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Geology and Abiotic Factors: Their Effect on an Aquatic Insect Fauna on the Shawangunk Ridge

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GEOLOGY AND ABIOTIC FACTORS: THEIR EFFECT ON AN AQUATIC INSECT FAUNA ON THE SHAWANGUNK RIDGE

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The Shawangunk Ridge in the lower mid-Hudson Valley extends from the vicinity of Rosendale through New Jersey, Pennsylvania, Maryland and Virginia. Within the first thirty miles can be found five “sky lakes”: Mohonk, Minnewaska, Awosting, Mud Pond and Maratanza. Since these lakes occur on the top of the ridge they have no drainage basin. Here we report on the pH and other abiotic factors that impact the aquatic fauna of the Lily Pond (pH 6.58), a small, shallow body of water with a diverse faunal community on the grounds of Mohonk Mountain House. The pH of Mohonk Lake is 7 near the surface. Lake Minnewaska’s pH increased from 4 to 6 in the last twenty years. The pH of the other three sky lakes (pH=4) may be influenced by acid seeps, reactivation of faults permitting acidic water to migrate into the lakes, or a decrease in the buffering capacity of the underlying Martinsburg Formation. Thirteen taxa of aquatic insects inhabit the Lily Pond along with three invertebrate (Hirudinea, Isopoda, Arachnida) and six vertebrate taxa with a diversity index of 17.45. One of the most abundantly represented insect groups found in the Lily Pond, the Notonectidae, have been observed to prefer environments between a pH of 6 and 7.1, possibly precluding their presence from the more acidic sky lakes. A similar preference is supposed in other species.

Session No. 54--Booth# 4

[Environmental Geoscience \(Posters\)](#)

Monday, 24 March 2014: 1:30 PM-5:35 PM

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