

## **316(b) COMPLIANCE IMPINGEMENT MORTALITY STUDY PPL Brunner Island LLC Brunner Island Station**

Kleinschmidt Associates was contracted by Pennsylvania Power and Light to design and implement an Impingement Mortality Study at their Brunner Island Station on the Susquehanna River, PA. The study was implemented to develop a scientifically valid estimate of baseline impingement mortality at the station as required by the EPA.

The scope of work prepared by Kleinschmidt was approved by the Pennsylvania Department of Environmental Protection (PA DEP) and the sampling program commenced in April 2005.



The sampling schedule was designed to be more intensive during periods of expected maximum abundance. Specifically, the scope required weekly impingement collections from April through November 2005 and bi-weekly collections from December 2005 to March 2006. Sampling was conducted in accordance with a Standard Operating Procedure (SOP) to ensure consistency among sample collection and processing. Typically, samples were collected every 6 hours over the course of a 24-hour sampling event to assess potential diel patterns in impingement identified to the species level, enumerated, weighed, measured and categorized according to physical condition. At the conclusion of the field studies, impingement estimates were derived by first normalizing the raw counts to the stations actual flow during the sample period. The resulting densities for each species were multiplied by the total volume of water used by the station between sampling events. The estimates derived for each sampling interval were summed to determine annual impingement. In addition to the annual estimate, Kleinschmidt used the length and weight data to characterize the age structure of recreationally important species. A detailed final report was prepared and submitted to PA DEP on behalf of PPL.

**Kleinschmidt**

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