

Results and Interpretation

As mentioned above, for seven of the water quality parameters measured by the chemical analyses, Bloody Pond, Little Long Pond and Long Pond exhibited one pattern of results, and Halfway Pond, Round Pond and Gallows Pond exhibited a different pattern of results. The seven parameters which differentiated Bloody Pond, Little Long Pond and Long Pond from the other three were Specific Conductance (indicating the presence of salts), Sodium, Chloride, Calcium, Magnesium, Hardness (indicating primarily the presence of calcium and magnesium) and Alkalinity (indicating the presence of calcium as calcium carbonate among other things). Salts, sodium, chloride, calcium and magnesium are all found in highway, road and driveway runoff, especially in snowbelt areas. In other words, the presence of these parameters suggests road runoff problems, but we need to determine through further investigation whether road runoff is, in fact, a significant contributing factor as we have hypothesized.

Some consistent differences among the ponds can be seen in the plots for these seven parameters. (see Boxplots of the results)

We also wanted to know whether the two groups of ponds observed in the results for these seven parameters constituted a syndrome of parameters which varied together. To do this, we performed a cluster analysis to see the extent to which the individual bottle sample results for each pond would fall into one or the other of two clusters. (see the discussion of Cluster Analyses)

All the ponds in the Six Ponds area are discussed in the interpretation link below. The ponds are ordered from those with the highest concentrations on these parameters to those with the lowest concentrations on these parameters. Then, for

each pond, we have briefly discussed some housing and terrain characteristics, the types of surrounding roads, and some drainage characteristics which may contribute to runoff problems. In other words, we have attempted to make sense of the bottle sample results into terms of things that can be observed. (see the discussion in Interpretation of Runoff Problems)

While we do not yet know the seriousness of the observed concentrations, it is clear to us that the ponds differ on the seven parameters we have discussed. Likewise, while we see differences among the ponds, we cannot be absolutely certain of the causes without further investigation.

We hope you agree that we have presented a strong case that highway, road and driveway runoff may be affecting some of our ponds.