

The Mussel Mitigation Trust: A Different Type of Mussel Mitigation

John H. Marshall, Wayne L. Davis, and Bernard L. Huff

Ohio Division of Wildlife, Columbus

Kentucky Department of Fish and Wildlife Resources, Frankfort

The Cincinnati Gas & Electric Company, Cincinnati, Ohio

Abstract. The Mussel Mitigation Trust is a charitable organization established in 1987 as a result of issuance of a U.S. Army Corps of Engineers Section 404 permit. This permit, issued to owners of the William H. Zimmer Generating Station, allowed for the dredging of a mussel bed at Ohio River mile 440.0 for the construction of a barge facility. Negotiations—involving the owners of the plant (The Cincinnati Gas & Electric Company, Columbus Southern Power Company, and The Dayton Power and Light Company), the U.S. Fish and Wildlife Service, the State of Ohio, and the Commonwealth of Kentucky—regarding the loss of freshwater mussels and mussel habitat ended with agreement to relocate some of the mussels to an upstream mussel bed and to create the Mussel Mitigation Trust. The owners of the power plant supplied the original funding (\$400,000), and a three-member board was established to manage the fund. The Mussel Mitigation Trust funds studies to monitor the relocated mussel bed and to determine impacts from increased river traffic over the remaining bed; it also funds other scientific studies on freshwater mussels of the Ohio River basin. To date, the Mussel Mitigation Trust has funded four projects totaling \$269,879.

Introduction

Construction of the William H. Zimmer Generating Station as a nuclear power facility began in 1970 but ended in 1982 as a consequence of licensing issues. In 1984, the owners of the station, The Cincinnati Gas & Electric Company, The Dayton Power and Light Company, and Columbus Southern Power Company, proposed converting the plant to a coal-fired facility. Conversion of the plant began in 1987 and continued until 1991 when the plant came on line. Impacts to two known mussel beds that would be disturbed during conversion needed to be mitigated to comply with federal environmental regulations.

Discussion

The delivery of coal to this plant required an on-site barge unloading facility along the Ohio River. Because this section of the river was shallow, dredging was required to accommodate barge traffic. Environmental investigations for the preparation of the Environmental Impact Statement (EIS) discovered two mussel beds adjacent to the plant. The proposed dredging would eliminate one complete bed and 15% of the other. Barge traffic would also negatively affect the remaining area of the second bed.

Mitigation of impacts to these mussel beds was one of the last issues resolved in the preparation of the EIS. Negotiations with various state and federal agencies began in October 1986 with the advertisement of the Section 404 & 10 public notice by the Louisville District of the U.S. Army Corps of Engineers. These negotiations involved the Kentucky Department of Fish and Wildlife Resources, Kentucky Natural Resources and Environmental Protection Cabinet, Kentucky State Nature Preserves Commission, Ohio Division of Wildlife, Ohio Environmental Protection Agency, Ohio Department of Natural Resources, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and U.S. Army Corps of Engineers. Avoidance of the mussel beds was considered but could not be accomplished. The owners of the Zimmer plant agreed to minimize the size of the facility.

One of the key questions that had to be answered during the negotiations was, What can be done to mitigate for the loss of mussels and mussel habitat? Mitigation of mussel bed loss is poorly documented in the literature for obvious reasons. Life history requirements—that is, water quality and quantity, water depth, substrate type, and glochidial host specificity—are usually stringent and many times unknown for many mussel species. Transplantation

was considered but had been only partially successful in some early attempts by the Tennessee Valley Authority (Steve Ahlstedt, personal communication).

Finally, consensus on mitigation was achieved following a proposal by the owners of the plant. They proposed to fund the relocation of 5,000 mussels to an existing mussel bed on the Ohio River and to provide the seed money for a mussel trust fund. The objectives of the fund were to (1) monitor mussels that were relocated, (2) conduct research on navigation impacts on remaining mussels, and (3) conduct other scientific research applicable to unionid mollusks of the Ohio River Basin. These stipulations were incorporated in the final EIS and Section 404 and Section 10 Army Corps of Engineer permits.

The Mussel Mitigation Trust was officially established on 11 May 1987. The owners of the Zimmer Generating Station deposited \$400,000 into an interest-bearing checking account, and the first meeting of the Mussel Mitigation Trust was held on 1 June 1987.

The trust is intended to last 33 years (the stated life of the Zimmer Generating Station) or until funds are depleted or merged with another similar trust fund. The board of trustees is to consist of one person from the owners group, one from the State of Ohio (Ohio Division of Wildlife), and one from the Commonwealth of Kentucky (Kentucky Department of Fish and Wildlife Resources). The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service were legally unable to participate but could serve as advisers to the trust. Originally, a representative from American Electric Power Service Corporation (AEPSC) represented the owners because AEPSC was project manager for the conversion of the plant to a coal-fired facility. As soon as the plant became operational, a representative of Cincinnati Gas & Electric represented the owners. Each trustee may appoint an alternate trustee to conduct business in his or her absence.

The Mussel Mitigation Trust Board of Trustees meets every second Wednesday of each calendar quarter, and trustees cannot receive any compensation from the trust for performance of their duties. All meetings of the trust are open to the public, but special meetings can be called without notice to the public. Trustees are empowered to invest the trust fund in checking accounts or in securities or other investments "as a reasonably prudent person would invest," which precludes any speculative investments. The trustees are also empowered to enter into contracts, make payments for taxes, and conduct other business as necessary. An independent audit of the Mussel Mitigation Trust is conducted every year by a public accountant for the Board of Trustees.

The first meeting was 1 June 1987, and officers

were elected to serve for one year. The first major business was to adopt a document entitled "General Terms and Conditions for Consulting Services." This document outlines the responsibilities of consultants from reporting requirements to safety and bonding requirements necessary in the State of Ohio. These conditions can be modified only after negotiation with the Board of Trustees and after consultation with legal counsel. This document provides a "safety net" for the trustees by insuring that consultants are responsible for their actions and actions of their employees.

To date, the Board of Trustees has awarded contracts to several consultants to perform mandated research or research derived from proposals. The Mussel Relocation Survival Study began in 1987 and was completed in 1991. That work was conducted by Environmental Science and Engineering (1988–1990) and Ecological Specialists, Inc. (1991). The U.S. Army Corps of Engineers Waterways Experiment Station was contracted in 1990 to begin the study on navigation impacts on the remaining mussels; to date, the literature review and baseline condition phases of the project have been completed.

Other research or activities that have been funded include work on cryopreservation of mussel genetic material, surveying of mussel beds on the Ohio River, funding the publication of a mussel field identification guide, and sponsorship of a mussel symposium. Virginia Technological Institute and State University was awarded a grant from the trust in 1991 to study the potential for cryopreservation of mussel genetic material. This research could result in the "banking" of genetic material of endangered/threatened species with potential of later fertilizing and growing such species from frozen eggs and sperm or cloning specimens from frozen genetic material. A cooperative project with the Louisville District of the of the U.S. Army Corps of Engineers and the Illinois Department of Conservation was funded to resurvey the mussel beds in the lower Ohio River. The Illinois Natural History Survey was awarded a grant to include color photographs in a new field guide to mussels of the Midwest. The only other grant has been to the Upper Mississippi River Conservation Committee to provide "upfront" money for the symposium titled "The Conservation and Management of Freshwater Mussels."

Although most of the duties of the Board of Trustees relate to providing grants for scientific mussel research, the other duties can be equally time consuming. These duties include arranging for an audit of the trust, having a public notice placed in the newspapers announcing the meetings of the trust, filing income tax forms, and disseminating copies of proposals that have been submitted to the

trust. Additional time is devoted to travel to the meetings, review of proposals, telephone conference calls, discussions with other professionals regarding proposals or reports, and other miscellaneous duties that all take time from the normal work activities of the professional. Luckily for the two resource agencies on the Board of Trustees, the owners of the Zimmer Generating Station and their consultant have absorbed these administrative duties of the trust. The owners and their consultant have provided legal and financial help that has proved extremely beneficial to the trustees, especially when it came time to award contracts. Most people, especially biologists, do not understand how complex the awarding of contracts can be, especially from the legal standpoint.

Conclusion

The original problem of mitigating the mussel loss at the William H. Zimmer Generating Station remains, and the establishment of this trust does not supplant mitigation. The Mussel Mitigation Trust provides a funding mechanism to expand our knowledge of mussels in the Ohio River Basin. In fact, the establishment of a trust in lieu of mitigation should carefully be considered since the commitment of staff time can be excessive. Also, the legal and accounting processes could not be performed by the existing Board of Trustees without the staff assistance of the owners and their consultant. The establishment of a trust could be explored as a last resort and not used as a mechanism to “buy” a permit.

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