

SECTION II

DESCRIPTION OF STUDY AREA

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GENERAL FEATURES

The Loyalhanna Creek watershed occupies 300 square miles of the northeastern portion of Westmoreland County in southwestern Pennsylvania. Located 3 miles from the mouth of Loyalhanna Creek is Loyalhanna Dam to which 292 of the 300 square miles of the watershed are tributary.

Westmoreland County, within which the watershed lies, is an outer fringe county of the Pittsburgh metropolitan area, and is included-within the Pittsburgh SMSA (Standard Metropolitan Statistical Area) by the Bureau of the Census. The county varies from suburban development and related urban industrial areas in the west to rural agricultural and recreational areas in the east. The Loyalhanna watershed occupying the northeastern portion of the County contains the industrial area of Latrobe as well as the recreational region of Ligonier. Much of the watershed is semi rural and agricultural. At one time the watershed was an important coal and coke producing area but these industries are almost nonexistent at the present time.

EFFECTS OF COAL MINING IN THE W AT ERSHED

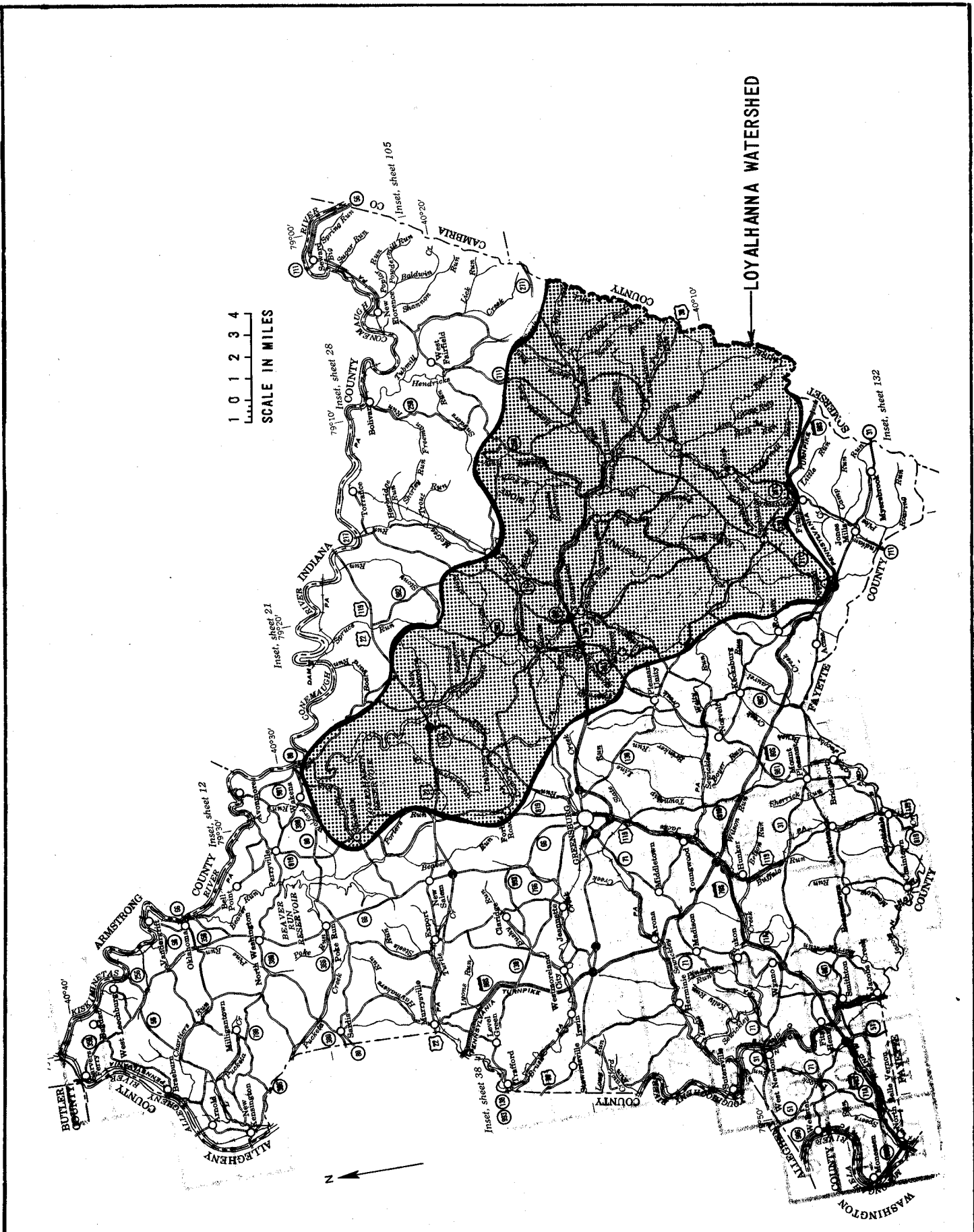
Surface Features

The effects upon the landscape of earlier mining are locally severe but not widespread throughout the watershed. In many locations far from the

actual mines there are no indications of the earlier mining activities. In other locations, coal refuse piles 50 feet high and up to a mile long still dominate the landscape. A selectively planned route through the water shed can avoid almost all evidence of former mines and mining. However, along such heavily traveled corridors as U. S. Route 22 evidence of former mining practices such as the massive refuse piles at Shieldsburg still confronts residents and travelers alike.

In the former (and in one instance still operating) mining areas of Crabtree, Slickville, Wilpen, Superior, Derry and Baggaley, the grotesque outlines of unreclaimed, unrevegetated refuse or gob piles are still present. The local effects of these scars have not been overwhelmingly negative. In some places, new construction has taken place within sight or even adjacent to the perimeter of these large mine dumps. St. Sylvester's Church has erected a new structure at the edge of a large gob pile in Slickville. Former strip mines are now included in hunting club preserves. The attitude of the residents might be characterized by the remark "These piles have been here since before I can remember, and I expect that they will probably be here long after I'm gone." The presence of these scars has not deterred growth in the water shed and with the exception of the slight losses of population in the older boroughs, which is common to all older communities, all townships in the watershed have continued to grow.

About 480 acres within the water shed are covered with refuse piles or



LOCATION OF STUDY AREA
WITHIN WESTMORELAND COUNTY

BUCHART - HORN
CONSULTING ENGINEERS & PLANNERS

MINE DRAINAGE POLLUTION
ABATEMENT MEASURES FOR THE
LOYALHANNA WATERSHED

PLATE
II-1

strip mine spoil banks. The presence of these abandoned areas has encouraged additional misuse of the land and several former strip mines are now being used as unregulated garbage dumps.

Water Quality

In contrast to the limited effects of earlier mining activity to the landscape, the effects of earlier mining in the watershed upon current water quality are widespread and inescapable. Loyalhanna Creek downstream of Latrobe is characterized by yellowboy deposits, the occasional odor of sulphur and an extremely limited stream life population.

The present condition of Loyalhanna Creek below Latrobe renders it unusable for water supply or recreation, the two major potential uses of the waterway. Several other tributaries, notably Crabtree Creek, Getty Run and Monastery Run are also unusable. Loyalhanna Reservoir, fed by runoff from 97% of the water shed, is similarly affected.

There are two major recreation areas in the watershed, Loyalhanna Reservoir and Keystone Lake. Keystone Lake is located on a Loyalhanna Creek tributary upstream of any major pollution source. It supports fishing and swimming and despite its limited size is an extensively used recreation facility. The second facility, Loyalhanna Reservoir, located on Loyalhanna Creek, is used for picnicing and power boating only, with no swimming or fishing possible.

Watershed users of municipal water supplies are unaffected by the acidity of the major streams. Latrobe secures its water from a reservoir located on Trout Run which is unpolluted. Derry secures its supply from a series of springs in the vicinity of Ethyl Springs Lake. No community is currently utilizing a surface or subsurface supply affected by acid mine drainage. There are no other significant water uses in the watershed.

WATERSHED NEEDS RELATED TO ACID MINE DRAINAGE ELIMINATION

Recreational - Water Contact

The recreational needs of Westmoreland County were reviewed by the Westmoreland County Department of Economic and Industrial Development prior to the release of a proposal for the creation of the Beaver Run Reservoir - Loyalhanna Reservoir Recreation Complex in December 1971.

This proposal cited previous studies by the Bureau of Outdoor Recreation and the Appalachia Regional Commission as a measure of the recreational needs of the southwestern Pennsylvania-southwestern Ohio region. These studies indicated the existence of a severe shortage of regional recreational facilities. The County report concluded; "Westmoreland County is suffering from a chronic shortage of water-oriented facilities, necessary to satisfy an inexhaustible demand for fishing, swimming, and boating. "¹

The recreation need studies cited by the report project for the year 1980 the following recreational demands.

These demands are based upon the

projected 1980 Pittsburgh metropolitan area and adjacent Ohio area population of 3.6 million.

These demands are expressed in recreation demand days, (one demand day equals one person desiring the use of a facility for one day).²

Swimming	89,500,000 demand days
Fishing	16,000,000 demand days
Boating	18,250,000 demand days

The projected supply of recreation facility days 1980 is:

Swimming	7,000,000 user days
Fishing	2,000,000 user days
Boating	1,500,000 user days

Projected percentage of recreation demand satisfaction 1980:

Swimming	8.0%
Fishing	12.5%
Boating	8.0%

The U. S. Army Corps of Engineers, who operate Loyalhanna Dam and related recreational facilities, have completed a "use study" for an enlarged Loyalhanna recreation area. Their estimate of future use (dependent upon improved water quality) is 1,800,000 user days per year accommodated with an initial excess demand of 300,000 user days per year. The Corps anticipates that this excess demand will increase in the future and

that with further expansion of Loyalhanna recreation capacity to 3,150,000 user days, much of this future demand could be satisfied.³

Recreational - Fishing

Related to the use of the Loyalhanna Reservoir recreation area for water

oriented recreation (boating and swimming) the reservoir and Loyalhanna Creek have obvious additional potential as fisheries to be utilized for recreational fishing. A staff member of the Pennsylvania Fish Commission commented; ". . . There is no question that if the Loyalhanna Creek and the existing Reservoir were of good water quality, they would be of great value as fisheries as the need is extremely high in this area. "⁴

Non Recreational Uses

The adverse effects of acid mine drainage upon non-recreational uses of water in the Loyalhanna Watershed are minimal. This is in agreement with the observation of the Appalachian Regional Commissions (ARC) 1969 Study of Acid Mine Drainage. The ARC finds, ". . . the water uses most constrained by acid mine drainage are those related to preservation of aquatic life and to recreation, since user adjustment techniques are simply not available. . . Other water users; industrial, municipal, navigational, etc., have developed satisfactory means through technology or otherwise of adjusting to the presence of acid mine drainage, although at some cost. . . The cost of adjusting. . . water use to acid drainage conditions are generally nominal to the individual water user. "⁵

In the Loyalhanna watershed, sufficient supplies of non-contaminated water exist into the foreseeable future to enable all domestic and industrial water users to avoid the detrimental effects of acid mine drainage.

BENEFITS OF ACID MINE DRAINAGE ABATEMENT

The benefits which might be derived from the abatement of Acid Mine Drainage in the Loyalhanna Watershed are summarized below:

Inside Loyalhanna Watershed

Recreational - Water Oriented

1. More than 3,000,000 additional water oriented recreation days at an expanded Loyalhanna facility.
2. Restocking of the Creek and Reservoir to permit sport fishing.

Other Water Uses

1. Increased potential sources of water supply for future water uses.

Land Utilization

Revegetation of approximately 1/3 of 1 % of watershed land area now barren because of high acidity. Possible beneficial effect on residential/recreation development. However, there is no present shortage of desirable land to develop for these purposes.

Outside of Loyalhanna Watershed

Improved water quality along Allegheny and Ohio Rivers. To those communities such as Pittsburgh who draw water supplies from these rivers downstream of the watershed improved water quality would reduce the cost of chemical treatment for municipal and industrial water supplies.