

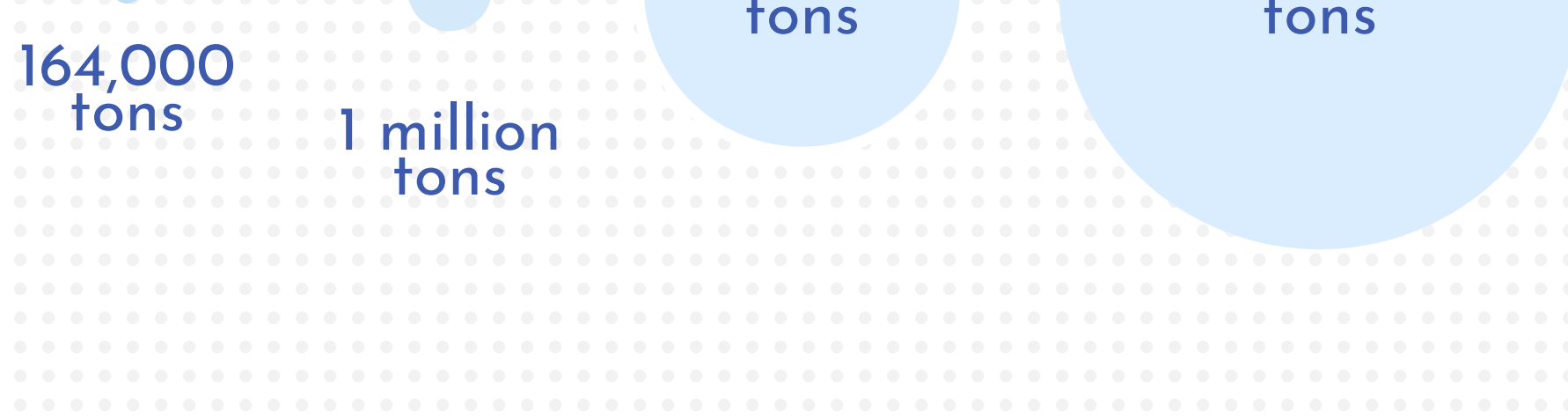
UNBUCKLING THE SALT BELT

EXPLORING SALT USE IN THE UNITED STATES' HEARTLAND

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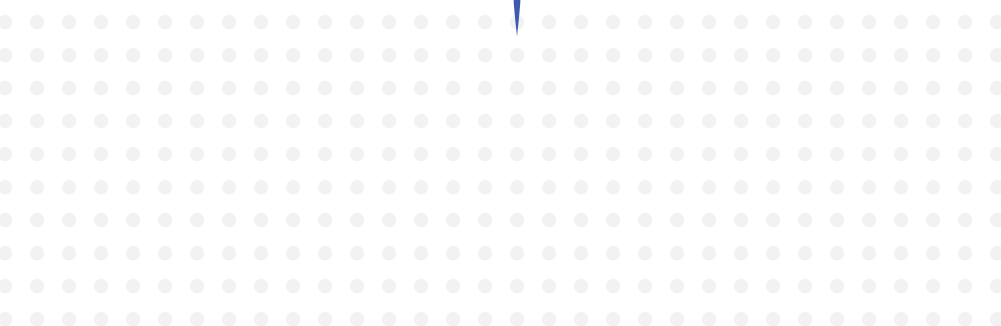


HOW MUCH SALT DOES THE UNITED STATES USE ON ITS ROAD?



Xianming Shi, an associate professor in civil and environmental engineering at Washington State University, estimates that the United States spends **\$2.3 billion** each year on snow and ice removal, plus an additional **\$5 billion** to pay for the damage the salt causes.

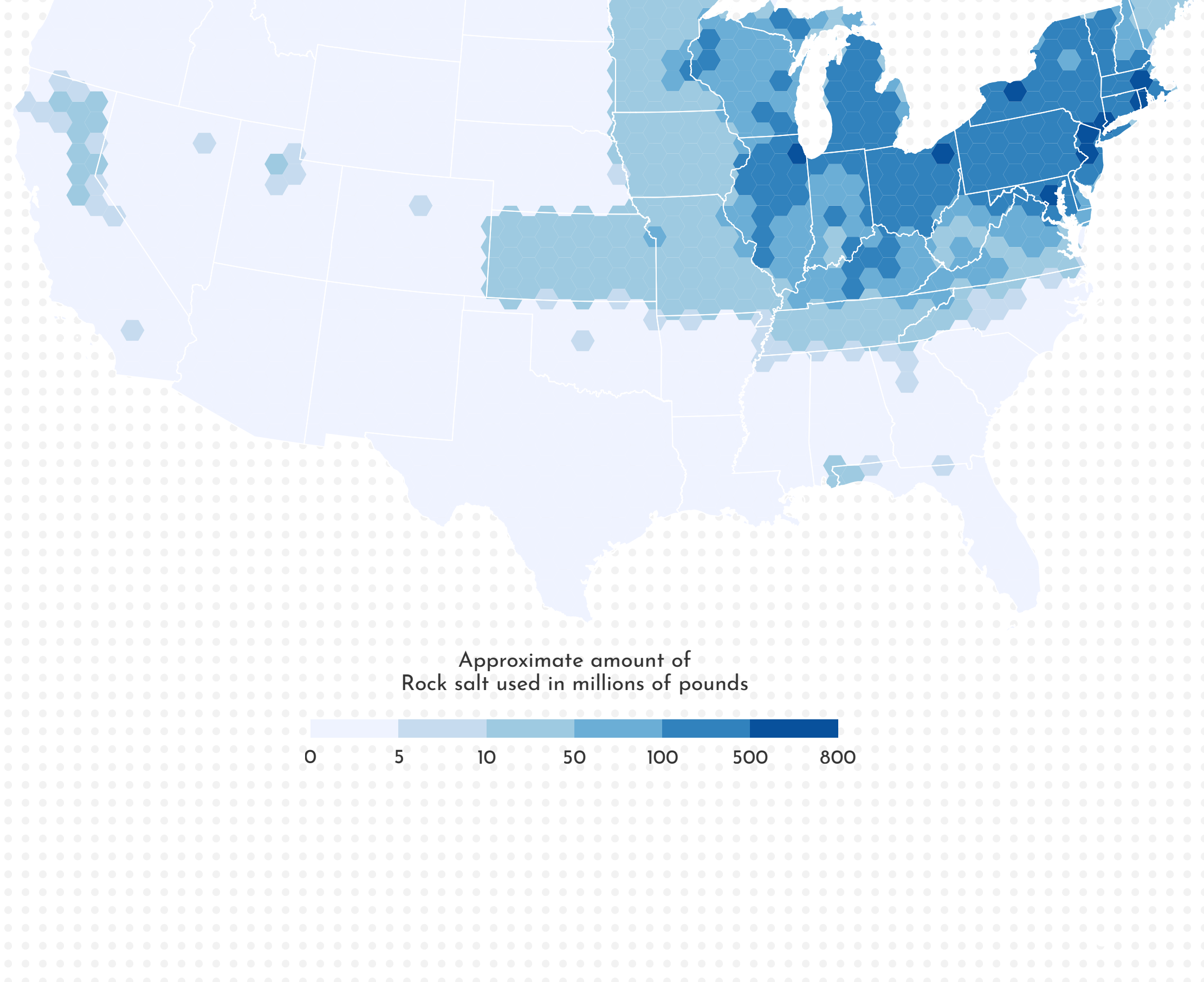
This does not include local city and rural roads, where much of the cost would be located



WHERE IS THE SALT USED?

Salt use is concentrated primarily in the Midwest and Northeast, and is heavily dependent on state policy. The core of the salt belt extends from Chicago to Boston, with New York being the heaviest salt user by far.

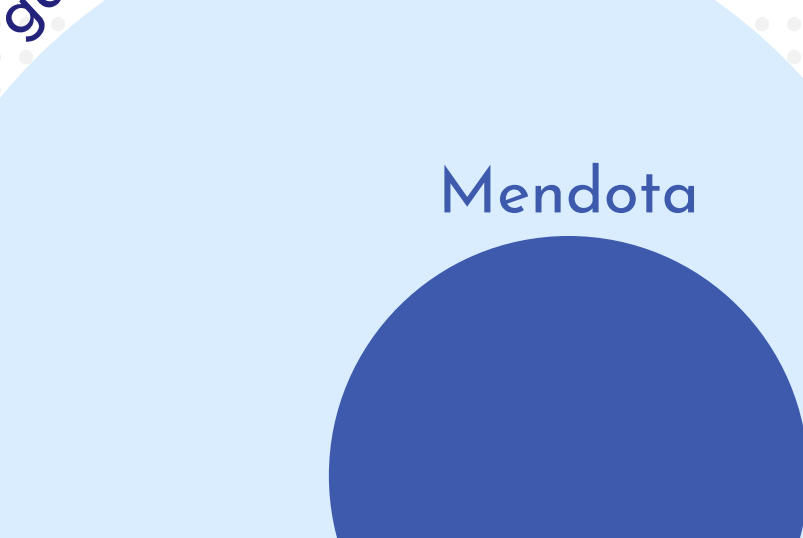
Snowy states in the West, however, use sand and gravel instead of salt, and do not incur the monetary and environmental costs associated with salting.



WHAT DOES SALT DO, REALLY?

LET'S LOOK AT THE SALT BELT IN WISCONSIN

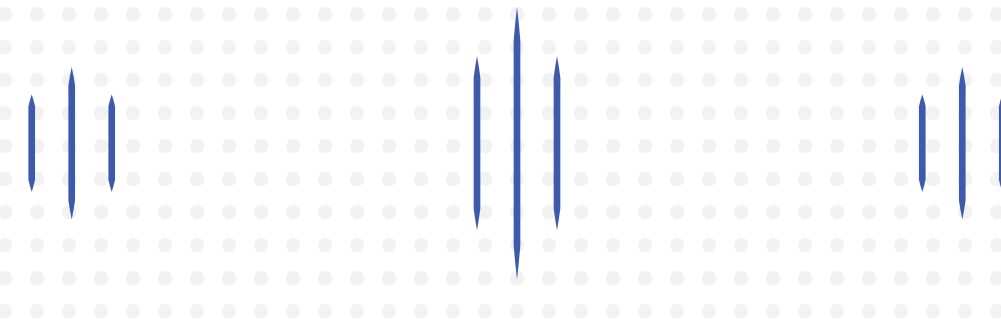
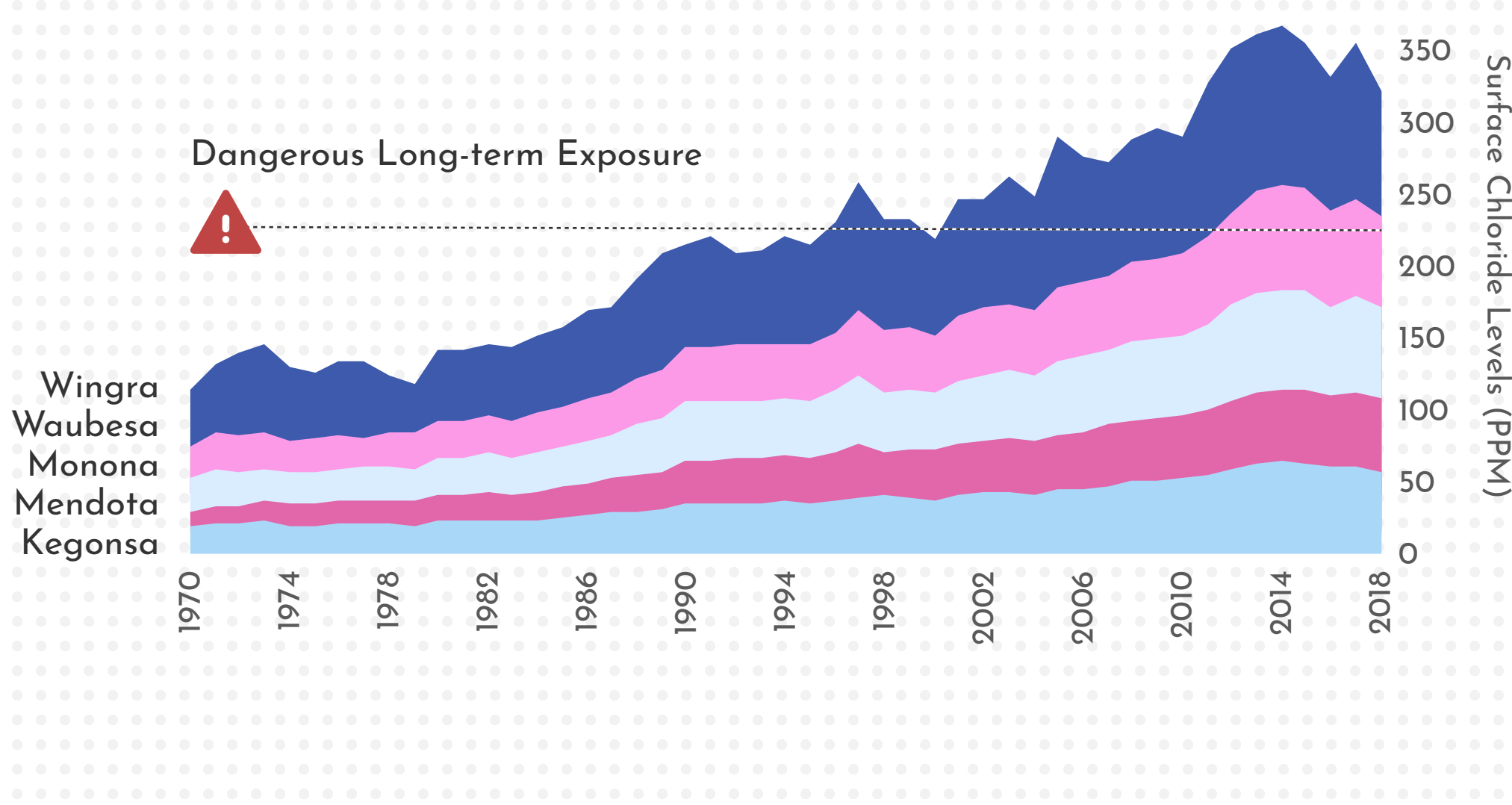
1 teaspoon of salt can permanently pollute 5 gallons of water.



Wisconsin uses 525,000 tons of salt every winter, enough to pollute 400 billion gallons of water. That's 3 times to volume of Lake Mendota.



There has been a recent push within Dane county to counteract the harmful effects of road salt. Lake Wingra, the smallest of the lakes has been above the hazardous chloride threshold since roughly 1996. Local administrators and residents have made efforts to reduce the salt used during each season, coinciding with a recent downward trend of chloride levels within local lakes.



WHAT ARE THE ALTERNATIVES?



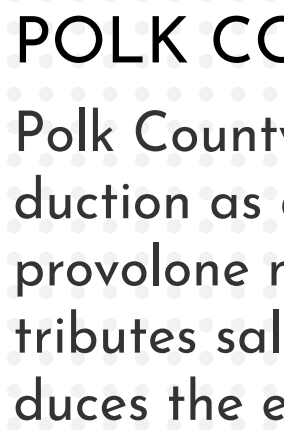
BEND, OREGON

During cold weather, the city of Bend, Oregon spreads volcanic rock to mitigate the effects of ice. The rock provides texture for tires, and the heat it absorbs from sunlight can aid melting. Unfortunately, the increased texture can make drivers more confident, and therefore drive faster. Faster driving speeds always correlate to more accidents, regardless of road conditions.



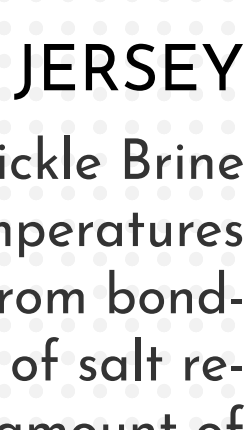
RED RIVER VALLEY

One of the primary industries in the state of Minnesota, sugar beets offer a unique alternative to road salt. Juice from the sugary plant has been found to be a more effective and eco-friendly method of de-icing local roads. The brine lowers the freezing temperature of water down to a chilling -20 degrees, versus the typical 5 degrees that results from applying road salt. Besides being less corrosive overall, beet brine application can also help keep road salt in place and consequently reduce the amount needed. Long-term side effects aren't yet entirely clear, although studies have found that the substance can negatively affect local insect populations.



POLK COUNTY, WISCONSIN

Polk County, Wisconsin uses cheese brine leftover from dairy production as a supplement to road salt. According to county officials, provolone makes for the most effective brine. Cheese brine still contributes salt to the environment, but the use of leftover material reduces the environmental impact of both salt production and transportation.



BERGEN COUNTY, NEW JERSEY

In 2014, Bergen County, New Jersey used a solution of Pickle Brine to de-ice roads. Pickle Juice can melt ice down to temperatures around -6° Fahrenheit, and also prevents snow and ice from bonding with pavement. Additionally, it reduces the amount of salt released into the environment, though it still releases some amount of salt.



CAN WE UNBUCKLE OURSELVES FROM SALT?

