Sondra Wolferman

Based on field surveys conducted by trained scientists for The Nature Conservancy and the Pennsylvania Department of Conservation and Natural Resources, portions of the Delaware River Basin in Carbon, Monroe, and Luzerne Counties are home to the highest concentration of rare, threatened, and endangered species in Pennsylvania. (Nature Conservancy).
The extraordinary biological diversity of this region, at a time when our planet is losing species in numbers never before seen in recorded history, is at least partially due to the strong protections that have been in place over the past half century prohibiting degradation of groundwater and providing special protection to the non-tidal segment of the Delaware River to "preserve its exceptionally high water quality and water supply values".

According to the EPA Report cited on page 6 of the Commission's Proposed Amendments to the Administrative Manual and Special Regulations Regarding Natural Gas Development Activities: "Withdrawals from surface and ground water in the amounts required for HVHF may adversely affect aquatic ecosystems and river channels and riparian resources downstream, including wetlands, and may diminish the quantity of water stored in an aquifer or a stream's capacity to assimilate pollutants."

One of the iconic species of the Delaware Watershed that could be adversely affected by the proposed amendments is the Federally Endangered Bog Turtle, whose numbers have plummeted to critical levels over the last half century. It was mainly the effort to save some of last remaining bog turtle habitat in eastern Pennsylvania that the 2,000-acre Cherry Valley National Wildlife Refuge was established by the U.S. Fish and Wildlife Service in the Delaware River Basin (Monroe County) in 2010. (U.S. Fish and Wildlife Service).
The bog turtle is acutely sensitive to relatively small habitat alterations, According to one study: "Bog Turtle hibernacula may be particularly susceptible to hydrologic alterations such as changes in the quality, level, and timing of water flow that may alter both the substrate and structural vegetative characteristics of these critical microhabitats. Bog Turtle hibernacula are generally located in groundwater seeps and range from shallow hollows to intricate subsurface tunnel systems. These spring-fed seeps provide groundwater that is well oxygenated and at a relatively constant temperature, which likely increases probability of surviving winters in the northern portion of the species' range." (Journal of Herpetology, 48(4). 2014. Effects of habitat Alterations on Bog Turtles (Glyptemys muhlenbergii): A Comparison of Two Populations)

The bog turtle is just one example of thousands of rare, threatened, and endangered plants, animals, and aquatic organisms that depend on the quality and quantity of the Basin's water resources for survival. Given the extraordinary ecological diversity known to exist within the Special Protection Waters in the upper portion of the Basin in Pennsylvania, it is imperative that any further discussion of these proposals be accompanied by a complete and through Biological Assessment as to how bog turtles and the thousands of other species of concern in northeast Pennsylvania will be affected, both individually and collectively, by the proposals to allow water withdrawals and disposal of fracking wastewater into the waters of the Delaware River Basin.