

Database and Statistical Analyses

The chemical analyses performed by Envirotech were compiled into a database. These results were then submitted to statistical analyses.

Each pond in the Six Ponds Region tells a different water quality story. For some ponds the story of its water quality is fairly simple. For other ponds the story is quite complex. Nutrient pollution from lawns and aging septic systems, rainfall and temperature, the surrounding terrain, road runoff from cars and de-icing chemicals, the depth of the pond, the impact of agricultural activities, natural springs and the flow of the aquifer each play a part in the separate story for each pond.

Analysis of bottle sample data from 2002, 2003 and 2004 (one-way ANOVA) has revealed statistically significant differences among our six ponds on 17 of the 19 water quality parameters measured.

The total phosphorus parameter is a story by itself.

Sometimes two or three parameters followed the same pattern from one pond to another.

In the case considered here, several parameters exhibited the same pattern. A cluster analysis of the bottle samples confirmed a pattern which may indicate the impact of road runoff-- specific conductivity, sodium, chloride, calcium, magnesium, hardness and alkalinity.