

WATERSHED DESCRIPTIONS

Drury Run is an 18-square-mile watershed that enters the West Branch Susquehanna River just west of Renovo, Pennsylvania. More than 90 percent of the watershed is forested and a large portion is within the boundaries of Sproul State Forest. Drury Run originates in the Tamarack Swamp, a 9,400-acre unique natural bog dominated by boreal conifers such as balsam fir, black spruce, and tamarack. It is a perennial home to rare and endangered plant and insect species, and has been designated as an Important Area for many bird species by Audubon Pennsylvania (Western PA Conservancy, www.paconserv.org/84/tamarack-swamp). The outflow of the Tamarack Swamp is the origin of Drury Run, and the first mile of stream exhibits the typical brown staining of natural tannins common to most bog outflows.

Drury Run, from its source to the first main tributary of Sandy Run, is designated as an Exceptional Value stream and is listed as attaining for aquatic life. The small stream segment from Sandy Run to Woodley Draft is designated as High Quality Cold Water Fishery and is attaining for aquatic life. Drury Run, from Woodley Draft to the mouth, is designated as a Cold Water Fishery but is listed as impaired for aquatic life by AMD sources (Figure 2). Nineteen sites were sampled quarterly in Drury Run Watershed. Appendix A lists more information about these sampling locations.

The AMD impairment in Drury Run is primarily located on the tributaries entering the stream in the lower 3.5 miles. Sandy Run is the most upstream named tributary, and in its headwaters, there is an AMD discharge point (Discharge No. 5) from an old deep mining operation. The entire Sandy Run subwatershed is listed as impaired by AMD. The next two tributaries downstream, Woodley Draft and Whiskey Run, are much smaller but have even worse water quality conditions. Woodley Draft, coming in from the east, is listed as impaired for aquatic life by AMD. Whiskey Run, coming in from the west, is not shown on some stream maps, but it is a perennial stream and its waters are very much impacted by AMD. However, the most impaired tributary in the Drury Run Watershed is Stony Run, which includes four smaller feeder streams that all

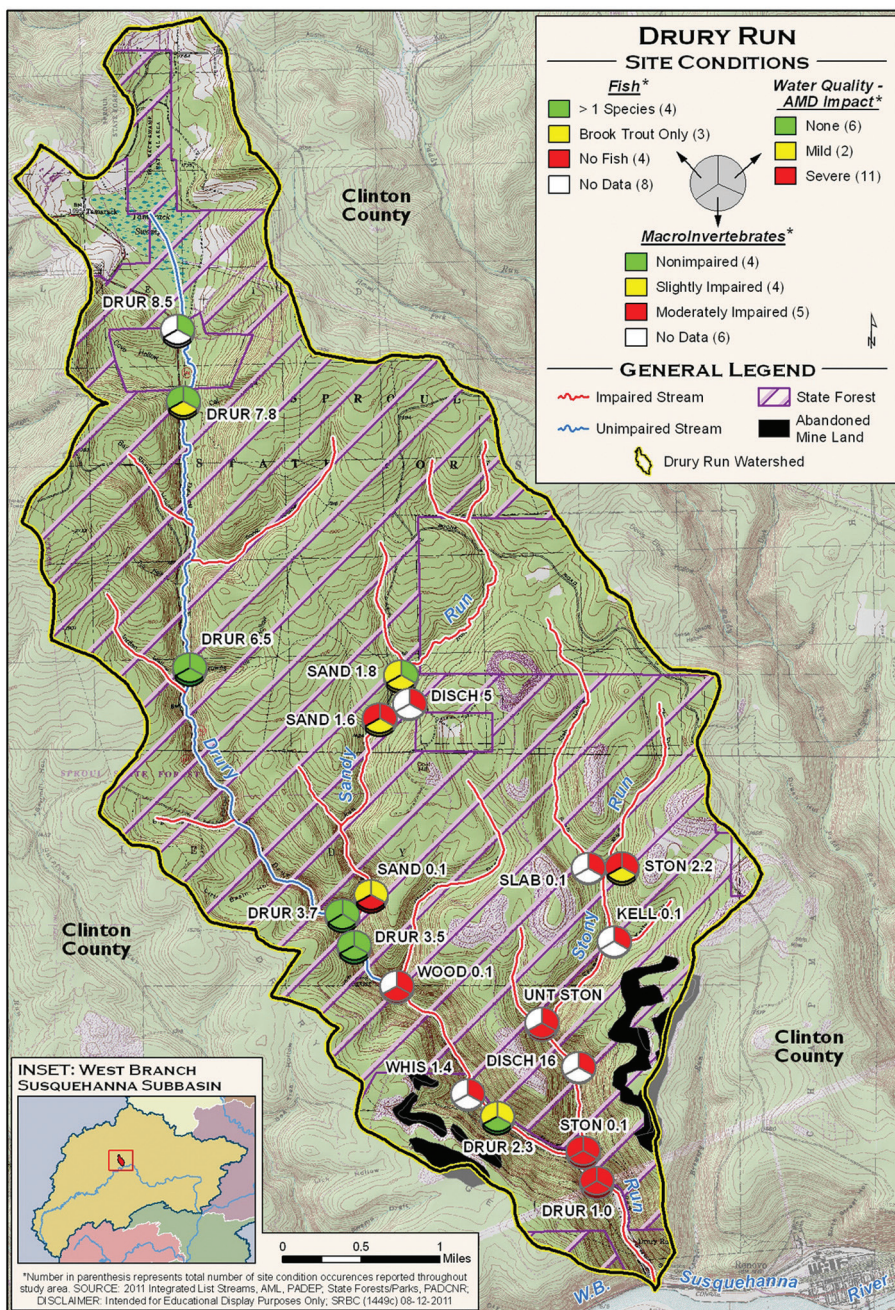


Figure 2. Map of Drury Run Watershed Showing AMD Lands, State Forest Boundaries, and Site Conditions at Sampling Locations



Sandy Run, an upstream tributary of Drury Run, is impaired by AMD, such as this discharge point (Discharge No. 5) in its headwaters.

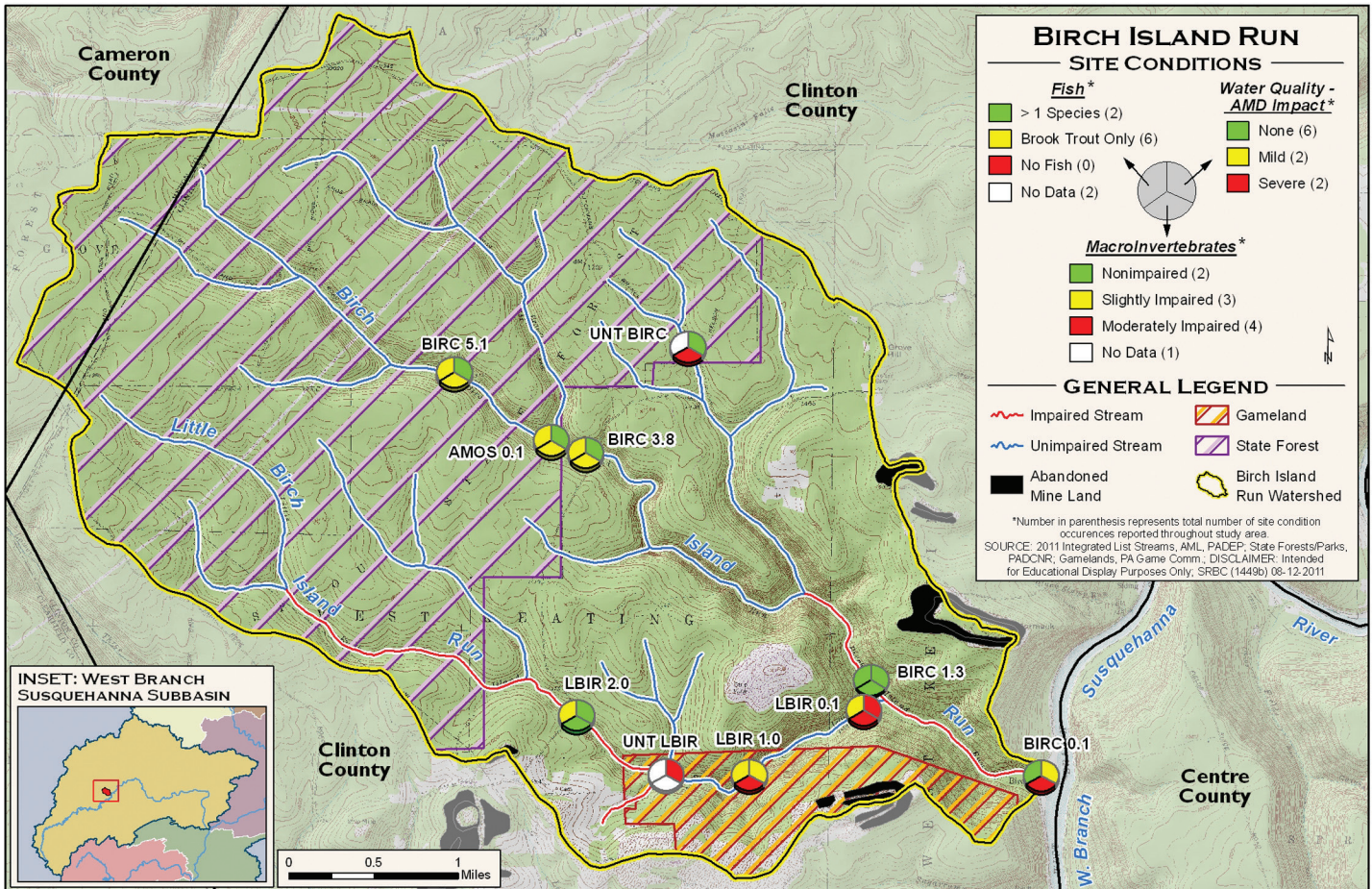


Figure 3. Map of Birch Island Run Watershed Showing AMD Lands, State Forest Boundaries, and Site Conditions at Sampling Locations

bear major impacts from past mining operations. Stony Run and its tributaries are all listed as impaired by AMD for aquatic life. As a result, from the point where Stony Run joins Drury Run, the biological and water quality conditions of Drury Run itself are markedly more degraded. The AMD impairment in Drury Run is most prominent during times of lower flow, as the most severely polluted water is groundwater, which becomes diluted with surface water during high flows.

Birch Island Run is similar in size, at 17 square miles, and similar in land use, at 95 percent forested, to Drury Run. About half of the watershed is within Sprout State Forest, and it empties directly into the West Branch Susquehanna about 20 miles upstream of Drury Run in West Keating Township. The whole watershed is designated as High Quality Cold Water Fishery. Amos Branch, a tributary to Birch Island Run, is listed as a Class A brook trout fishery. The lower two miles of Birch Island Run and the lower 1.5 miles of Little Birch Island Run are listed as impaired for aquatic life because of AMD. According to the data collected in this study, only the last mile of Birch Island Run is impaired by AMD but two miles are currently listed. Ten sites were sampled quarterly in Birch Island Run Watershed (Figure 3). Appendix A contains more information about these sampling locations.

“The lower two miles of Birch Island Run and the lower 1.5 miles of Little Birch Island Run are listed as impaired for aquatic life because of AMD.”

There are two areas of AMD pollution impacting the Birch Island Run Watershed. Both of these sources are located along Little Birch Island Run and impair the final 1.5 miles of Little Birch Island and the last 1.2 miles of Birch Island before it empties into the West Branch Susquehanna River. The first source is an unnamed tributary that enters Little Birch Island from the east that is influenced by numerous seeps throughout its length from old surface mine operations that were poorly reclaimed. This tributary is net acidic and has manganese and aluminum concentrations that exceed water quality standards. A larger source of AMD enters Little Birch Island Run via the Little Bougher Run abandoned mine land (AML) site downstream of the unnamed tributary. One unnamed tributary is perennial as are other numerous small seeps, while others only flow after rain events or during periods of snow melt. The water quality in Little Birch Island Run and Birch Island Run downstream of its confluence is better in times of low flow and noticeably worse in higher flows when these AMD outflows are contributing water.