

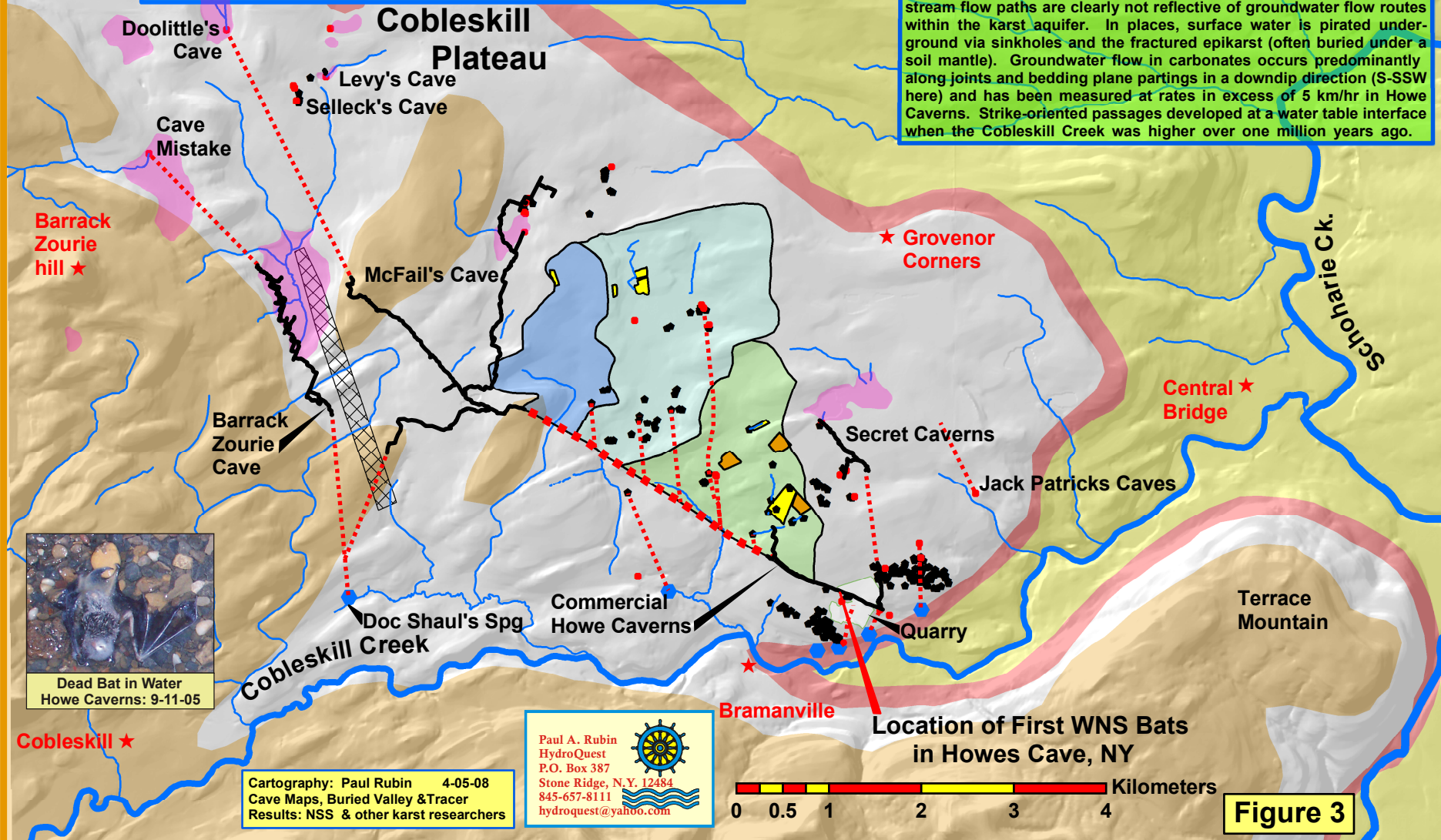
# White Nose Syndrome Source Assessment

WNS may stem from bat exposure to one or more contaminants. To date, the first bats documented with WNS were from Howe Caverns. An early mass mortality was noted on 9-11-05. WNS was documented on a live bat on 2-16-06. WHY HERE? What is different in the Howe Caverns-Cobleskill Plateau area? Could toxic contaminants in the environment be responsible? Land-use in Howe Caverns' sub-basins - cultivated: 56.6%; mixed forest: 16.7%; evergreen forest: 7.4%; deciduous forest: 6.1%; low intensity residential: 7.0%; transi- ★ tional: 1.7%; wetlands: 1.3%; live stock: 1.3%; fallow: 0.7%; **Carlisle** open water: 0.6%; commercial: 0.6%. Are unusual agricultural or other chemicals present?

## Hydrology of the Cobleskill Plateau

- Major Caves
- Caves
- Younger Formations
- Inferred Strike Conduit
- Springs
- Helderberg Group
- Large Closed Depressions
- ▨ Buried Pre-glacial Valley
- Cobleskill Limestone
- ~ Surface Streams
- ~ ~ Carlisle Center Sub-basin
- Older Non-Carbonate Fms
- ... Aquifer Tracer Tests
- ~ ~ McMillan's Sub-basin
- Freshly Tilled 4-24-06
- ★ Sinkholes
- ~ ~ Sagendorf Corners Sub-basin
- Freshly Manured 4-24-06

Note: Approx. boundaries of surface drainage basins and surface stream flow paths are clearly not reflective of groundwater flow routes within the karst aquifer. In places, surface water is pirated underground via sinkholes and the fractured epikarst (often buried under a soil mantle). Groundwater flow in carbonates occurs predominantly along joints and bedding plane partings in a downdip direction (S-SSW here) and has been measured at rates in excess of 5 km/hr in Howe Caverns. Strike-oriented passages developed at a water table interface when the Cobleskill Creek was higher over one million years ago.



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Cartography: Paul Rubin 4-05-08  
Cave Maps, Buried Valley & Tracer  
Results: NSS & other karst researchers

Location of First WNS Bats  
in Howes Cave, NY

Figure 3