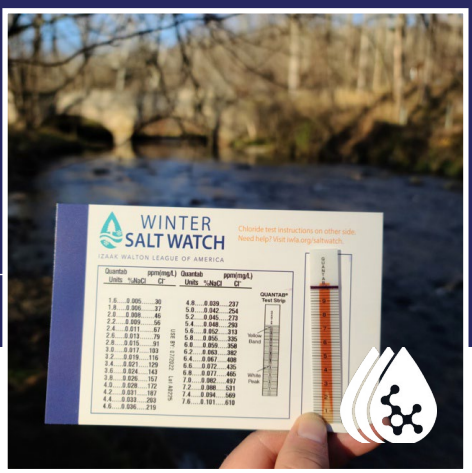
Sampling Chloride Strips Spread Truth on Road Salt Application Impacts

IZAAK WALTON LEAGUE OF AMERICA



What impact does road salt application have on our streams and rivers? A growing number of citizen scientists armed with chloride test strips and geo-located photos have committed to documenting the connection across the northern half of the United States. To date, the national program spearheaded by the Izaak Walton League of America has collected data from hundreds of rivers in ten states, sparked government action in three states, and provided a simple but effective monitoring program for countless non-governmental organizations to collect and share data both locally and nationally on an important but overlooked issue: road salt application.

Can you quantify road salt application's impact on water quality?

In 2018, an Izaak Walton League Clean Water fellow observed a big pile of road salt at the entrance to the IWLA Headquarters. A Department of Transportation truck had dumped the load in such a way that it covered a storm drain that flows water directly into the local stream, which also happens to be a training site for IWLA on Save our Streams monitoring protocols.

The pile of salt sat for days, causing internal red flags to the intern and doing little to improve road conditions for motorists. What impact was the salt having on the chloride levels in the stream? While he wanted to clean it up himself, that would have put him in the middle of a busy three lane throughway. Not all jobs should be left to volunteers.

Despite frantic calls to local county departments, a week passed before anyone took responsibility to remove the salt. As the salt seeped into the drain, the intern penned letters to the editor at both the Washington Post and in the local Olney Newspaper imploring someone to address the general issue of negligent road salt application. Through the experience, the intern realized that the world of road salt application is a complicated one with minimal research on hand to demonstrate the impact on our waterways and wildlife.

The Clean Water Team at IWLA asked the question, if this is one random point on a highway in a not-super wintery state, is road salt application a problem nationwide? Is there a network of people who care?

The Winter Salt Watch Program asks volunteers to monitor both road salt application and its impact on local creeks and streams across the upper half of the United States over the winter months.

Road salt is an emerging water quality issue. It is visible and relatable to a vast majority of residents in the northern half of the United States. The network of volunteers who participate in the program take samples at their local stream before winter weather hits, after storm events, and then again in the spring months. The data, sent to IWLA headquarter staff via geo-located images also makes its way into the hands of local and state officials responsible for implementing their winter road mitigation programs

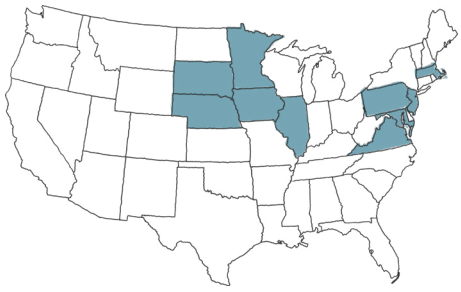
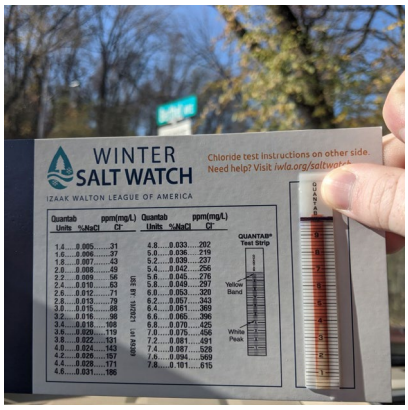


photo credit: Kevin Roth via Water Reporter

Role of the Monitoring Program

The Chloride test strips used by participants give a rudimentary picture of the level of chlorides in the stream, but because the program has volunteers geo-locate and time stamp their test strips, the information is adequate enough to pique the interest of NGOs and governments tasked with actual road salt application or enforcement of the Clean Water Act. In Minnesota and Virginia, the existence of the Salt Watch Program has sparked conversations between agency officials and scientists about how to revise their dangerous winter road mitigation strategies to do less harm to their waterways. The simplicity and low cost of the program has inspired both individuals to participate as well as small community monitoring groups looking for cost-effective yet engaging opportunities for eager and new volunteers.



About Izaak Walton League of America

The Izaak Walton League's Save Our Streams program is the only nationwide program training volunteers to protect waterways from pollution and bring information about water quality to their communities.

The program began in 1969, when water pollution problems were easy to see – like massive oil spills and burning rivers. Early Save Our Streams volunteers cleaned up trash from their local waterways and reported problems like streams becoming clogged with silt.

In the 1980s, the League recognized that with the right training, volunteers could collect scientifically valid data to assess water quality in local streams – a conviction that has proven true. Ever since, the League has been teaching volunteers to study stream health and report their findings to decision-makers.

Nexus to Water Data Collaborative

The Salt Watch Program demonstrates how engaged communities are better educated and better equipped to understand the interconnectedness of development decisions and natural resource quality. By distributing the same kit to hundreds of volunteers across the country, IWLA built an unprecedented understanding of the impact of road salt application on northern waterways and the vulnerability of these waterways to spikes in chloride.

Champions

Distributed Data Management

Network of Networks

photo credit: Sam Carroll via Water Reporter

Use Case Summarized by
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