
revegetation notes

**By Robert Kleinmann, William Fink
and Sam Kunkle**

Field experiments are underway at the Friendship Hill National Historic Site in southwestern Pennsylvania to test the effectiveness of an artificial wetland in reducing water pollution. Acid mine drainage has drastically degraded water quality in a small stream flowing through the historic site. No fish or aquatic insects exist in the highly acidic stream, and riparian vegetation has been killed where stream overflow has occurred. Because some wetland systems have been found to mitigate acid pollution, an experiment was designed whereby an artificial wetland would be constructed and the affected stream water diverted through it in controlled quantities and at controlled flow rates.

Toward this end, plot studies were conducted during 1985-86 on a variety of plant species to determine which ones could 1) survive at pH 2.6, the average pH of the stream, and 2) reduce acidity and concentrations of sulfate and metals. Successful plants included peat moss (*Sphagnum recurvum*), cattail (*Typha latifolia*), and hardstem bullrush (*Scirpus acutus*). Field-testing of the wetland plants began in the fall of 1986 with completion of a prototype artificial wetland of approximately 0.15 hectare. Testing will continue throughout 1987. Water quality monitoring conducted above, within, and below the wetland will evaluate pH, acidity, conductivity, calcium, sulfates, and metals. If the wetland vegetation is successful in improving water quality in the stream, a larger, full-scale wetland of approximately 2 hectares will be established.

* * *

Kleinman is with the Bureau of Mines, Pittsburgh Research Center, P.O. Box 18070, Pittsburgh, PA 15236, (412) 675-6555; Fink is at Friendship Hill Nat'l Historic Site, RD #1, Box 149A, Point Marion, PA 15474, (412) 329-5512; Kunkle is with the NPS Water Resources Div., Fort Collins, CO 80521, (303) 491-7857.