# HOW TO BUILD A COALITION FOR AMD AMELIORATION IN A WATERSHED. A CASE HISTORY: MILL CREEK OF JEFFERSON AND CLARION COUNTIES, PA[1]

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Abstract: Since 1990, the Mill Creek Coalition has been actively involved in the recovery of Mill Creek from the effects of AMD. This paper/presentation describes how a coalition of conservation groups, governmental agencies and private interests was formed to coordinate efforts to address the problems of AMD on a 60 square mile watershed in Western PA. Also described is how the Mill Creek Coalition obtained funding and other assistance to build a number of wetland treatment systems that are today improving the water quality of Mill Creek. Characteristics that have made this coalition successful are described and suggestions on how to build a successful coalition are shared.

## Introduction

Clarion and Jefferson Counties are located in an area of western Pennsylvania where surface mining has been occurring for decades. Surface mines have been superimposed on earlier surface mines and drift mines, and regulations and enforcement efforts have changed drastically over the years. Nearly all the smaller watersheds have been adversely affected in this area, with most lacking fish or having only limited diversity and numbers of organisms.

Because of the long history of surface mining, the effects of acid mine drainage (AMD) are of concern to most members of the community, including environmental groups, environmental consulting firms, the biology faculty of the local university (Clarion University of Pennsylvania), Pennsylvania (PA) Game Commission and PA Fish and Boat Commission, U. S. Soil Conservation Service (SCS) and Conservation District personnel and the elected officials in the region.

After some informal contacts with a number of key persons within the above groups, there was ready consensus to address AMD from a watershed approach. Individuals felt that this was feasible because of the development of new AMD treatment technology. The development of this technology, which has low cost and low maintenance requirements combined with long-term effectiveness, made it possible for a group such as the Mill Creek Coalition with its limited resources to attempt an effort of this scale. The specific technology selected by the Coalition involved anoxic limestone drains coupled with successive aerobic and anaerobic wetlands (Hedin 1989, McIntire et al. 1990). Several papers in this proceedings outline the specifics of the Howe Bridge Site treatment system (Hedin and Watzlaf 1994, Kepler and McCleary 1994) constructed on the Mill Creek watershed in the fall of 1991.

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During the time of informal dialogue, one watershed within the area received attention early in the process. This was the Mill Creek Watershed, which drains a portion of both Clarion and Jefferson Counties. There were a number of factors which caused the group to focus on the Mill Creek Watershed :

Mill Creek, with its main stem approximately 15 miles long and its entire watershed encompassing about 60 square miles, had its upper reaches only mildly affected by AMD. Some parts of the main stem and some tributaries had naturally reproducing brook trout populations. In addition, the PA Fish and Boat Commission stocked one section of Mill Creek. The last one-third of the main stem was lifeless owing to the accumulated effects of AMD, primarily from Little Mill Creek, a major tributary. The general consensus was that the watershed had the potential to be improved, and that if nothing was done, Mill Creek would deteriorate further due to a number of untreated discharges which were not on coal company permit areas or that were from mines closed before the current laws were enacted,

Mill Creek had received earlier attention from the U. S. Army Corps of Engineers and the PA Department of Environmental Resources, so the numbers, locations and seriousness of AMD along the watershed were well documented.

The watershed was equally located in both Jefferson and Clarion Counties. This was considered a plus because of the presence and expertise of two Soil Conservation Service (SCS) employees, Conservation Districts, and Resource Conservation and Development (RC&D) organizations (specifically Pennsoil and Headwaters Resource Conservation and Development Councils). Several of the environmental organizations (Trout Unlimited, an Audubon Society chapter and the county affiliates of the PA Federation of Sportsmen) received their membership from the area. Politically, a two-county effort had the potential to be more effective in identifying and acquiring financial support.

The lower half of the main stem of Mill Creek, which has the greatest potential for a recreational cold-water fishery, was located within the public domain as PA Game Commission Gamelands 74, thus ensuring public accessibility.

The watershed would not likely be impacted by future strip-mining activities because much of the area had already been mined and the remaining coal is of low quality. Additionally, the overburden in the area is of such a quality that there would be a high probability of additional AMD problems from any new mining activity. PA DER is currently reluctant to approve mining permits in areas such as this.

Mill Creek is easily within a 5-15 minute drive time for the main population bases of both Clarion and Jefferson Counties, Clarion and Brookville, respectively.

## Nature of the Problems in the Mill Creek Watershed

We were able to identify the major AMD seeps on Mill Creek and Little Mill Creek by using Army Corps of Engineers and PA Department of Environmental Resources (PA DER) studies and by actually walking much of the watershed. We identified 18 different discharges. They varied some in chemical characteristics and flows, but they generally had flows of 10-50 gallons per minute and 50-250 parts per million (ppm) of iron, 250-500 ppm acidity, 0-7 ppm of aluminum, 1-15 ppm of manganese and 1000-1600 ppm of sulfates. The discharges are distributed along about ten miles of the watershed. Most of them are discharges from surface mines, but several are associated with abandoned gas wells.

## Mill Creek Coalition

### Organizational Meeting

After the informal contacts in late 1989 and early 1990, a day-long conference was planned for the fall of 1990. The conference was organized by Peter Dalby of Clarion University and the Clarion County affiliate of the Pennsylvania Federation of Sportsmen's Clubs, and Terry Morrow of Clarion University and the Iron Furnace Chapter of Trout Unlimited. The purpose of the conference was to bring groups together for a meeting to discuss the feasibility of improving the water quality of the Mill Creek Watershed, and forming a coalition to pursue these efforts. The following groups and agencies were invited to speak, focusing on their knowledge, expertise and the contributions they might be able to make toward the recovery of Mill Creek: PA DER Bureau of Surface Mining (direct knowledge of past strip-mining activity on the watershed, of existing treatment systems and of potential for future mining activities), PA DER Bureau of Oil and Gas (several gas wells were discharging untreated water into the watershed), PA DER Bureau of Forestry (expertise with Youth Conservation Corps program, a source for potential labor), PA Game Commission, PA Fish and Boat Commission, a local SCS representative, Damariscotta Environmental Consultants (a local environmental consulting firm specializing in AMD treatment), the PA National Guard, and the U. S. Army Reserves (sources of labor and heavy equipment), and the Army Corps of Engineers (authors of one of the studies on Mill Creek and the agency with responsibility for some waterways programs). After reviewing the presentations and a general question and answer period, the consensus was that Mill Creek was a reasonable challenge and that a formal coalition should be formed.

### Formation of the Mill Creek Coalition

The Mill Creek Coalition formed shortly after the conference and includes the following groups and agencies: The Alliance for Wetlands and Wildlife, Damariscotta Environmental Consultants, Clarion County Conservation District, Jefferson County Conservation District, Clarion County Federation of Sportsmen, Jefferson County Federation of Sportsmen, Iron Furnace Chapter of Trout Unlimited, Magic Forest of West-Central Pennsylvania, League of Women Voters of Clarion County, Seneca Rocks Audubon Society and the U. S. Soil Conservation Service. The Coalition eventually developed a constitution and bylaws and became incorporated as a Pennsylvania nonprofit corporation. Because monies could be directed through one of several Coalition member organizations which already had 501(c)(3) status, this tax exempt status was not pursued. Meetings are held monthly and minutes are taken. State agency people are specifically invited to attend particular meetings when their input is important for the business of the Coalition.

### Funding and Support

Funding, generally of relatively small amounts, has come from most of the Coalition members. Some outside organizations in the community have contributed up to several hundred dollars. The Coalition has approached the banking community and solicited funds. Through the Community Reinvestment Act, banks are required to contribute to the local community, and several donations ranging from $100 to $2500 were received.

Grants from Clarion University and the Clarion University Foundation awarded to faculty members involved with the Coalition have provided some support for the hiring of two or three students at any given time. For qualified students, the Pennsylvania Higher Education Assistance Agency (PHEAA) has paid 40 percent of the students' hourly wages. With students working 30 to 40 hours per week in the summer and 10 hours per week during the academic year, this expense is substantial. The students collect water samples and run water chemistry tests monthly, with some

stream and AMD sites being monitored every two weeks, along with the Coalition's treatment systems. Other than the aforementioned duties, the students do some survey work and assist Coalition members with general site preparation before and after heavy construction activities. While the local DER Office of Surface Mining has offered to assist in the sampling (and has done so on occasion), direct control of the students allows the Coalition to monitor with more flexibility and intensity than through DER. Since several Clarion University Biology faculty members are associated with some of the environmental organizations in the Coalition, they supervise the work of the students and the department provides space and equipment for water testing and other uses. Since the inception of field work in 1991, about $15,000 in student wages have been paid.

Larger amounts of money have come from other sources. The Iron Furnace Chapter of Trout Unlimited has donated about $9,000 of chapter funds to the project. Additionally, the chapter has submitted grant proposals to state and national levels of Trout Unlimited and has been awarded about $23,000 for work on Mill Creek. A regional trust approved a grant of $20,000 to support student help and wetland system construction. Four times in the past two years, the local PA DER Office of Surface Mining, along with cooperative coal companies, had fine money totaling about $14,000 given for the purchase of materials through a "reclamation in lieu of civil penalty" program.

Numerous people have given generously of their time, as is typical of many grass roots efforts. Damariscotta Environmental Consultants has donated all its time and some materials to the Coalition. Damariscotta Environmental Consultants' advice on the construction and designs of treatment sites is critical to the success of recovery efforts on Mill Creek. The SCS personnel are important in survey work, soils evaluation, sedimentation and erosion plans and obtaining conservation easements from property owners. The Conservation District offices have handled some of the paperwork and materials purchasing. The PA Game Commission allowed a major AMD discharge to be treated on Gameland 74 and assisted in site preparation.

Of primary importance was an agreement by the PA National Guard during the Coalition's first year to provide nearly all the personnel and heavy equipment necessary to construct one treatment system in 1991. Nearly $25,000 worth of materials were used at this site. The National Guard provided about $50,000 worth of service on the project. At another site in 1992, the National Guard completed two other systems, donating about $10,000 in services. In anticipation of additional, albeit reduced participation by the National Guard in the future, and also perhaps by the Army Reserves, the Coalition has helped arrange the purchase of a tract of land with six AMD sites on it. Since this property is now in the hands of the local RC&D Council, it is open to the public and eligible for work by the Guard or Reserves. Military units are not allowed to work on private property. Both groups receive numerous requests for help, so the Coalition hopes to have them working on Mill Creek occasionally, as time and their other responsibilities allow.

During the past three years, three treatment systems have been constructed on Mill Creek. However, there are another 15 discharges to address. While the Coalition was able to maximize its effectiveness due to the participation of the Guard and others at no or little cost, larger state and federal grants were prepared, thus freeing the Coalition from its dependence on the Guard and others who have given freely of their time. The DER Bureau of Oil and Gas successfully applied for $158,000 under the EPA's 319 program to fund the plugging of at least three flowing abandoned gas wells on the water-shed. This work will occur in 1994. Through the RC&D program and the local SCS, a grant for EPA's 319 program was submitted and approved for $165,000 to address three AMD sites on Little Mill Creek in 1994-95. Also, through the RC&D and the local SCS, a proposal has been submitted to the federal level of SCS to receive funding through its Public Law 566 program, which is designed to treat water quality problems on watersheds the size of Mill Creek and others in the area. The upper level of funding for this program is $5 million per watershed. One very positive feature of this

program is that it allows a group to address an entire watershed, instead of searching for funding to correct one or two discharges at a time. Nearly all of the federal and state programs have a requirement for matching funds or in-kind services. As a result, local financial support will remain a critical component to the Coalition's efforts. Future donated work by the National Guard, Army Reserves and others can be used to satisfy matching requirements of most granting agencies and foundations.

## Accomplishments and Conclusions

In its first two years of existence, the Mill Creek Coalition has been able to accomplish the construction of three major treatment systems on Mill Creek with a significant improvement in the stream's water quality in that area. Biological monitoring over the last two years has shown increases in fish and insect populations. One of these systems, the Howe Bridge Site, is currently removing about 150 pounds of iron and 300 pounds of acidity daily. The other two systems are similar in their performance. These three sites were the major abandoned seeps on Mill Creek. The Coalition is now focusing its attention on Little Mill Creek, Mill Creek's major AMD- affected tributary.

The Mill Creek Coalition has been successful because it has brought a large number of groups and agencies together. The Coalition has been fortunate to have a mix of talented and environmentally-active people and organizations. Ties to entities such as Clarion University, Damariscotta Environmental Consultants, PA DER and the PA National Guard have enabled the Coalition to get several successful projects built to demonstrate the utility of this approach. The initial sites, constructed primarily with grant money and donations, have formed the basis for credibility necessary to successfully compete for larger amounts of money through governmental programs.

Several conservation awards have been given to the Coalition and its member groups in recognition of their accomplishments. These awards have also increased the credibility and visibility of the organization. The news media are constantly informed of major developments through press releases, interviews and field trips. This has kept the local communities informed and interested in the project and its progress.

Other groups in other watersheds can use the Mill Creek Coalition's model to build their own coalition, utilizing the resources in their own area to accomplish similar results. It requires a group of dedicated individuals and a lot of hard work. Based upon our experience, important activities to pursue include the following:

Informally discuss a problem with representatives of other environmental organizations and agencies to determine if there is a serious interest.

Be as specific as possible about identifying the problem, keeping in mind that it should have high visibility, be logically and logistically possible, and benefit the greatest number of people.

Hold a conference (not appropriate for the general public) to bring everyone together to share information and to determine what expertise is available. Attempt to obtain, before the conference ends, a consensus of whether the problem can be realistically addressed.

Identify organizations and representatives of those organizations who are willing to be active members of the coalition and will work well together. Choose interim officers and

hold meetings on a regular basis. For legal purposes and to establish legitimacy, develop a constitution and bylaws and become incorporated by the state.

If not found within the coalition, identify those potential contributors who have the professional expertise to assist with various tasks. Identify sources of heavy equipment and materials which can be donated or acquired "at cost."

Identify and pursue local, as well as state and federal funding sources, and an agency that is willing and capable of handling the administrative paper work and the budgetary matters, including cash flow considerations.

Pursue awards, that if won, call attention to the group efforts and those who are working (paid and unpaid) on the project. Funding sources are also more likely to support projects where groups have established some credibility.

Inform the news media on a regular basis of the group's progress in order to maintain community support and to publicly acknowledge contributors and other key people and agencies.

*Never doubt that a small group of thoughtful, committed citizens can change the world, indeed, it's the only thing that ever has--*

Margaret Mead

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