

The impact of road salt (NaCl) on soil salinity of Hatch Cove Preserve in Castine, ME

Ecological studies have demonstrated a correlation exists between road salt (NaCl) and increased soil salinity that contributes to adverse conditions in watersheds and aquatic environments. In this study, the objectives are to determine if road salt depositions on Route 166 increased soil salinity of Hatch Cove Preserve and if results agree with other studies that sodium chloride concentrations decrease with distance away from the road (downslope). Field and lab work was conducted from October 2010 through February 2011. Soil sampling and testing for potassium, sodium and chloride ions as well as electrical conductivity for total charge provided the data necessary to analyze soil salinity. Results indicated that soil salinity decreased over time and soil salinity decreased with distance away from the road. Although several contributing factors are addressed to explain the decrease over time, dense snow pack and rapid snow melt are thought to be the primary sources decreasing soil salinity levels. Likewise, gravity forces and soil characteristics are described as the reasons for soil salinity decreasing downslope away from the road.