

Interpretation of Runoff Problems

As indicated, the ponds in the Six Ponds area are discussed below, ordered from those with the highest concentrations on these parameters to those with the lowest concentrations on these parameters.

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 in terms of things that can be observed.

While the correlations described below between the chemical parameters and the physical characteristics of the ponds do not prove that road runoff is the problem, we think our observations suggest that road runoff is a significant contributing factor and indicate that our hypothesis deserves thorough investigation.

1. Bloody Pond bottle samples exhibited the highest concentrations of salts, salt components and possible highway runoff indicators. The pond was highest on Specific Conductance, Sodium, and Chloride, and second highest on Calcium, Magnesium and Hardness.

The pond has a moderate number of houses on its western side, and the slope to the pond is fairly steep



on the west, north and east. The northeastern end and eastern side of the pond is close to the southbound lanes of Route 3 (see [Catch Basins along Route 3](#)). Highway runoff flows from both directions to a relatively low area in Route 3 near the northern end of Bloody Pond. Drainage from the highway grates comes out of pipes on the steep slope down from the highway, is channeled down the slope to a small abandoned cranberry bog northeast of Bloody Pond, flows through the ditches of the bog toward Bloody Pond, and then flows through an abandoned bog flume into Bloody Pond. The Baird Center is on the northern end of the pond, and the roads in this area are paved and used on a year-round basis. On the northwestern side of the pond, there is Timberline Lane which is paved road running down a steep hill through a small subdivision. Runoff which comes down Timberline flows into drains which then pipe the runoff into a low wetland area on the west side of the road but not very far from the pond. Although Long Pond Road runs along the west side of the pond at the crest of the pond's watershed, this paved road is some distance from the pond.

These findings for Bloody Pond are especially concerning to us since the pond lies in a sizable spring-fed water protection area and a protection area for a possible wellhead lies just north of the pond. (see Zone II water protection areas)

2. Little Long Pond exhibited the next highest concentrations of salts, salt components and possible runoff indicators. It was highest on Calcium, Magnesium, Hardness and Alkalinity, and second highest on Specific Conductance, Chloride, and Sodium.

There are many houses on or near the pond, and its sides are very steep on the north and the east. Many of the driveways are paved. Several paved roads lie to the north and the east of the pond-- Independence Way and Unity Circle lie just to the north, Long Pond Road is parallel to the northeastern side, Oar and Line Road lies just to the east. It appears that some of the storm drains on these roads

may pipe or channel runoff into Little Long Pond. This possibility requires further investigation.

3. Long Pond ranked third in concentrations of possible runoff indicators. It had the third highest values on all seven of these parameters (Specific Conductance, Sodium, Chloride, Calcium, Magnesium, Hardness and Alkalinity).



There are only a moderate number of houses on the pond given its large size, and the sides are fairly steep. The roads and driveways on the

south and west sides of the pond are unpaved. At the northern end of Long Pond, a channel from Little Long Pond feeds nearly 3,000 gallons of water a minute into Long Pond, runoff from the paved parking lot for the State boat ramp on Long Pond flows into this channel, runoff which flows into storm drains in Plymouth Estates or flows down the road from Long Pond Road, Clark Road, Oar and Line Road and Thatcher Road (all paved roads) all ends up in this channel or runs down the State boat ramp into Long Pond.

4. Halfway Pond, Round Pond and Gallows Pond ranked fourth, fifth and sixth in this evidence of possible runoff problems. Although these ponds presented a somewhat mixed picture with respect to these seven parameters, all three of these ponds had lower values than any of the other three ponds on all but one of these parameters.

There are few houses on each of these ponds compared

with the other three ponds. Except for Round Pond, the slopes to the ponds are shallow. The roads and driveways in close proximity to all three of these ponds are unpaved. At Halfway Pond, a long section of unpaved road lies only a couple feet from the pond, and in many places there is no buffer to prevent direct runoff into the pond.