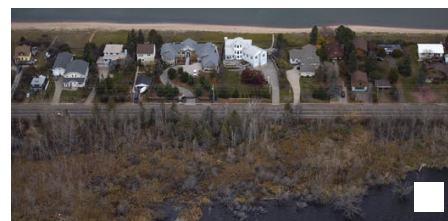
The big lake has pummeled its shores quite a bit the past few years. Jan Karon sees evidence of it daily on 2-mile beach walks from her house. Days after a powerful storm hit last month, tall conifers lay toppled into the water, their root base eroded from underground.

When Karon moved in 20 years ago, she estimated she had about 25 more feet of beach buffering her two-story home from the unsalted sea.

"It's insidious," she said recently as she walked the beach, her footprints blending in with the pocked sand. "Storm by storm, it eats away."

Karon's house is about five blocks from the lighthouse piers that guide ships to the city's lift bridge. Those piers have cut off sediment flows from the lake's North Shore, leaving Park Point, also called Minnesota Point, unreplenished. The same is happening on the other end of the point, where piers along the Superior Entry shipping channel — the border between Minnesota and Wisconsin — have blocked sediment flowing from the South Shore.

"When they put those breakwaters out to protect the shipping canal, that's what's been limiting the sediment movement down and around onto Minnesota Point," said Brandon Krumwiede, Duluth-based Great Lakes regional geospatial coordinator for the National Oceanic and Atmospheric Administration.



ALEX KORMANN - STAR TRIBUNE

One of the narrower parts of Duluth's Park



ALEX KORMANN, STAR TRIBUNE

Jan Karon walked along Park Point Beach, where neighbors are trying different approaches to slow erosion.

High water is eroding Park Point from the bay side, too, where many residents keep docks and boats.

Comparing old photos to modern satellite images, Swenson said it's obvious the sandbar has thinned. In some spots, "it's 50 percent thinner than it was in 1940. ... That isn't that long ago."

The maximum rate of erosion has been about a meter per year near the Wisconsin border, Swenson said. And while Park Point is less than 100 meters wide at its narrowest, Swenson and others warn that the rate could accelerate.

Climate change's long-term effects on lake levels still aren't completely understood. Levels have always fluctuated, though evidence points to it happening faster now, and with more storms, some scientists argue.

Even without climate change worries, the water level is slowly rising over thousands of years as the lake's bottom — carved out by heavy glaciers — springs back like an imprint on a foam mattress. Called isostatic rebound, the eastern end is rising slightly faster, tipping water toward Duluth.

Overall, the lake level is rising about a foot per century relative to the bedrock around it, Swenson said. "You can safely outrun that, right? But geologically, that's actually blazing fast," he said.

University of Wisconsin-Superior's Andy Breckenridge, a glacial geologist, believes the lake's cyclical water levels will go down again, though. The isostatic rebound is too slow to worry about now, he said.

Although scientists don't have a good handle on how things will look in 100 years, "I'd happily buy property on Park Point if I could afford to," Breckenridge said.

Sand spits like Park Point are dynamic, their position and shape morphing with the currents.

"They're wanting to move," said Jim Selegean, a coastal engineering specialist with the Army Corps of Engineers in Detroit. "But they're also desirable places for people to want to live, so there's that friction."

### **Where to start**

In September, a group of concerned Park Point residents founded the Erosion and High Water Committee.

"There are issues that can be solved," said committee Chairman Hamilton Smith, pointing out that part of the Netherlands is below sea level. "It just takes the will of the government to do it."

The beach on the lake side is a city park. When the committee met with city officials recently, they said, officials were sympathetic but didn't offer immediate solutions.

It's a matter of resources, said Jim Filby Williams, Duluth's director of public administration. City infrastructure all along the lake has been damaged, he said, forcing leaders to "deal with the issues that affect the most people the most detrimentally first."

Storms the past three years have left rail lines, parks, trails, bridges and businesses more vulnerable, he said. The city's Lakewalk trail and Canal Park shoreline are important to the city's vibrancy but also serve as a protective armor for infrastructure, he added.

For now, Filby Williams said, the city is seeking federal money to study what will become of the city's shoreline for the next 25 to 50 years — including spots on Park Point. Once the study is done, he said, officials can figure out the best strategies for specific areas, such as building up the shore or retreating from it.

Karon watches as her neighbors try to protect their properties. One put up a wall of plywood buffered by driftwood anchored deep into the beach. Others have erected snow fences. One put out sandbags, though several of those washed into the lake in the last

storm.

Krumwiede said other spots on the Great Lakes are struggling with similar problems. But building walls parcel by parcel doesn't help, because the water has to go somewhere.

"It's a two-edged sword," he said. "While it might protect your property, it may cause damage further down the shore to your neighbor's property. We see this time and time again."

At the forested far end of Park Point, the U.S. Army Corps of Engineers piped dredged sediment from a nearby shipping channel onto the beach this fall to replenish it — something it once did more often, but stopped because of concerns over plumes in the lake, Army Corps engineer Steven Brossart explained.

It helps mitigate erosion, Brossart said, but it has to be done regularly: "It's sand, and the wave action will eventually take the sand away."

If a sea wall were built, the beach would likely erode away, officials said — probably an unpopular trade-off for homeowners.

"Right now the Corps does not have any long-term plans other than possibly continuing our beach nourishment operations," Brossart said.

Duluth Seaway Port Authority leaders are confident the Corps and others will keep tabs on the erosion, said Jeff Stollenwerk, the port's director of government and environmental affairs. Park Point has "been there for thousands of years and we would expect it to continue to be there," he said.

Resident Gale Kerns said that for now, he and some others are seeking sediment replenishment near their homes not far from the lift bridge. "To build stuff and to do things on your own is a \$5,000 to \$10,000 expense," he said.

Paul and Loranda McLeete paid more than that to raise their backyard 2 feet after waves topped a wooden wall that once protected it on the bay side. Their shore is now lined with giant rocks to absorb wave energy.

"It was getting pretty scary," Loranda McLeete said. "Our house would have been at risk."

Long-term, the McLeetes feel their property will be OK, but they are still concerned for their neighbors. Scientists, engineers and residents will be watching.

"We expect it to change," Breckenridge said. "Predicting that change is not easy."

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**Pam Louwagie** is a regional reporter and Duluth Bureau Chief for the Star Tribune. She previously covered courts and legal affairs and was on the newspaper's investigative team. She now writes frequently about a variety of topics in northeast Minnesota and around the state and region.

pam.louwagie@startribune.com    612-673-7102    pamlouwagie