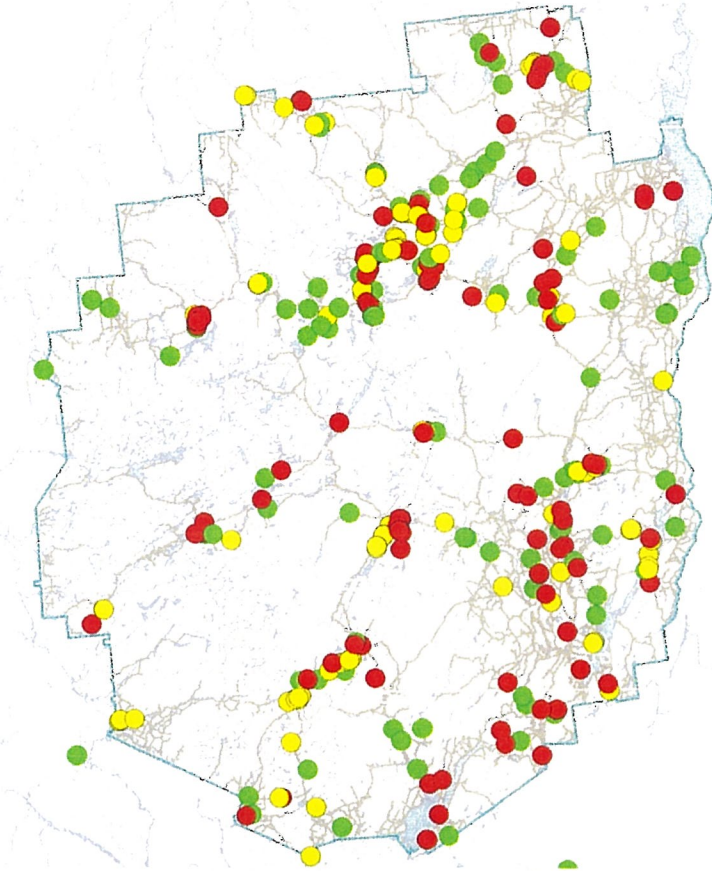
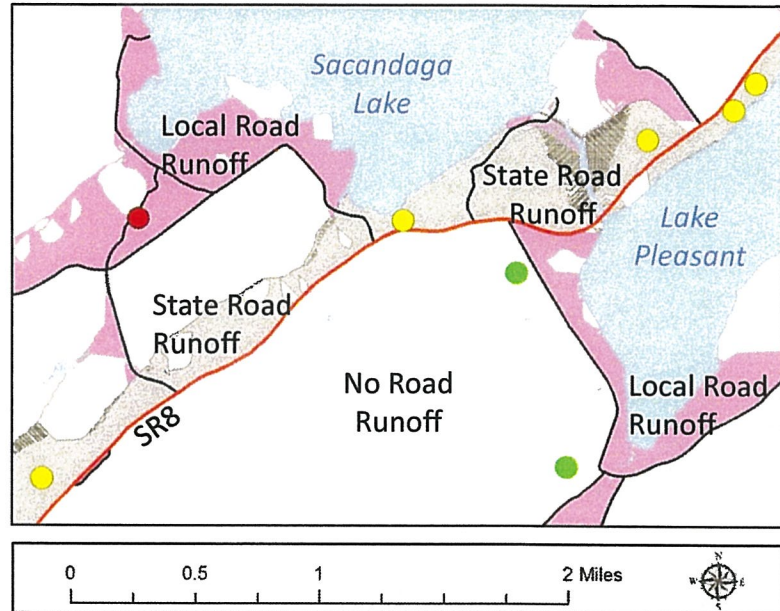




358 private wells (sampled 7/17 – 2/18)

- 132 no road runoff = None
- 112 local road runoff = Local
- 114 state road runoff = State



Sodium and Chloride by Runoff Class

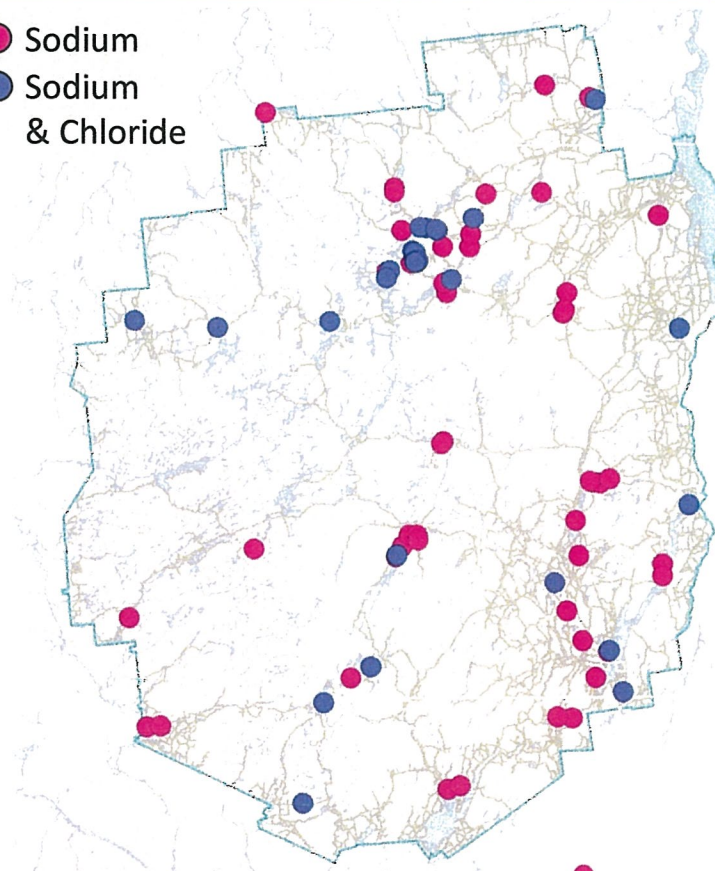
Analyte	Parameter	None	Local	State
Sodium	Median (ppm)	3	6	26
	Maximum (ppm)	17	403	748
	Above Guidance Value ¹ (%)	0	10 (11 wells)	55 (63 wells)
Chloride	Median (ppm)	<1	7	78
	Maximum (ppm)	57	204	1,327
	Above Guidance Value ² (%)	0	0	25 (28 wells)

¹Sodium = 20ppm; ²Chloride = 250ppm

"The contamination of our well with road salt has cost us thousands of dollars in ruined appliances and corroded pipes. We can't operate a dishwasher and have to replace faucets and other plumbing fixtures regularly because of corrosion caused by the salt. We've also had to replace most of our copper pipes and have been buying water to drink because of the adverse impact on our health. And now we worry about being unable to sell our house. We will hold the state fully responsible for these problems." Kirk Peterson, Lake Clear

Locations above Guidance Values

- Sodium
- Sodium & Chloride



Salinization of Adirondack Waters by Road Salt – Research Summary

Daniel L. Kelting, Ph.D., Executive Director, Paul Smith's College Adirondack Watershed Institute

Take Home Messages

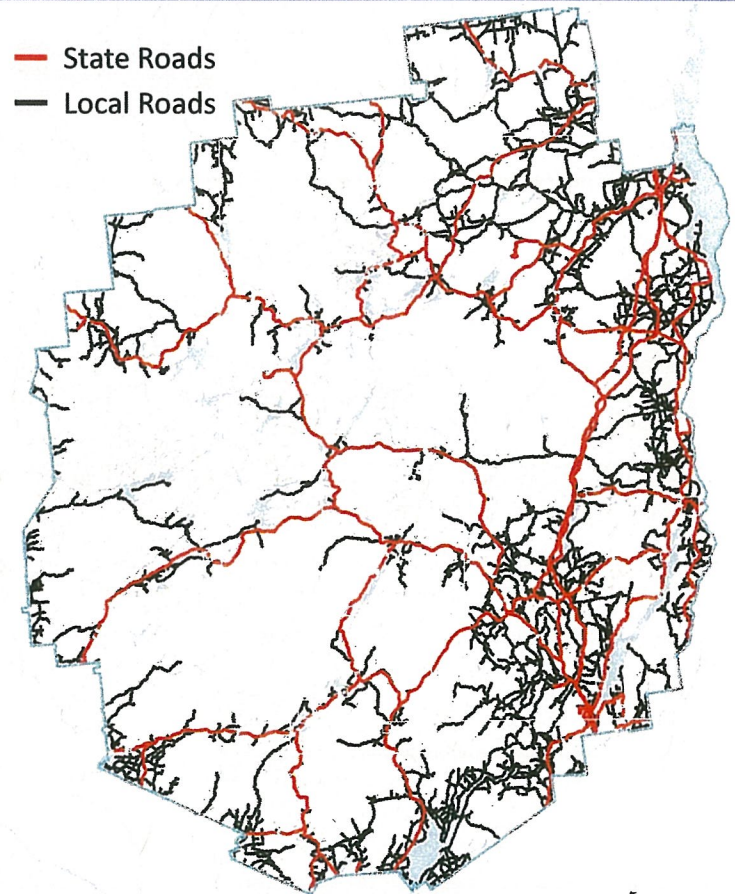
- We use ~~to~~ much salt
- This practice has resulted in:
 - Regional salinization of surface and groundwater
 - Impacts to ecosystems, human health, and property values
- We need to act

Paved Road Network & Road Salt Use

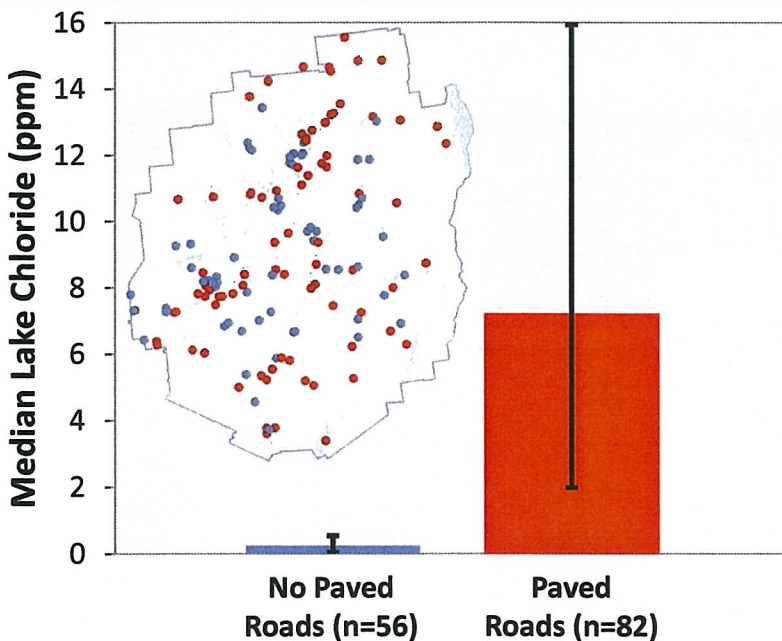
- 10,555 lane-miles of paved roads
 - 2,830 lane-miles (27%) of **state roads**
 - 7,725 lane-miles (73%) of **local roads**
- 192,700 tons of NaCl per year
 - 108,000 on **state roads** (38 tons per lane-mile)
 - 84,700 on **local roads** (11 tons per lane-mile)
- 6,937,200 tons of NaCl applied since 1980
- Runoff from paved road network enters¹
 - 6,000 miles of streams (55% of stream length)
 - 195,000 acres of lakes (75% of total; 820 lakes)
 - A likely substantial volume of groundwater

Potential Regional Salinization

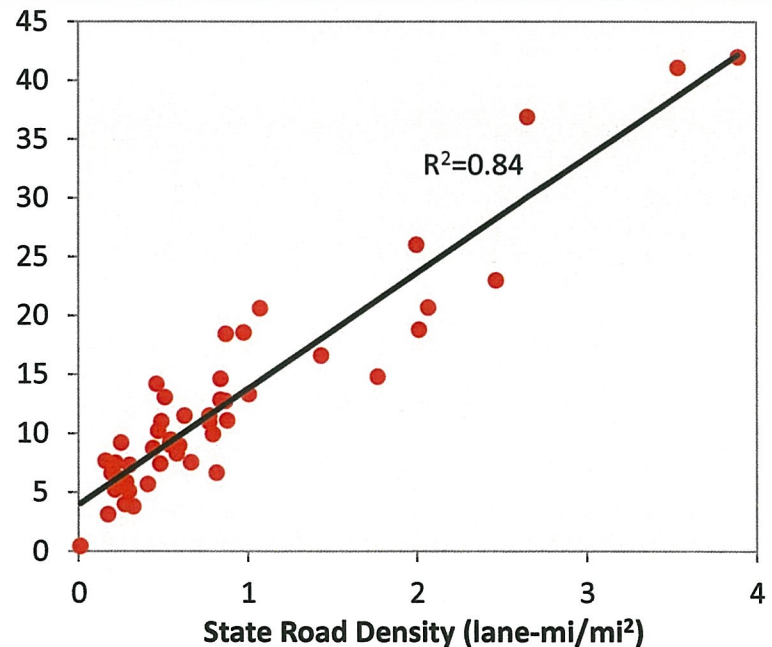
Adirondack Park Paved Road Network



Surface Water Research Summary²



- Chloride was less than 0.5ppm with no paved roads
- Chloride was 14 times higher with paved roads
- Road salting has resulted in regional lake salinization



- State road density explained 84% of the variation
- No relationship with local road density and chloride
- Regional lake salinization is from salting state roads