Mohican State Scenic River Designation Study

A study of the Clear Fork/Mohican River for inclusion into Ohio's Scenic Rivers System

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Ohio Department of Natural Resources
Division of Natural Areas and Preserves

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Introduction

Ohio pioneered the river preservation movement with the enactment of Senate Bill 345 by the 107th General Assembly on February 28, 1968. The Ohio Wild, Scenic and Recreational River Act was the first of its kind and predated the National Wild and Scenic River Act. The purpose of establishing scenic rivers is to help protect and preserve the few remaining natural rivers in the state.

Ohio's Scenic Rivers Program is administered by the Division of Natural Areas and Preserves, within the Ohio Department of Natural Resources (ODNR). The mission of Ohio's Scenic Rivers Program is to work cooperatively with local governments, businesses, landowners, non-profit organizations and other state and federal agencies to protect Ohio's high quality streams. Scenic rivers protect the aquatic resources and terrestrial communities dependent on healthy riparian habitats.

The state's Scenic River Act (see page 49) provides for three categories of designation.

Wild rivers are those rivers which are generally inaccessible, the flood plain is undeveloped, the river is free flowing and 75 percent of the adjacent corridor is forested to a depth of at least 300 feet.

Scenic river designation is representative of a waterway which still retains much of its natural character for the majority of its length. Shorelines are for the most part undeveloped, but the river may exhibit signs of disturbance by human activities. The adjacent corridor must be forested to a minimum depth of 300 feet for 25 percent of the stream's length.

Recreational rivers are those rivers which do not possess the same degree of natural quality found in Wild or Scenic rivers, yet warrant protection

due to unique cultural and/or important historical attributes. The influence of human activities is much more apparent on rivers with this classification.

Ohio currently has 12 designated Wild, Scenic and/or Recreational rivers comprising 21 stream segments. More than 722 river miles are protected in Ohio's Scenic Rivers Program. Three state designated streams, the Little Miami, Big and Little Darby Creek and Little Beaver Creek, are also designated as National Scenic rivers.

ODNR recognizes partnerships and local cooperation as the most effective method for river preservation efforts. Rivers are studied for possible designation only after receiving resolutions of support from a majority of local governments adjacent to the river. Designation studies incorporate extensive field investigations and data review with the assistance and input of numerous local organizations and individuals.

Upon designation of a river as Wild, Scenic or Recreational, the director of ODNR appoints a 10-member Scenic River Advisory Council which represents local interests within the river watershed. Members often include private citizens, local government officials, conservation organizations and property owners. Scenic River advisory councils advise ODNR on local attitudes, interests and areas of concern related to the preservation of a designated river.

Designating a Wild, Scenic or Recreational river enables the coordination of river preservation activities among state and local governments, organizations and individuals. When combined with statutory authority to review and approve or disapprove publicly funded projects on Scenic rivers, designation helps ensure that decisions and the activities, which may impact a Scenic river, are conducted in an environmentally sensitive and responsible manner.

To best understand the context of the information provided in this report, it is important to recognize that the role of Ohio's Wild, Scenic and Recreational River Act is to identify and protect those rivers and streams possessing important natural or historical characteristics of state significance. The Division of Natural Areas and Preserves' Scenic Rivers Program seeks to identify and designate the few remaining river systems which have retained their most natural characteristics and those that, due to their intact natural characteristics, possess uniquely important historical values.

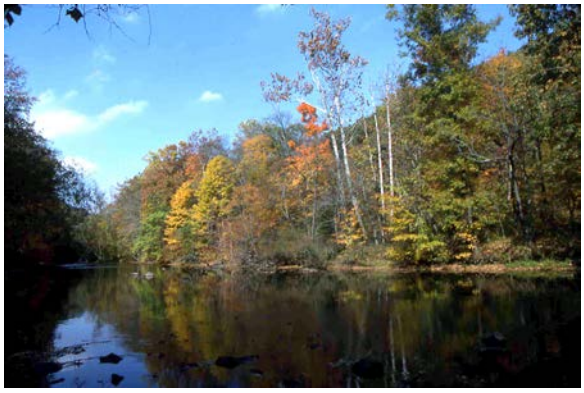
The purpose of this examination of the Mohican River watershed is to determine whether the Mohican River meets state Wild, Scenic or Recreational river designation criteria. Additionally, this report represents a recommendation related to whether any portions(s) of the watershed should be recognized as a component of Ohio's Scenic Rivers system.

Executive Summary

Tourists and community leaders have long realized the value of protecting the Mohican River's high quality natural corridor. Located between Columbus and Cleveland, tourism is a vital component of the region's local economy. Visitors from across Ohio have made the Mohican River watershed a favorite vacation or weekend destination for decades. Scenic river status will help protect the scenic integrity of the Mohican River for future generations.

Scenic river designation for the Clear Fork and main stem of the Mohican River was initiated by local residents and businesses, including a number of canoe liveries and campgrounds. The designation was equally supported by local political subdivisions along the river corridor. Resolutions of support were passed by the Ashland, Coshocton, Holmes and Knox boards of county commissioners as well as the following townships: Hanover, Jefferson, Knox, Newcastle, Tiverton and Union.

This river system is navigable by canoe and offers a high quality recreational experience for users. There are a variety of camping, canoeing, fishing, hiking and picnicking activities available along the Mohican.



The lower section of the Clear Fork and the Mohican River consists of a lush forested river valley and clean, flowing waters which provide valuable habitats for numerous flora and fauna. The proposed river segments vary in width from 30 feet in the upper reaches to more than 180 feet on the main stem. The Clear Fork has an average fall of 11 feet per mile while there is 7.9 feet per mile fall on the Mohican's main stem.

The following segments of the Clear Fork and main stem of the Mohican River meet or exceed the qualifying criteria and are therefore recommended for designation as an Ohio Scenic River.

- **The Clear Fork of the Mohican River from the base of the Pleasant Hill Dam to the confluence with the Black Fork of the Mohican River. The distance of this segment recommended for Scenic River designation is 4.8 river miles.**

- **The entire main stem of the Mohican River from the confluence of the Clear Fork and Black Fork to the confluence with the Kokosing State Scenic River. The distance of this segment recommended for Scenic River designation is 27.5 miles.**

The total distance for the recommended Mohican State Scenic River segments is 32.3 miles.

Criteria for Scenic River Designation

To obtain **Wild River Designation**, the following criteria must be met:

- 100 percent free flowing in natural condition
- Accessible by canoe or trail
- No more than two bridges per 5 river miles
- The designated section of river must be more than 10 miles

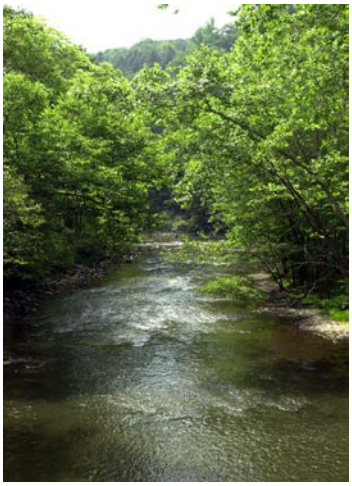
- At least 75 percent of the river's shoreline must be in natural condition representing vestiges of primitive Ohio
- No industry may be located within 300 feet of the river or within the visual corridor
- Water quality must exceed aquatic life-warmwater fisheries criteria
- Pan fish or game fish must be present in at least 75 percent of the designated section

To obtain **Scenic River Designation**, the following criteria must be met:

- At least 75 percent of the river is free flowing in natural condition
- Accessible by canoe or trail during normal recreational season
- No more than 50 percent of the adjacent roadways may be closer than 300 feet from the river's banks
- The designated section of river must be more than 10 miles, which may be in conjunction with other designations
- At least 25 percent of the shoreline of designated section should be in 300 feet of forest cover
- No more than one industry for each 5 miles within 300 feet of the river or within the visual corridor
- Water quality must meet aquatic life-warmwater fisheries criteria
- Pan fish or game fish must be present in 50 percent or more of the designated section

To obtain **Recreational River Designation**, the following criteria must be met:

- At least 25 percent of the river must be deep enough for small boating and for pan or game fishing
- The river must be readily accessible by road or railroad
- The river may flow through urban areas, but 50 percent of the river must be in natural vegetation or cultivation
- The designated section of river may not be less than 10 miles, and may be in conjunction with other designations
- Water quality must exceed designated recreational use water qualities or standards for public water supply



Scenic River Designation Process

Step 1: Determine if the river proposed for designation meets minimum length and width requirements.

The sections of the Mohican River proposed for the study exceed the minimum length of 5 miles and have a mean surface width greater than 10 feet.

Step 2: Obtain resolutions of support for the designation study from at least 50 percent of the local political subdivisions that are located within 1,000 feet of the area proposed for designation.

Resolutions of support have been unanimously approved by all of the county commissioners and township trustees in the study area. Ashland, Coshocton, Holmes and Knox counties have passed resolutions of support, as well as the following townships: Hanover, Jefferson, Knox, Newcastle, Tiverton and Union.

Step 3: Collect background and resource information on the natural and cultural history of the watershed.

Information was collected from a variety of sources. Some of the most valuable information was provided by local constituents.

Biological data was received from the Ohio Natural Heritage Database as well as Ohio Northern University, Cleveland Museum of Natural History and Ohio Environmental Protection Agency. In addition to the Division of Natural Areas and Preserves, other ODNR divisions submitted information including Forestry, Parks and Recreation and Wildlife.

Step 4: Conduct a river inventory to document the existing condition of the river's corridor within 300 feet of the river.

The whole proposed scenic corridor was floated during the summer of 2006. Digital photography was used to document the river segments, such as shorelines, islands and historical sites. Areas in close proximity to public roads were also visited.

Step 5: Complete the designation report and submit the recommendation to the director of the Ohio Department of Natural Resources.

After reviewing the Scenic river criteria and the qualifications of the river segments, it is recommended that the following segments be designated as a State Scenic river:

- The Clear Fork of the Mohican River from the base of the Pleasant Hill Dam to the confluence with the Black Fork of the Mohican River. The distance for this segment is 4.8 river miles.
- The main stem of the Mohican River, which is the area from the confluence of the Clear Fork and Black Fork down to the confluence with the Kokosing State Scenic River. The distance for this segment is 27.5 miles.

Step 6: The director of the Ohio Department of Natural Resources may declare his intent to designate a river as Wild, Scenic or Recreational by placing a legal notice in the principal county newspapers and by informing applicable public officials in writing.

Step 7: After 30 days have elapsed, the director shall make the designation official by making an entry into his journal.

General Description of the Clear Fork/Mohican River

The Mohican River watershed drains nearly 1,000 square miles of land. It has three main tributaries: Black Fork, Lake Fork and Clear Fork. There are two dams on the Clear Fork—Clear Fork Reservoir and Pleasant Hill Lake. The Black Fork has a dam which forms the Charles Mill Lake, while Lake Fork has a dry dam at Mohicanville.

Since lakes and reservoirs are not eligible for Scenic River designation, the proposed designated segment on the Clear Fork tributary begins at the base of the Pleasant Hill Dam in Ashland County. According to the Ohio Environmental Protection Agency (EPA), it is recorded as river mile 4.8 on the Clear Fork. The location of the dam was originally planned further downstream, but it was determined that the rock in the gorge was too porous and the sandstone too crumbly. Engineers found better geologic conditions at the present location. By choosing a new location, one of Ohio's most significant gorges, Clear Fork Gorge, was preserved.

The Clear Fork of the Mohican River is contained in a 1,000 foot wide gorge, 200 to 300 feet deep. The average gradient is 11.0 feet per mile. The river has a cobble and gravel substrate with pieces of Black Hand sandstone occurring throughout this reach.

The stream's riparian corridor is well forested with sycamore, cottonwood, willow and other typical floodplain species. In places where the hillsides are steep, hemlock, native white pine and mixed hardwood species are present. Most of the riparian corridor, from the dam to the confluence with the Black Fork, with exception of one private parcel, is owned by ODNR's Division of Parks and Recreation and comprises Mohican State Park. The park's management plan has ensured the pristine condition of this exceptional river segment.

From the Pleasant Hill Dam, the Clear Fork flows in a southeast direction. At river mile 4.0, a

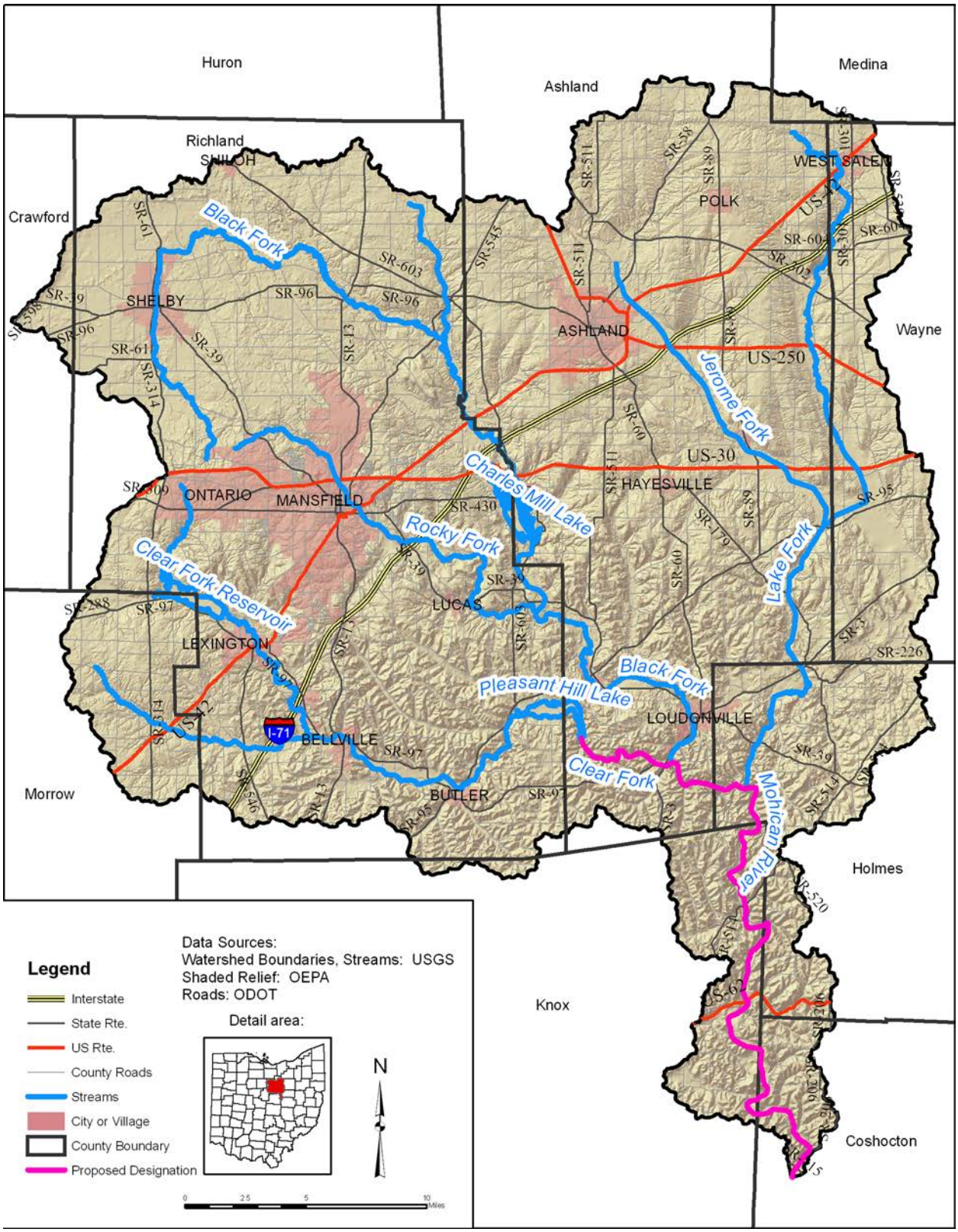


Figure 1 - Mohican River Watershed

covered bridge of modern construction spans the channel. A parking lot on the south side provides access to the Lyons Falls and Pleasant Hill nature trails. Both trails lead in an upstream direction. Moving downstream from the bridge, there is a camping area with fishing access extending about a mile on the north side of the river. This is a popular access site to experience the scenic beauty of the gorge. The site also features a picnic area.

Clear Fork Gorge State Nature Preserve is located on the south side of the same section. A portion of the 29-acre site protects 8 acres of old growth white pine and numerous hemlock trees on the north slope. The extremely steep slopes protected this site because the area was too steep for conventional logging equipment. The site was dedicated a state nature preserve in 1989 and was also declared a national natural landmark in 1967. The geologic history of the gorge is described on page 21.

Lyons Falls

Mohican State Park

Just past where the gorge narrows, the river flows through private lands from river mile 3.2 to 2.3. Continuing down river, Mohican State Park cottages appear on the right side. The bridge at river mile 1.0 is owned by the state park and provides access to the cottages. From here until river mile 0.2 (State Route 3), the Mohican State Park's campground is visible on the left side just before the State Route 3 bridge. Past the bridge, there is another public access site on the left hand side.

The mouth of the Clear Fork and Black Fork join together in Ashland County's Hanover Township. The Black Fork, which flows through Loudonville, is a popular stream for paddlers.

The Mohican main stem is formed at the confluence of the Clear Fork and Black Fork tributaries. From there the river flows southward for 27.5 miles. It ends just south of State Route 715 near the village of Walhonding, where the Mohican joins the Kokosing to form the Walhonding River. About 12 miles away, the Walhonding River joins the Tuscarawas River in Coshocton to form Ohio's largest river, the Muskingum.

The Mohican River has an average gradient of 7.9 feet per mile. According to Ohio EPA river mileage maps, the Mohican River begins at river mile 27.5.

Popular floating and other recreational activities continue down the Mohican main stem. Many private campgrounds, close to the river, support outdoor pursuits in the Mohican watershed.

Despite the high volume of recreational users, the river corridor has retained a forested canopy. Campgrounds and canoe liveries abound throughout the upper reach of the Mohican all the way into Knox County, where commercial paddling activities end at the public access area downstream of the State Route 514 bridge in Greer. In some places stone or concrete has been placed to protect the riverbank from erosion.

The Mohican enters Holmes County at river mile 25. Along this scenic and popular stretch, Knox Township Road 208 crosses at river mile 24.7. At river mile 24.3, a bridge for Holmes County Road 23, also known as Wally Road, crosses the river.

Wally Road follows the Mohican River from State Route 3 in Ashland County to Greer in Knox County. Part of the road was built on the old Wally Railroad right-of-way. The Ohio Department of Transportation designated Wally Road an Ohio Scenic Byway in 2005.

The Mohican River's final major tributary, the Lake Fork, enters from the left at river mile 23.5. Just past this junction, the river begins to make a 90 degree turn to the south. On the left, a 300-foot forested hill towers above a campground on the opposite side.

Continuing down river, the next bridge crossing is Knox Township Road 211, locally known as Hyde Bridge. On the right of the bridge, downstream, a series of stacked tires serves as streambank protection. A short row of houses ends as the river flows against the west hillside; Wally Road lies between. As the river flows south towards Knox County, it crosses the valley flowing against a nearly 300-foot steep, wooded hillside.

The uppermost reach of the Mohawk Dam pool area is located at river mile 22. The limiting elevation for the pool area is the 890-foot mark. The U.S. Army Corps of Engineers surveys and posts this elevation from the Mohican and Walhonding rivers to the Mohawk Dam. (The pool areas also encompass the Kokosing River to the town of Howard.)

The Knox County line occurs at river mile 21.6. The river flows to the south at this reach and begins to turn almost due west. A 300-foot high hillside is located on the outside bend (left) of the river. Wally Road lies on the west side of the river. As the river flows from the outside bend, it flows west for a half mile.

Just past two old stone piers at river mile 20.6, the river makes a 90 degree turn and flows south. A short distance downstream, another stone pier may be seen.

From river mile 20.1 to 18.8, the river flows along the east boundary of the valley floor where heavily wooded hillsides rise 300 feet above the river. This section of the river flows relatively slowly along the west side of the valley. Wally Road is close to the river, but is not visible because its elevation is several feet above the river.

The river crosses the valley again at river mile 18.1. Just upstream from Greer, at about river mile 18.0, another pair of stone piers from the Wally Railroad are visible as the river crosses the valley and flows against the east side.

Areas where the surface is broken and water flows swiftly over rocks, increasing the amount of dissolved oxygen are called riffles. There is a riffle in this section just upstream from the bridge in Greer.

The State Route 514 bridge in Greer is located at river mile 16.9. There is one pier from a previous structure remaining on the downstream side of this bridge. Wally Road ends along the west side of the river as Greer appears. Although Greer is fairly close to the river, the village contributes little impact to the river.

Downstream from the bridge on the east side, the Knox County Park District owns a public canoe landing. Knox County Road 77, locally known as Brinkhaven Road, runs along the base of the hill. An Indian mound is located at the top of the hill. This section marks the end of commercial canoe routes. From here to the confluence, paddling activities are considered non-commercial.

Downstream at river mile 16.4, remnants of a U.S. Geologic Survey gauging station may be seen on the left side. The elevation is at 880 feet, the highest point at which flood water was pooled by the Mohawk Dam in January 2005. On the right side of the channel, between a small island and river bank, the John Greer sawmill was located in the 1800s.

The river turns east at river mile 16.0, just past an unnamed tributary entering on the right. Just before the Holmes County line, Knox County Road 77, replaced in 2000, crosses the river.

The Holmes County lines is at river mile 15.3. After passing into Holmes County, the river flows south at Alum Rock. The area has been documented as a Native American burial ground. This site was also a regional favorite picnicking spot in the early 20th century. There is exposed bedrock as the river flows against the east bank across a nice gravel/cobble riffle and a tributary, which enters from the east.

At river mile 14.3, the Mohican River enters Knox County for the second time at Jefferson Township. Camp Nelson Dodd is located on the left bank. A former YMCA camp, it was sold to the Evans Foundation of Newark in 1993 and is currently used as a church camp.

Over the next 2 river miles, the river widens to more than 200 feet in places. The substrate is comprised of mostly sand and gravel. The river flows in a southerly direction toward Brinkhaven. In the distance, on both sides of the valley, wooded hillsides, sometimes rising 300 feet, tower over the river.

After entering Union Township, the river flows in a southeast direction toward a partially demolished lowhead dam, which functioned as a mill race in the 1800s. The old dam is located at river mile 11.7. Portage is necessary to safely traverse it. Immediately past it is an abandoned bridge that was replaced by a new bridge for State Route 62 almost immediately downstream.

The village of Brinkhaven is about 1,000 feet from the river, separated by a fishing access area owned by ODNR's Division of Wildlife.

Mohican Trail's Bridge of Dreams

One of Ohio's longest covered pedestrian bridges, the "Bridge of Dreams," spans the stream at river mile 11.4. It provides access for the Mohican Trail, which was constructed on the vacated Penn-Central Railroad.

About a half-mile southwest of the covered bridge, at river mile 11.0, the river widens to about 200 feet and features a gravel bottom. A

quarry operation is located on the west side, but it is not visible. On the east, a section of Union Township Road 218 winds along a segment of the river, but does not become visible until it crosses at river mile 10.0. An old truss bridge, locally known as Hunter Road Bridge, has a single pier in the river. The single lane bridge was limited to 3 tons.

A riffle provides excellent habitat for aquatic life at this reach. On the east side, bald eagles nest in the steep wooded hillsides. This site has been locally named the "eagle's nest" for many years.

From river mile 10.0 to the Coshocton County line, the river flows in a southeast direction. The river valley widens, but the Mohican flows against the right bank along a steep 300-foot wooded hillside. The high bank is a topographic feature which forms the eastern edge of what is known as the Tager Valley.

At river mile 8.3, the Mohican enters Coshocton County from an eastern flow. The bridge across the river at river mile 6.5 is Coshocton County Road 365. Aligned in an east-west direction, it enables access to the town of Cavallo from Knox County. An excellent riffle area is located just upstream from this bridge.

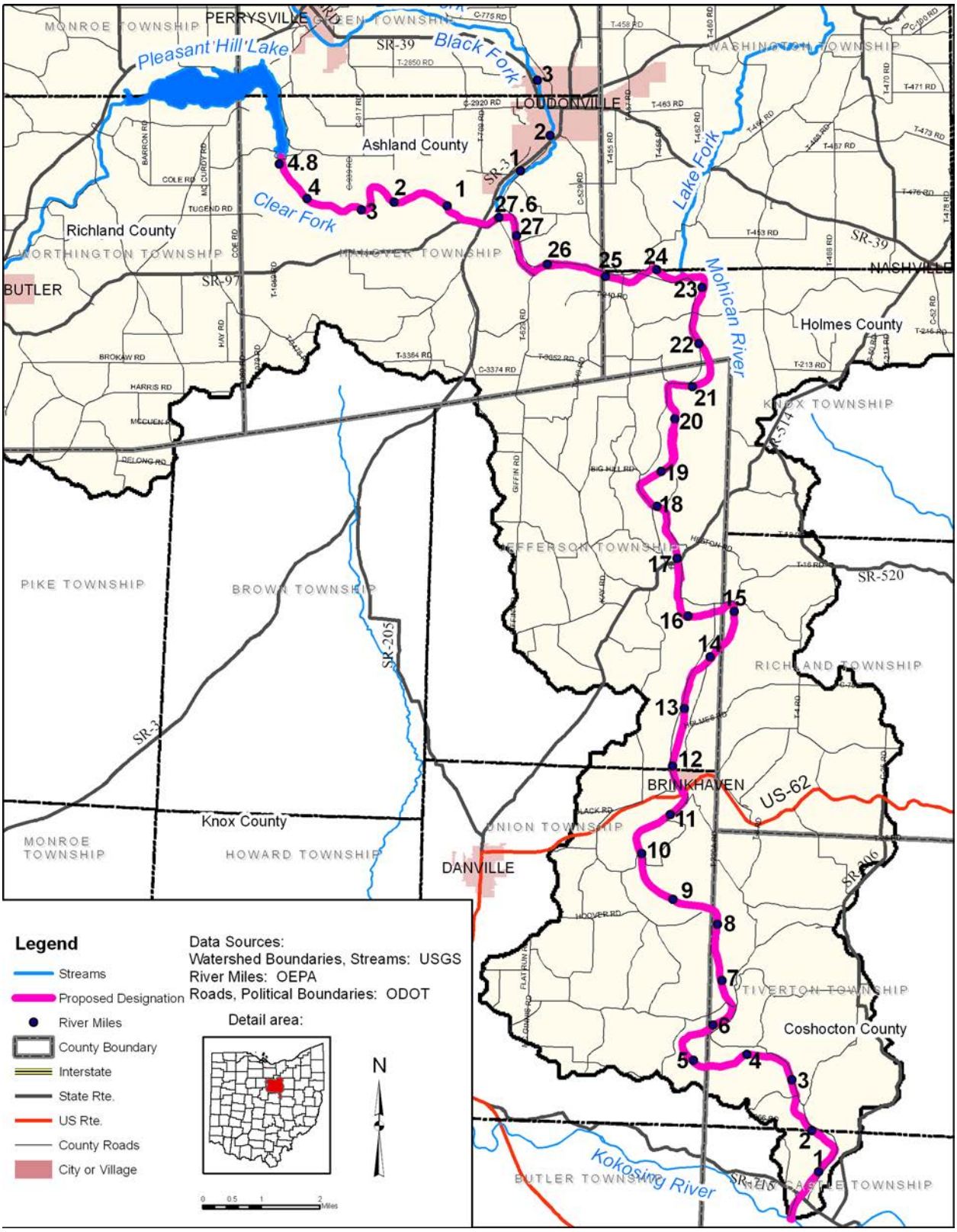


Figure 2 - Mohican River Designation

Knox-Coshocton County line

The river flows along another steep 300-foot bank on the east side of the river, just south of Cavallo. From river mile 5.9 to 4.7, the river flows through Knox County for the last time. This section has a large island that was reportedly visited by Johnny Appleseed. Just past the island, the Flat Run tributary enters the river. Steep wooded hillsides are more than 300 feet high along the western bank. Public land, which is available for hunting and fishing, lies on the east side of the river. Access is available along Coshocton County Road 368.

The Knox-Coshocton county line is at river mile 4.7. The county line is marked by a groove chiseled into a large boulder which rests on the right descending river bank. This reach has visible evidence of the 25-mile Walhonding Canal on the left side, including remains of a guard lock. The county line can be viewed by portaging on the bank and climbing to the top of the stone. From here to its terminus, the river remains in Coshocton County.

From river mile 4.0 to 2.7, the Mohican flows in an east/southeast direction. The 150-foot wide river crosses from the southern side of the valley to the northern side. At the beginning of this reach, old railroad bridge abutments are evident.

Continuing downstream on the right, a large, private campground is visible from the river. On the west side, a sandstone quarry operation is located about a mile away and 200 feet above the river.

At river mile 2.7, on the downstream side of Tiverton Township Road 364, known as Spurgeon Bridge, a long riffle area provides excellent habitat for fish and native mussels. Exposed bedrock may be seen as the river flows against the western hillside before it crosses the valley again to the east bank. Coshocton County Road 368 follows the eastern side of the river and ends at State Route 715. County Road 368, once the old tow path for the Walhonding Canal, offers views of exposed bedrock and scenic woodlands.

The river, from State Route 715, at river mile 0.5, to the confluence with the Kokosing River, is now flowing through the center of the valley. The last stone pier for the Wally Railroad is evident downstream of the bridge. A nice riffle is located in this reach. The riparian forest is somewhat more narrow, flanked by cropland on each side. The west side of the river is owned by the Muskingum Watershed Conservancy District. Public access is permitted at the confluence of the Mohican and Kokosing rivers on Newcastle Township Road 423.

History of the Mohican River Corridor

The Mohican River, including its tributaries, has played a significant role in the lives of local inhabitants. The region's lush forests, abundant game and fertile agricultural lands were highly valued by Native American tribes, such as the Mohegan and Delaware. Early settlers were drawn to the river valley for the same reasons.

The constant flow of portions of the Mohican River and its tributaries, the Clear Fork and Black Fork, provided excellent navigation for small watercraft, such as flat-bottom boats and canoes. Because of their connection to the Muskingum River, these streams proved invaluable for transportation and commercial ventures.

The Mohican River's name has its roots in Native American language. Mohican was derived from the Mohegan, one of several tribes which inhabited the valley. The Delaware Indians also inhabited this river region. They held claim to the lands until 1795 when the Delaware ceded a large portion of northern Ohio at the signing of the Greenville Treaty. However, the Indians were eventually driven from the area by European settlers after the War of 1812.

Immortalized as Johnny Appleseed, John Chapman frequented the region during the 1800s. His name and a date, carved in the wall of Lyons Falls in the upper end of the Clear Fork Gorge, remained an attraction for years. Unfortunately, the etchings have disappeared with the passage of time. Chapman's nurseries were spread throughout the valleys.

Black Fork of the Mohican River

Although the Black Fork of the Mohican River is not part of the current designation study, it is important to mention the village of Loudonville. Many historical events in the Mohican Valley occurred as Loudonville developed. Founded in 1814 by James Loudon, Loudonville flourished because of the mills located on the Black Fork and the railroads that passed through it. There are accounts of residents taking cherry lumber, wheat and whiskey by boat all the way to New Orleans during the 1800s.

Clear Fork of the Mohican River

By the 1930s, much of the watershed had been cleared of trees for row crop farming. Even hilltops were left barren after they had been eroded by years of farming. The Mohican and its tributaries easily flooded after 3 or more inches of rain fell on the empty landscape.

Flooding solutions included erosion control, dam construction and reforestation. A large tree planting effort occurred in the Clear Fork area. In June 1933, the Civilian Conservation Corps established a reforestation camp in the Mohican State Forest; thousands of trees were planted.

In 1917, Ohio passed the Ohio Conservancy Act. This legislation enabled the formation of the Muskingum Watershed Conservancy District (MWCD) in 1933. The MWCD raised funds and supported the construction of 14 dams. To reduce downstream flooding, the Pleasant Hill Dam was constructed on the Clear Fork of the Mohican in 1938.

Prior to 1949, most of the area which comprises the present Mohican State Park was part of the Mohican State Forest, also known as Mohican State Forest Park. When the Ohio Department of Natural Resources was established in 1949, Mohican and several other state parks were developed from existing state forests. The new park was named Clear Fork State Park. Later, in 1966, the name was changed to Mohican State Park. The original portion of the Mohican State Forest, called Clear Fork Park, was about 600 acres in size. Today the area encompasses a 4,500-acre state forest, which also serves to protect the unique gorge area.

Greer

The unincorporated village of Greer, also called Greersville or Edlam, was established in 1836 by Robert Greer, an Irish immigrant who came to Ohio with his family in 1827.

Greer was an investor in the projected Calico Railroad (officially the Springfield, Mt. Vernon and Pittsburgh Railroad) which would have run from Lakeville in Holmes County, somewhat parallel to State Route 514, and then southwest from Greer to Howard. Unfortunately, another railroad reached Howard first and the Calico route was abandoned. However, traces of some

Clear Fork Gorge State Nature Preserve

nearly completed cuts (trenches) and fills (ridges), as deep at 20 feet, are visible in the first mile southwest of Greer.

In 1893, the Wally Railroad was built by the Pennsylvania Railroad, connecting their mainlines in Coshocton and Loudonville, and running through Greer.

Until 1940, Greer was a thriving village. At one time Greer supported a railroad depot, grain elevator, feed mill, stockyard, two general stores, two hardware stores, farm equipment dealership, creamery and blacksmith. Still visible above the masonry block building is a second-story community hall which hosted cultural events. Until 1958, the Greer Farmer's Institute was held there. The event, one of the last community education programs of its kind in Ohio, is still held in Greer today.

A modern, compound curved bridge was built over the Mohican River in 1972. An earlier bridge was swept away by the disastrous flood of 1913.

Brinkhaven

The village of Brinkhaven (also called Gann) was incorporated in 1892, but had existed for 20 years previously. Brinkhaven also owed its prosperity to a railroad—the Cleveland, Akron and Columbus (CAC), which ran northeast to southwest—and a water-powered mill.

The mill-race, a canal that led water from the mill pond to the mill's wheel, and can still be seen today. It resulted in a small adjoining span of the long bridge (now partially dismantled) where U.S. Route 62 crossed the Mohican. In 1950, the mill burned to the ground and was never replaced. U.S. Route 62 was relocated south of Brinkhaven around 1959.

The Wally Railroad was also important for commerce and civic affairs in Brinkhaven. Until the 1920s, students commuted by train to the local high school. As with Greer, Brinkhaven's economy suffered when that rail line shut down in the late 1930s. The CAC Railroad was discontinued after the flood of 1969 destroyed irreplaceable sections of track around Killbuck, 15 miles to the east.

Cavallo

Between 1840-1850, Cavallo was a thriving town. It was dependent upon the canal which beganjust south of Cavallo. Although located in Coshocton County, it handled most of Knox County's imports and exports by way of the Walhonding Canal, a part of the Ohio Canal. The feeder canal followed the Mohican River on the east side and eventually flowed through Coshocton via the Walhonding River.

During that time, the mouth of the canal boasted one of the biggest grain elevators in central Ohio. At its peak, Cavallo had four large warehouses plus residential housing. When railroads replaced the canals, towns like Cavallo were no longer necessary and did not survive. Today, only a few old houses remain near the east side of the Mohican River.

Mohawk Dam

Along with 13 other dams built to control flooding on the Muskingum River, the Mohawk Dam was completed in 1937 and remains functional today.

The Mohawk was engineered as a dry dam, which means that it impounds runoff only when downstream flooding conditions are anticipated. Storage is initiated when stream flows begin approaching downstream capacity. The storage of runoff continues until the release of water from the reservoir will not add to the flood damage downstream.

The Flood Control Act of 1938 turned over the management of the dam to the U.S. Army Corps of Engineers. Today the dam is operated under the authority of the U.S. Army Corps of Engineers in Huntington, West Virginia. The storage area for the dam is the land that lies below the 890 foot elevation. This elevation continues all the way to Holmes County at river mile 22.0.

Land below the 890-foot elevation is prohibited from encroachments, such as buildings and fill placement. Properties include recorded easements which restrict certain uses and gives power to the U.S. Army Corps of Engineers to remove encroachments that lie within the easement area.

Present-day Mohican Valley

Without the transportation routes of bygone railroads, the Mohican valley's local economies rely primarily on tourism and agriculture. The rugged nature of the topography has slowed commercial development.

The Mohican valley has a strong tradition in outdoor recreation. The recreational boom began in the early 1970s with the establishment of canoe liveries and campgrounds. Prior to this, the state maintained a campground at Mohican State Park. With the rapid recreational growth along the Mohican River in southern Ashland County, the village of Loudonville developed into the canoe capital of Ohio.

Today, in the surrounding area of Loudonville, there are 10 campgrounds with more than 2,500 campsites and six canoe liveries offering 1,000 canoes, rafts and kayaks. Lodging in the Loudonville area consists of the state park lodge, cabins, motels, bed and breakfasts, and even a castle. Estimated lodging totals more than 200 rooms. Some of the most popular camping sites are located along the Mohican River, near the Wally Road Scenic Byway.

The Wally Road Byway Association sponsors four major outdoor events each year. A number of other locally sponsored events draw Ohioans to the river corridor all year round.

Because of the lands through protected by the state forest, park and preserve, as well as the activities offered by private campgrounds and canoe liveries, visitors have a wide range of recreational opportunities including canoeing, horseback riding, hiking, fishing, hunting and camping.

Natural Features of the Mohican River Corridor

Clear Fork Tributary

The Clear Fork Gorge is home to a geologically significant river valley. An example of stream reversal, it tells a unique glacial and geologic story.

Thousands of years ago, the gorge area was a divide between two watersheds. The last glacier, the Wisconsinan, occurred about 14,000-15,000 years ago. During this glaciation, a wall of ice blocked the river to the west of the divide. As time passed, a huge lake was formed in front of the ice dam. Eventually, water was able to flow over the divide, which began to erode the gorge.

The gorge area is shaped like an hourglass. This shape helps us to understand the erosion that continues today. The short period of time since the Wisconsinan glacier occurred has not been a significant enough amount of time to widen the valley. Additionally, the massive sandstone formations that comprise the gorge is also partly responsible for the gorge's narrow form. The erosion-resistant Black Hand sandstone prevents a rapid widening of the gorge.

Mohican River Corridor

The course of the ancient, pre-glacial Mohican River was significantly altered by the Illinoian glacier, more than 130,000 years ago. The river formerly flowed in a southwest direction toward present day Howard and Utica, joining the ancient Teays River drainage system.

Erosion and deposits from the Illinoian forced the river due south through Brinkhaven in Knox County. It left a valley so narrow that seldom is the floodplain wide enough for a field on both sides of the river. In most cases, the valley is gorge-like, holding only one field, then the river. Roads either cling to the hillsides at river's edge or follow the far edge of the valley.

Clear Fork's hemlock-hardwood forest

Plant Communities

The plant communities found in the Mohican River valley include hemlock-hardwood forest, oak-maple, oak barren, beech-sugar maple, mixed mesophytic and floodplain forests, forest seeps, marshes, shrub swamps and non-calcareous cliffs.

Hemlock is a key species of the hemlock-hardwood forest community, an important

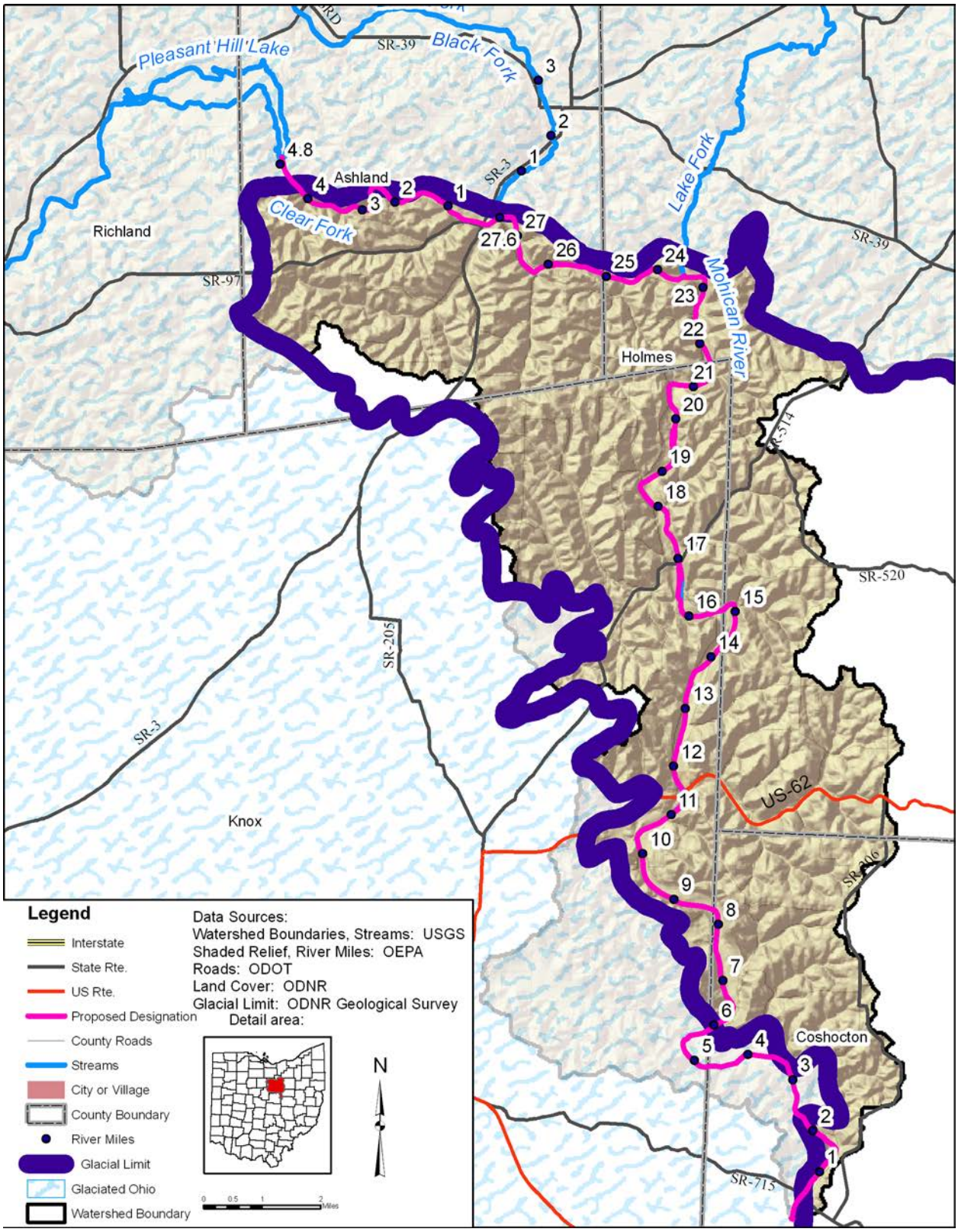


Figure 3 - Glacial Geology

forest community in the valley. Eastern hemlock (*Tsuga canadensis*), a species of the Appalachian mountains and north of Ohio, is frequently found throughout the Mohican valley. It occurs in cool, moist habitats, such as narrow ravines and north- and east-facing slopes. These populations are relicts from the last glacial advance. It provides nesting habitat for several rare birds including black-throated green warbler, blue-headed vireo, hermit thrush and mourning warbler.

Clear Fork Gorge State Nature Preserve protects one of the best remaining hemlock-hardwood forest communities left in Ohio. It features a mature stand of white pine intermixed with Eastern hemlocks and oaks. Many hemlocks may also be found on the steep hillsides of the Mohican's tributaries.

Rare Plants

The steep river bluffs found along the Mohican are home to a variety of Ohio natives, including the state threatened Allegheny-vine (*Adlumia fungosa*). The Mohican River valley has one of the largest populations of it remaining in the state.

One of Ohio's largest populations of threatened leafy goldenrod (*Solidago squarrosa*) occurs in the Mohican State Park, along a steep southfacing slope near the river.

Another threatened plant primarily found in the Mohican River watershed is woodland bulrush (*Scirpus expansus*). This species is found in seeps and fens, mostly in the Clear Fork area.

Birds

For this study, the Mohican River corridor includes the Clear Fork and main stem. The Mohican River corridor provides high quality riverine habitat for a number of breeding birds. The best areas for birdwatching includes Mohican State Park and State Forest, as well as Clear Fork Gorge State Nature Preserve.

In 1997, Steve McKee of the Gorman Nature Center conducted a comprehensive survey that covered more than 5,000 acres surrounding the Clear Fork tributary. The study noted the habitats and locations of the surveyed bird species using qualitative and quantitative survey methods. McKee's survey revealed a total of 101 species in the area including Blackburnian warbler, Canada warbler, chestnut-sided warbler, dark-eyed junco, magnolia warbler, Northern parula, Northern waterthrush, red-shouldered hawk, redbreasted nuthatch, summer tanager, yellow-rumped warbler, winter wren and worm-eating warbler.

The National Audubon Society's Ohio Chapter named the Mohican State Forest and State Park as Important Birding Areas (IBA). Currently, Ohio has more than 80 designated IBAs. These areas are selected using criteria including habitat, species diversity and importance as a bird study area.

Downstream of the Clear Fork, on the main stem, a variety of avian life can be found including waterfowl, herons and bald eagles. The extensive forest cover on the lower main stem provides excellent nesting habitat.

Unionids

Freshwater mussels are mollusks—close relatives of clams, oysters and saltwater mussels. Many species of freshwater mussles can live for 20 to 30 years; some individual species live for more than 100 years.

Freshwater mussels have been valued by humans throughout history. Their shells have been used to make buttons or serve as seedstock for the cultured pearl industry. Some can produce their own pearls. They have also served as a food source for Native Americans.

Mussels are filter feeders and are therefore sensitive to sediment contamination. Adult mussels are an excellent indicator of ecosystem health and stability. Relatively immobile, freshwater mussels imbed themselves in the streambed, filtering streamwater for oxygen and food. Their lack of mobility makes them particularly vulnerable to water and sediment contamination, changes in sedimentation or prolonged drought. Thus, ecosystem health and stability are critical for freshwater reproduction and survival (U.S. Geologic Survey, 2002).

The Mohican and Walhonding rivers constitute some of the richest habitat for invertebrate aquatic life in Ohio. In a 1973 study, Dr. David Stansberry stated that the river system contained the richest and largest variety of invertebrates to be found in Ohio.

Other than some sampling which occurred in the summer of 2006, the last known formal mussel survey of the Clear Fork and main stem occurrred in August 1998. Part of the survey, conducted by Dr. Michael A. Hoggarth of Otterbein College, included two sites on the Clear Fork and two sites on the Mohican River.

The purpose of that study was to determine the changes in mussel fauna based on recorded specimens and the occurrence of dead versus live specimens. According to Hoggarth's report, the lower Mohican has not had a complete study in recent times. Management strategies could be employed to restore species and/or maintain mussel diversity.

In a 1994 survey, Hoggarth found a single, freshly expired clubshell specimen, which is a state and federally endangered species. It was found a few hundred meters downstream of the mouth of the Mohican.

Unionid Species of the Mohican River

Black sandshell *(Ligumia recta)*
Clubshell *(Pleurobema clava)*
Creek heelsplitter (*Lasmigona compressa*)
Fat mucket *(Lampsilis radiata luteola)*
Fluted-shell** *(Lasmigona costata)*
Elktoe *(Alasmidonta marginata)*
Giant floater** *(Pyganodon grandis)*
Kidneyshell** *(Ptychobranchus fasciolaris)*
Long-solid *(Fusconaia maculata)*
Mucket *(Actinoaias ligamentina ligamentina)*
Paper pondshell** *(Utterbackia imbecillis)*
Pimpleback *(Quadrula pustulosa)*
Pistolgrip *(Tritogonia verrucosa)*
Plain pocketbook** *(Lampsilis ventricosa)*
Pocketbook *(Lampsilis ovata)*
Purple wartyback *(Cyclonaias tuberculata)*
Rabbitsfoot *(Quadrula cylindrica)*
Rainbow** *(Villosa iris)*
Rayed bean *(Villosa fabalis)*
Round hickorynut *(Obovaria subrotunda)*
Round pigtoe *(Pleurobema sintoxia)*
Salamander mussel *(Simpsonaias ambigua)*
Sheepnose *(Plethobasus cyphyus)*
Snuffbox *(Epioblasma triquetra)*
Spike** *(Elliptio dilatata)*
Squaw foot** *(Strophitus undulatus)*
Threeridge** *(Amblema plicata)*
Wabash pigtoe *(Fusconaia flava)*
Wavy-rayed lampmussel** *(Lampsillis fasciola)*
White heelsplitter** *(Lasmigona complanata)*

**Live specimens found from 1998-2006

Fish of the Mohican River

Family: Clupeidae
- Gizzard shad (*Dorosoma cepedianum*)

Family: Cyprinidae
- Bigeye chub (*Notropis amblops*)
- Bluntnose minnow *(Pimephales notatus)*
- Central stoneroller *(Campostoma anomalum)*
- Common carp *(Cyprinus carpio)*
- Common shiner *(Luxilus cornutus)*
- Creek chub *(Semotilus atromaculatus)*
- Mimic shiner *(Notropis volucellus)*
- Redside dace *(Clinostomus elongates)*
- Sand shiner *(Notropis stramineus)*
- Silverjaw minnow *(Notropis buccatus)*
- Spotfin shiner *(Cyprinella spiloptera)*
- Streamline chub *(Erimystax dissimilis)*
- Striped shiner *(Luxilus chrysocephalus)*
- Striped shiner x Creek chub hybrid *(Luxilus chrysocephalus x Semotilus atromaculatus)*
- River chub *(Nocomis micropogon)*
- Rosyface shiner *(Notropis rubellus)*

Family: Catostomidae
- Black redhorse *(Moxostoma duquesnei)*
- Golden redhorse *(Moxostoma erythrurum)*
- Northern hogsucker *(Hypentelium nigricans)*
- River carpsucker *(Carpiodes cyprinus)*
- Shorthead redhorse *(Moxostroma macrolepidotum)*
- Silver redhorse *(Moxostoma anisurum)*
- White sucker *(Catostomus commersoni)*

Family: Ictaluridae
- Brown bullhead *(Ameiurus nebulosus)*
- Stonecat madtom *(Noturus flavus)*
- Yellow bullhead *(Ameriurus natalis)*

Family: Esocidae
- Northern pike *(Esox lucius)*

Family: Salmonidae
- Brown trout *(Salmo trutta)*

Family: Cottidae
- Mottled sculpin *(Cottus bairdi)*

Family: Centrarchidae
- Black crappie *(Pomoxis nigromaculatus)*
- Bluegill sunfish *(Lepomis macrochirus)*
- Green sunfish *(Lepomis cyanellus)*
- Green sunfish hybrid *(Lepomis cyanellus x hybrid)*
- Largemouth bass *(Micropterus salmoides)*
- Redear sunfish *(Lepomis microlophus)*
- Rock bass *(Ambloplites rupestris)*
- Smallmouth bass *(Micropterus dolomieu)*
- Spotted bass *(Micropterus punctulatus)*
- White crappie *(Pomoxis annularis)*

Family: Percidae
- Banded darter *(Etheostoma zonale)*
- Bluebreast darter *(Etheostoma camurum)*
- Eastern sand darter *(Ammocrypta pellucida)*
- Fantail darter *(Etheostoma flabellare)*
- Greenside darter *(Etheostoma blennioides)*
- Johnny darter *(Etheostoma nigrum)*
- Logperch *(Percina caprodes)*
- Rainbow darter *(Etheostoma caeruleum)*
- Saugeye *(Sander canadensis x Stizostedion vitreum)*
- Yellow perch *(Perca flavescens)*

Amphibians of the Mohican River

Family: Ambystomatidae
- Jefferson salamander (*Ambystoma jeffersonianum*)
- Spotted salamander (*Ambystoma maculatum*)
- Tiger salamander (*Ambystoma tigrinum*)

Family: Cryptobranchidae
- Eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*)

Family: Plethodontidae
- Northern two-lined salamander (*Eurycea bislineata*)
- Red-backed salamander (*Plethodon cinereus*)
- Northern ravine salamander (*Plethodon electromorphus*)
- Northern dusky salamander (*Desmognathus fucsus*)
- Long-tailed salamander (*Eurycea longicauda*)
- Northern spring salamander (*Gyrinophilus p. porphyriticus*)
- Northern ravine salamander (*Plethodon richmond*)
- Northern red salamander (*Pseudotriton r. ruber*)

Family: Proteidae
- Mudpuppy (*Necturus m. maculosus*)

Family: Bufonidae
- Eastern American toad (*Bufo americanus americanus*)
- Fowler's toad (*Bufo fowleri*)

Family: Hylidae
- Gray treefrog (*Hyla versicolor*)
- Northern spring peeper (*Pseudacris crucifer crucifer*)

Family: Ranidae
- Bull frog (*Rana catesbeiana*)
- Green frog (*Rana clamitans melanota*)
- Pickeral frog (*Rana palustrus*)
- Wood frog (*Rana sylvatica*)

Reptiles of the Mohican River

Family: Chelydridae
- Common snapping turtle (*Chelydra serpentina*)

Family: Emydidae
- Painted turtle (*Chrysemys picta*)
- Common map turtle (*Graptemys geographica*)
- Eastern box turtle (*Terrapene carolina*)
- Slider (*Trachemys scripta*)

Family: Trionychidae
- Spiny softshell (*Apalone spinifera*)

Family: Colubridae
- Eastern racer (*Coluber constrictor*)
- Milk snake (*Lampropeltis triangulum*)
- Midland rat snake (*Pantherophis spiloides*)
- Northern water snake (*Nerodia sipedon sipedon*)
- Eastern ribbon snake (*Thamnophis sauritus*)
- Common garter snake (*Thamnophis sirtalis*)

Family: Crotalidae
- Copperhead (*Agkistrodon contortrix*)

Mammals of the Mohican River

Family: Canidae
- Coyote (*Canis latrans*)
- Gray fox (*Urocyon cinereoargenteus*)
- Red fox (*Vulpes vulpes*)

Family: Castoridae
- Beaver (*Castor Canadensis*)

Family: Cervidae
- White-tailed deer (*Odocoileus virginianus*)

Family: Didelphidae
- Virginia opossum (*Didelphis virginiana*)

Family: Leporidae
- Eastern cottontail (*Sylvilagus floridanus*)

Family: Mephitidea
- Striped skunk (*Mephitis mephitis*)

Family: Muridae
- Deer mouse (*Peromyscus maniculatus*)
- Eastern harvest mouse (*Reithrodontomys humulis*)
- House mouse (*Mus musculus*)
- Meadow vole (*Microtus pennsylvanicus*)
- Muskrat (*Ondatra zibethicus*)
- Norway rat (*Rattus norvegicus*)
- Prairie vole (*Microtus ochrogaster*)
- Southern bog lemming (*Synaptomys cooperi*)
- Woodland vole (*Microtus pinetorum*)
- White-footed mouse (*Peromyscus leucopus*)

Family: Mustelidae
- Badger (*Taxidea taxus*)
- Least weasel (*Mustela nivalis*)
- Long-tailed weasel (*Mustela frenata*)
- Mink (*Mustela vison*)
- River otter (*Lutra canadensis*)

Family: Procyonidae
- Raccoon (*Procyon lotor*)

Family: Sciuridae
- Eastern chipmunk (*Tamias striatus*)
- Fox squirrel (*Sciurus niger*)
- Gray squirrel (*Sciurus carolinensis*)
- Red squirrel (*Tamiasciurus hudsonicus*)
- Southern flying squirrel (*Glacomys volans*)
- Thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*)
- Woodchuck (*Marmota monax*)

Family: Soricidae
- Least shrew (*Cryptotis parva*)
- Masked shrew (*Sorex cinereus*)
- Short-tailed shrew (*Blarina brevicauda*)
- Smoky shrew (*Sorex fumeus*)

Family: Talpidae
- Eastern mole (*Scalopus aquaticus*)
- Hairy-tailed mole (*Parascalops breweri*)
- Star-nosed mole (*Condylura cristata*)

Family: Vespertilionidae
- Big brown bat (*Eptesicus fuscus*)
- Eastern pipistrelle (*Pipistrellus subflavus*)
- Evening bat (*Nycticeius humeralis*)
- Hoary bat (*Lasiurus cinereus*)
- Indiana bat (*Myotis sodalist*)
- Keen's bat (*Myotis keenii*)
- Little brown bat (*Myotis lucifugus*)
- Red bat (*Lasiurus borealis*)
- Silver-haired bat (*Lasionycteris noctivagans*)

Family: Zapodidae
- Meadow jumping mouse (*Zapus hudsonius*)

List of Threatened and Endangered Plant and Animal Species of the Mohican River

PLANTS

Threatened

- Bearded wheat grass *(Elymus trachycaulus)*
- Leafy goldenrod *(Solidago squarrosa)*
- Lurking leskea *(Plagiothecium latebricola)*
- Mountain fringe *(Adlumia fungosa)*
- Thyme-leaved pinweed (*Lechea minor*)

Potentially Threatened

- Butternut *(Juglans cinerea)*
- Hairy pinweed *(Lechea villosa)*
- Long beech fern *(Phegopteris connectilis)*
- Narrow-leaved pinweed (*Lechea tenuifolia*)
- Round-fruited pinweed *(Lechea intermedia)*
- Silvery sedge *(Carex argyrantha)*
- Spotted coral root *(Coralloriza maculata)*
- Turk's cap lily *(Lilium superbum)*
- Western sunflower (*Helianthus occidentalis*)
- Woodland bulrush *(Scirpus expansus)*

MOLLUSKS

State and Federally Endangered

- Clubshell *(Pleurobema clava)*

Endangered

- Long-solid *(Fusconaia maculata maculata)*
- Rabbitsfoot *(Quadrula cylindrica)*
- Rayed bean *(Villosa fabalis)*
- Sharp-ridged Pocketbook *(Lampsilis ovata)*
- Sheepnose *(Plethobasus cyphyus)*
- Snuffbox *(Epioblasma triquetra)*

Threatened

- Black sandshell *(Ligumia recta)*

Species of Concern

- Elktoe (*Alasmidonta marginata*)
- Creek heelsplitter (*Lasmigona compressa*)
- Kidneyshell *(Ptychobranchus fasciolaris)*
- Purple wartyback *(Cyclonaias tuberculata)*
- Round pigtoe *(Pleurobema sintoxia)*

Species of Concern continued

- Salamander mussel (*Simpsonaias ambigua*)
- Wavy-rayed lampmussel *(Lampsilis fasciola)*

AMPHIBIANS

Endangered

- Eastern hellbender (*Cryptobranchus alleganiensis*)

FISH

Threatened

- Eastern sand darter *(Ammocrypta pellucida)*

Species of Concern

- Bluebreast darter *(Etheostoma Camurum)*

BIRDS

State Endangered & Federally Threatened

- Bald eagle (*Haliaeetus leucocephalus*)

Threatened

- Hermit thrush (*Catharus guttatus*)

Species of Concern

- Canada warbler (*Wilsonia canadensis*)
- Magnolia thrush (*Dendorica magnolia*)
- Northern waterthrush (*Seiurus noveboracensis*)
- Winter wren (*Troglodytes troglodytes*)

MAMMALS

State & Federally Endangered

- Badger (*Taxidea taxus*)
- Indiana bat *(Myotis sodalis)*
- Star-nosed mole (*Condylura cristata*)

Definitions of endangered species terminology may be found on page 32.

Water Quality and Stream Biodiversity

Some of the most important factors influencing the Scenic River designation determination include the biological diversity, stream habitat and water quality of the candidate stream. These parameters are reflected in the Scenic River designation criteria, which states that the stream must meet or exceed the Warmwater Habitat Use Designation as established by the Ohio EPA. The Ohio EPA utilizes several indices to evaluate stream habitat, aquatic macroinvertebrate communities and fish communities in rivers and streams throughout the state of Ohio. These indices are as follows:

- **Qualitative Habitat Evaluation Index (QHEI):** an objective method of measuring physical habitat conditions by examining and assigning numeric values to various attributes of the physical habitat including riparian corridor, substrate types, instream cover, geomorphology, pool and riffle development and others.

- **Index of Biological Integrity (IBI):** a means of objectively measuring and evaluating biological community performance based on the number of fish species found, the presence of certain indicator species, the numbers of individuals found and other characteristics of the fish community.

- **Modified Index of well being (MIwb):** an objective method of measuring and evaluating fish community performance. This methodology is a measure of fish community abundance and diversity using numbers and weight information.

- **Invertebrate Community Index (ICI):** the ICI is a method of evaluation applied to macroinvertebrate community performance and characteristics using parameters similar to the IBI.

Macroinvertebrates are highly effective barometers of a river's health. Negative environmental changes to their stream habitat directly threaten the existence of these sensitive creatures. Because they have varying tolerances for pollution, surveying can indicate potential problems.

Once evaluations of stream habitat, water quality, macroinvertebrate and fish communities have been completed, the above indices are used to evaluate the overall condition of a stream and apply the appropriate aquatic life use designation.

For purposes of stream evaluation to determine inclusion within the Ohio Scenic Rivers Program, several of the following aquatic life use designations are relevant.

- **Exceptional Warmwater Habitat (EWH):** this designation is for waters that can support and maintain an exceptional or unusual community of warmwater aquatic organisms having a species composition, diversity and functional organization comparable to 75 percent of the identified reference sites statewide. These are some of most diverse and highest quality biological communities found in Ohio's rivers and streams.

- **Warmwater Habitat (WWH):** this designation is for waters that can support and maintain a balanced, integrated and adaptive community of warm water aquatic organisms having a species composition, diversity and functional organization comparable to 25 percent

of the identified reference sites within each of the following ecoregions: Erie-Ontario Lake Plain, Western Allegheny Plateau and Eastern Corn Belt.

- **Coldwater Habitat (CWH):** this designation is for waters which support assemblages of coldwater organisms and/or waters that are stocked with salmonids with the purpose of providing a year-round put and take fishery, as sanctioned by ODNR's Division of Wildlife.

- **Primary Contact Recreation (PCR):** this designation pertains to bodies of water which have suitable depths for full-body immersion and poses minimal threat to public health during the recreation season.

- **State Resource Water (SRW):** are waters that lie within the national, state and/or metropolitan park systems.

- **Agricultural Water Supply (AWS):** these waters are suitable for irrigation and livestock watering without treatment.

- **Industrial Water Supply (IWS):** these waters are suitable for commercial and industrial purposes without treatment.

According to a study by the Ohio EPA in 1998, the Clear Fork of the Mohican River has earned the following designations: SRW, CWH, WWH, AWS, IWS and PCR. The main stem of the Mohican River has earned the following: SRW, WWH, AWS, IWS, PCR.

The Ohio EPA, Division of Surface Water's Ecological Assessment Unit conducted a comprehensive survey of the Clear Fork in 1998 and several partial studies of two sites on the main stem from 1982-1998. The Ohio EPA utilizes biological, chemical and physical monitoring during biosuveys. The results of the Clear Fork survey were published in a document titled, *1998 Biological and Water Quality Study of the Black Fork, Clear Fork, Rocky Fork and Jerome Fork of the Mohican River and selected tributaries* in June 2000. It is available as OEPA Technical Report No. MAS/1999-12-2. The results from the main stem of the Mohican River may be obtained directly from the Ohio EPA, Division of Surface Water.

Macroinvertebrate communities for the two sites sampled on the Clear Fork, located between the Pleasant Hill Reservoir and the confluence of the Clear Fork and Black Fork, ranged from very good to exceptional. The site on the main stem, located just south of Greer, consistently scored in the exceptional range for the six studies that were conducted over a 12-year period.

Total Qualitative **E**phemeroptera—mayflies—, **P**lecoptera—stoneflies, and **T**richoptera—caddisflies (EPT) and Qualitative Community Tolerance Values (QCTV) scores for the potential designated segments were consistently among the highest scores for the Clear Fork survey.

In 1998, a total of 80 taxa were collected from the two sites on the Clear Fork with an average of 53 total taxa and 19 qualitative EPT per site. The cumulative data from the Mohican River main stem studies showed an average of 72 total taxa and 19 qualitative EPT per study.

The macroinvertebrate study conducted in 1998 indicated that the Clear Fork met and/or exceeded the criteria for warmwater habitat within the Erie-Ontario Lake Plains ecoregion.

Results from Ohio EPA's 1998 study showed that the Clear Fork was designated as coldwater habitat from the Pleasant Hill Reservoir (river mile 4.8) to Pine Run (river mile 0.2) by the put-and-take stocking of brown trout by the Division of Wildlife. The Ohio EPA revised the criteria for coldwater habitat in 1999 and the Clear Fork no longer meets the criteria, based solely on the trout stocking alone.

Biological sampling results showed that the percentage of coldwater fish varied between sites, from less than 1 percent to more than 27 percent. Only two coolwater macroinvertebrate taxa were collected sporadically throughout the study area. Ohio EPA's results indicated that the free flowing portions of the Clear Fork were better suited to the warmwater habitat designation. In 2000, the Ohio EPA proposed the new warmwater habitat designation for the Clear Fork.

The most recent data collected from the Mohican River's main stem indicates that the river meets or exceeds the criteria for exceptional warmwater habitat. In 1995, Division of Natural Areas and Preserves staff collected bluebreast darter and Eastern sand darter; both species are found in other state scenic rivers. Further, in 1998, Ohio EPA data collection produced species, such as streamline chub, bigeye chub, mimic shiner and black redhorse. These species typically live in high quality streams. However, there has not been a comprehensive study conducted by the Ohio EPA to definitively designate the Mohican as exceptional warmwater habitat. It is currently designated as warmwater habitat by the water quality standards for the Western Allegheny Plateau, as determined by the Ohio EPA in 1978.

According to fish community studies conducted by the Ohio EPA on the Clear Fork during 1998, a range of very good to good was found at river mile 4.0 and a score of good was determined at river mile 0.4. The Ohio EPA conducted two fish assemblages in 1998 on the main stem of the Mohican River at river mile 16.6. The average of the two samples showed a range of very good to good. The mean IBI and mean MIwb scores on the Clear Fork and the main stem meets and/or exceeds the criteria for warmwater habitat.

Five surface water samples and two sets of microbiological analyses were taken by the Ohio EPA at river miles 3.9, 3.7 and 0.33 on the Clear Fork during the 1998 survey and analyzed to determine pollutant concentrations. The results of these tests were favorable. All of the survey data indicated good water quality that either met or exceeded warmwater habitat.

Regular surface water samples are taken at river mile 16.4 on the main stem by the Ohio EPA to provide information on the ambient water quality. However, this information has not currently been analyzed. Examining the most recent information on the macroinvertebrate and fish communities observed in the main stem would support a water quality rating that meets and/or exceeds the standards for warmwater habitat. Any impacts to water quality would be reflected by current macroinvertebrate and fish data.

TABLE 1A – Clear Fork of the Mohican River Macroinvertebrate Sampling Results

River mIle	Sample year	Qualitative Taxa	Total Taxa	Qual. EPT	Qual. CTV	ICI**	Evaluation
4.0	1998	43	43	13	40.9	No data	Very good
0.3	1998	63	43	24	42.7	No data	Exceptional

*EPT= total Ephemeroptera—mayflies, Plecoptera—stoneflies and Tricoptera—caddisflies

**ICI= Invertebrate Community Index. This is the bio-criteria figure used to classify rivers.

For the Erie-Ontario Lake Plains Ecoregion where the Clear Fork of the Mohican River is located:

- An ICI score of at least 22 qualifies a river for modified warmwater habitat
- An ICI score of at least 34 qualifies a river for warmwater habitat
- An ICI score of at least 46 qualifies a river for exceptional warmwater habitat

TABLE 1B – Mohican River Macroinvertebrate Sampling Results

River mIle	Sample year	Quantitative Taxa	Qualitative Taxa	Total Taxa	Qualitative EPT	ICI**	Evaluation
16.4	1982	38	39	56	16	52	Exceptional
16.4	1987	33	71	83	19	50	Exceptional
16.4	1989	46	63	81	27	46	Exceptional
16.4	1990	49	40	67	17	46	Exceptional
16.4	1992	48	58	79	19	56	Exceptional
16.4	1994	44	46	65	17	56	Exceptional

*EPT= total Ephemeroptera—mayflies, Plecoptera—stoneflies and Tricoptera—caddisflies

**ICI= Invertebrate Community Index. This is the bio-criteria figure used to classify rivers.

For the Western Allegheny Plateau Ecoregion where the main stem of the Mohican River is located:

- An ICI score of at least 30 qualifies a river for modified warmwater habitat
- An ICI score of at least 36 qualifies a river for warmwater habitat
- An ICI score of at least 46 qualifies a river for exceptional warmwater habitat

TABLE 2A – Clear Fork Fish and Aquatic Habitat Sampling Results

Bio-criteria for the Erie-Ontario Lake Plains Ecoregion where the Clear Fork of the Mohican River is shown in the table below:

River mlle	Sample year	Mean no. of fish species	Cumulative # of species	Mean relative # of species	Mean relative weight	QHEI	Mean IBI	Mean MIwb	Evaluation
4.0 (w)	1998	25.0	25	523.2	35.2 km	80.5	46	8.7	Very good/ good
0.4 (w)	1998	24.5	30	661.5	26.2	77.0	40	8.0	Good

Index Site Type	WWH	EWH	MWH
IBI- wading	40	50	24
IBI - boat	40	48	24
MIwb- wading	7.9	9.4	5.8
MIwb- boat	8.7	9.6	5.8

TABLE 2B – Mohican River Fish and Aquatic Habitat Sampling Results

Bio-criteria for the Western Allegheny Plateau Ecoregion where the main stem of the Mohican River is shown in the table below:

River mlle	Sample year	Mean no. of fish species	Cumulative # of species	Mean relative # of species	Mean relative weight	QHEI	Mean IBI	Mean MIwb	Evaluation
16.6 (b)	1998	n/a	n/a	n/a	n/a	65	48	9.1	Very good/ good

Index Site Type	WWH	EWH	MWH
IBI- wading	44	50	24
IBI - boat	40	48	24
MIwb- wading	8.4	9.4	5.5
MIwb- boat	8.6	9.6	5.5

Current Land and Water Resources

Current Land Use

The water quality and biodiversity of a stream are both largely dependent upon the land uses within the watershed. Land use in the Mohican River watershed is predominantly agricultural. According to 1994 ODNR land cover data, the following details the approximate percentages of major land use categories within the Mohican River watershed.

58.6 percent – agriculture
36.9 percent – woodland
2.2 percent – urban
2.4 percent – water and wetlands

The following details the approximate percentages of major land use categories within 300 feet on either side of the lower Clear Fork and the entire Mohican River.

16.0 percent – agriculture
64.2 percent – woodland
0.2 percent – urban
20.0 percent – water and wetlands

Analyzing land use patterns has shown that a relatively low amount of urban land use and associated impervious cover, such as rooftops, asphalt and concrete surfaces, may begin to degrade water quality and lead to a decline in species diversity. A number of studies suggest impervious cover measurements as low as 8-10 in a stream's watershed may result in a loss of sensitive species and biodiversity.

Even though the watershed has low levels of impervious surfaces, impacts may still occur. According to the Ohio EPA, some of these impacts include sedimentation from agriculture and construction sites, industrial pollution and wastewater treatment facilities. These issues may be mitigated by ongoing educational programs about water quality and improved facilities for stormwater and wastewater treatment which meet current EPA regulations.

Groundwater Resources

The Wisconsinan glacier (70,000 to 10,000 years ago) deposited a large percentage of the till and alluvial material found in the Mohican River corridor. The quantity and quality of these deposits affect the groundwater that is available for use today.

Some of the best aquifers are those that are located in stream and river valleys. These aquifers have thick deposits of sand and gravel which absorb, hold and disperse water. Sandstone, coarse sand and gravel are the major sources of groundwater in the Mohican watershed.

Both the Black Fork and Clear Fork of the Mohican flow through Richland and Ashland counties. These river valleys in Richland County are characterized by moderately permeable sand and gravel deposits interbedded with clay till. Yields of 25 to 100 gallons per minute are possible in these deposits.

For example, Richland County's 130,000 residents use approximately 7 million gallons of

groundwater per day. In Ashland County, yields of 5 to 20 gallons per minute are available in the sandstone shale bedrock at depths of 45 to 165 feet deep. The sand and gravel deposits have the potential to yield 100 to 1,000 gallons per minute at less than 100 feet in depth. With a population around 50,000, Ashland County uses nearly 4 million gallons of groundwater per day.

The same types of aquifers are evident in the river valley through Holmes, Knox and Coshocton counties. Nearly all of the groundwater usage in the Mohican River valley is for private residential use or agricultural purposes. The most populated area close to the corridor is Loudonville, which is located on the Black Fork. Loudonville has nearly 3,000 residents, who use almost 300,000 gallons of groundwater per day.

Excessive groundwater withdrawals may negatively impact stream recharge which reduces stream flow. Reduced stream flows may subsequently impact aquatic species and biodiversity. While there are groundwater withdrawals occurring in the Mohican watershed, it does not appear to be having any negative effect on the hydrology of the river and its aquatic communities.

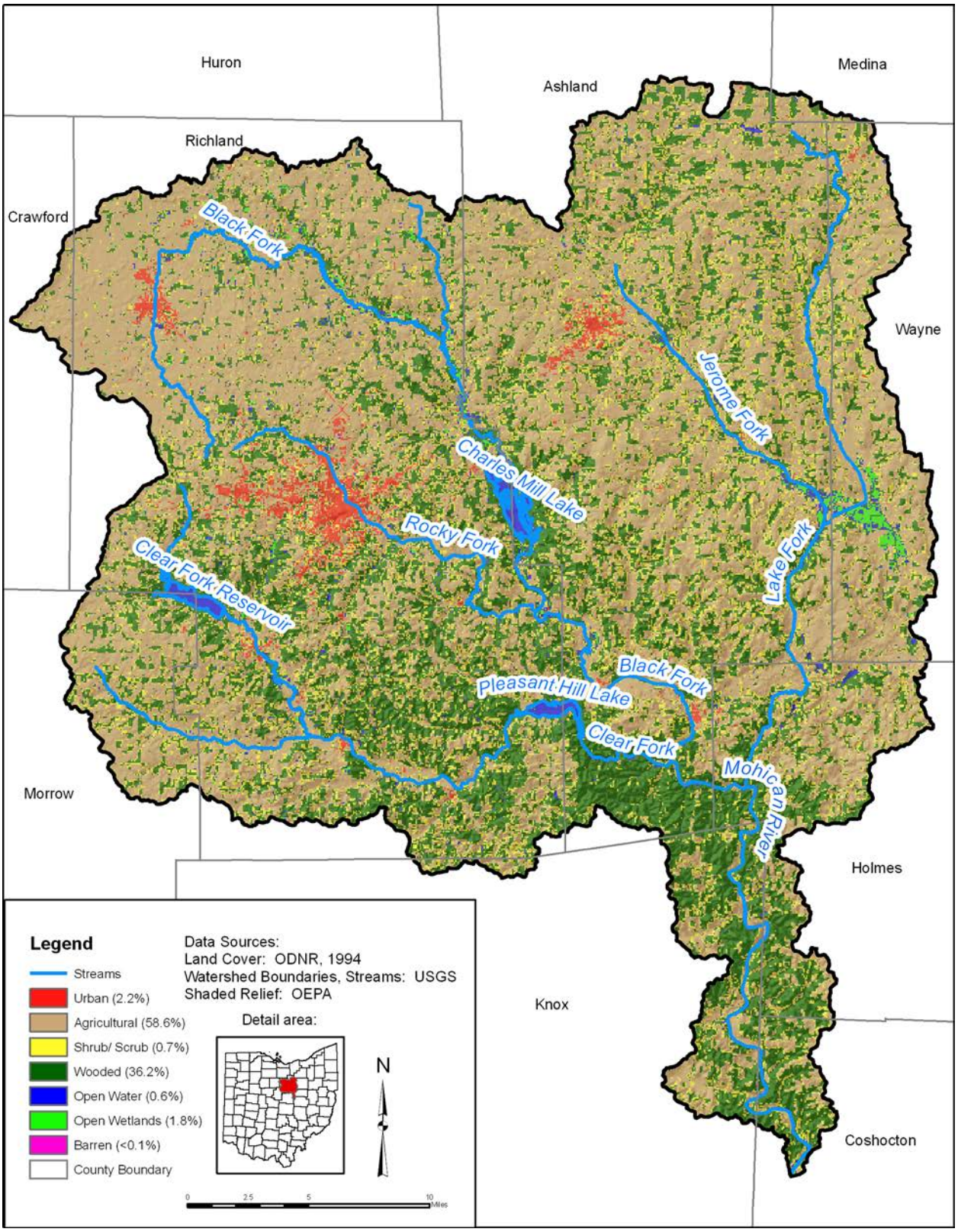


Figure 4 - Land Cover

Corridor Protection

Riparian Forest Buffers

Excellent water quality and diverse wildlife habitats present in the Mohican River corridor are due to a number of contributing factors. The most important is the presence of an intact system of deciduous riparian forest buffers along the river. Therefore, protecting the maximum amount of riparian forest buffers along the Mohican River should be one of the highest priorities.

Preserving riparian forest buffers results in a number of benefits to water quality. These buffers help protect the Mohican River from the effects of nonpoint source pollution. Trees and understory shrubs absorb nonpoint pollutants from overland runoff and from the near surface groundwater zone.

Two of the major nonpoint pollutants removed by forest buffers are nitrogen and phosphorus. If too much of these nutrients are allowed to enter the river, they will cause excessive algae growth. It is important to avoid an over abundance of algae because it reduces light penetration which causes submerged aquatic vegetation to die. These plants are essential to the survival of fish and other aquatic organisms. The problem is compounded by the use of nearly all available oxygen during the subsequent decomposition process of the algae. Fish kills usually result in these situations.

Extensive studies have determined that in relatively flat areas with slopes of 4 percent or less, a buffer strip as narrow as 50 feet can remove the majority of nitrogen and phosphorous from surface and subsurface runoff. This should be considered the minimum width needed for small tributary streams.

Forest buffers with a minimum width of 120 feet are needed on steeper slopes and for rivers, like the Mohican, which have a drainage area of more than 20 square miles. This 120-foot distance—measured on each river bank in a horizontal plane outward from the ordinary high water mark (also known as bank full)— has been determined to be the minimum width buffer that is necessary for trees to be wind firm and create a forest-like habitat.

Riparian forest buffers of 120 feet or more generally support a greater variety of wildlife

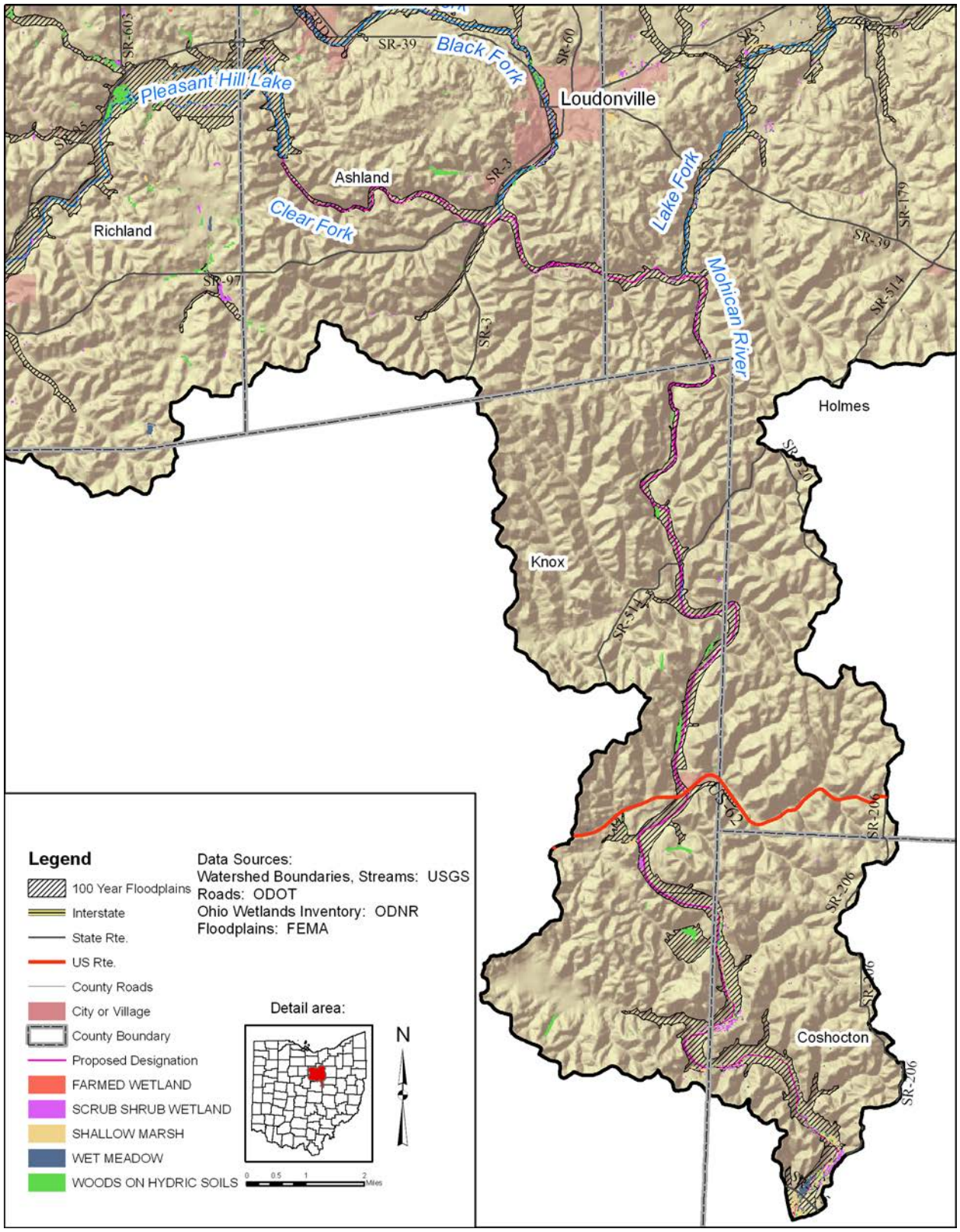


Figure 5 - Floodplains and Wetlands

than upland forests. This is due to many habitat conditions that occur at the edge and interior of the riparian buffer. The variety of plants and trees in these areas offer diverse habitats providing wildlife with needed food and shelter. The linear nature of riparian forest buffers is preferred by wildlife over fragmented woodlots because of the safety provided to animals as they move from area to area. Where conditions are suitable in riparian forest buffers, vernal pools form. These temporary aquatic habitats are important breeding sites for frogs, toads and salamanders.

A riparian forest buffer width of 300 feet or more is preferable where maximum water quality protection benefits are desired. This width is needed in areas where steep slopes or highly erodable soils are present. The excellent water quality of the Clear Fork and main stem of the Mohican River and its pending status as an Ohio Scenic River warrants protection of the riparian forest buffer to widths of at least 300 feet.

Protecting the riparian forest buffers along the Mohican River will provide many additional functions and benefits related to maintaining healthy and diverse aquatic populations. Tree roots help stabilize stream banks; uncut roots provide shelter for fish and macroinvertebrates. The leaves that fall into the stream are the primary food source for the macroinvertebrates that feed on the leaves and shred them into smaller pieces. This creates a foundation for the aquatic food chain, which is vital in supporting a healthy population of minnows, darters and larger game fish like smallmouth bass.

Forested buffer zones also help to moderate water temperatures in the summer. Shade reduces water temperature fluctuations, which decreases the stress on aquatic organisms. Reducing exposure to direct sunlight reduces the demand by aquatic organisms for dissolved oxygen.

The riparian forest buffers along the Mohican River also perform the vital function of filtering out siltation, originating from cropland and construction site erosion. This silt is considered a nonpoint pollutant, which if allowed to occur will degrade the aquatic environment. Silt will settle out and fill in the critical spaces within the stream substrates smothering macroinvertebrates and reducing the ability of fish to successfully spawn. Preventing embedded substrates by protecting riparian forest buffers is vital to the continued aquatic diversity of the Mohican River.

Floodplains

Floodplains are vital to maintaining a stable river channel. It is important to protect the floodplains along the Mohican River in order to maintain the functions they provide.

Floodplains provide storage capacity during periods of high water, thereby moderating flood levels and current velocities. A reduction in floodplains will begin to adversely impact the river through increased erosion and turbidity, destabilized river banks, substrate scour and down cutting of the stream bed. All of which have an obvious negative impact on water quality and adversely impact the aquatic diversity.

Protecting floodplains is an important goal for the preservation of the river. Loss of access to the floodplains on the Mohican River, through either entrenchment, filling or the building of dikes, would result in drastic changes to the stream morphology.

Wetlands

The benefits of protecting wetlands have been well documented. They filter excess nutrients from surface runoff. Wetlands contribute to groundwater recharge and gradually release water. Wetland areas also serve as storage areas and help to moderate the impacts of flooding. They produce some of the most diverse habitat for both plants and animals.

Steep Slopes

There are steep slopes along many areas of the Clear Fork and main stem of the Mohican River corridor. If left in their natural condition, steep slopes usually remain stable. It is in areas where slopes are cleared of trees that problems occur. When the stability provided by the tree roots are lost due to clearing, the steep slopes

are susceptible to surface erosion and bank slumping. In severe cases, rotational slides may occur, creating major problems. Protecting the steep slope areas along the Mohican River will help to reduce impacts to water quality and aquatic diversity resulting from erosion and subsequent siltation.

Tributary Streams

The role of tributary streams in protecting the water quality of the Mohican River cannot be overlooked. Land use activities on the tributaries will either contribute to or detract from the overall quality of the river corridor.

Due to their relatively small size, streams are more easily impacted than large rivers. Protecting riparian forest buffers, floodplains, wetlands and steep slopes along the tributary streams is also important in order to maintain a healthy stable condition that is necessary to provide good water quality and aquatic habitat.

Present and Potential Threats

According to the Ohio EPA, the water quality of the Mohican River has been impacted from a variety of sources in its 1,000 square mile watershed.

The following was excerpted from Ohio EPA Technical Report MAS/1999-12-2 and describes prior incidences in the watershed:

The majority of reported instances were sewage bypasses released from Shelby and Ashland wastewater treatment plants. (Spills) typically result from hydraulic overloading caused by excessive inflow and infiltration in the collection system, especially during storm events. Fortunately, response teams are often able to contain and recover the majority of these materials before they cause environmental damage. Other spills have been reported from industrial facilities or incidents relating to damaged or failing equipment, or broken or leaking product pipelines.

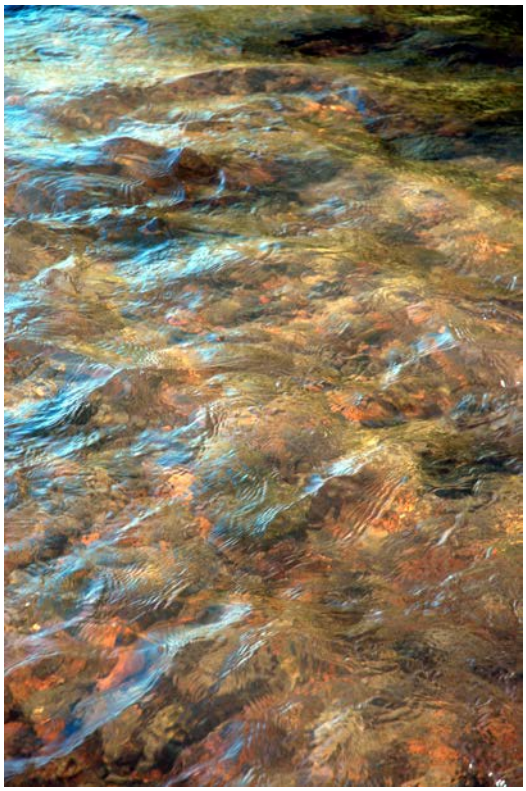
Spills fall under the jurisdiction of the Ohio EPA and are investigated by its Division of Emergency and Remedial Response.

The Black Fork tributary continues to present the most potential for negative impacts to the Mohican River. The following is an excerpt from the 1999 Ohio EPA report.

Portions of the Mohican River and its tributaries are potentially impacted by a combination of point and nonpoint sources of pollution. The Rocky Fork, upper part of the Black Fork and Jerome Fork sub-basins receive significant amounts of effluent from industrial and municipal point sources. Effluents from municipal wastewater treatment plants, separate sewer overflows and plant bypasses contribute to documented impairments in the system.

Potential nonpoint source impacts within the watershed include sedimentation from agricultural lands, improperly managed silviculture (forest harvesting operations), nutrient enrichment from livestock operations and failed home sewage systems. Urban storm sewers, old unregulated storm water discharges from industrial sites, spills, and leachate from closed landfills and old township dumps have contributed to sediment contamination in the Rocky Fork, Black Fork and urban streams in the Jerome Fork.

Other potential threats include incidents from oil and gas operations in the Mohican River corridor, such as holding tank overflows and leaking pipelines. ODNR's Division of Mineral Resource Management has legal authority over oil and gas explorations and operations.



Current Conservation Efforts

The Clear Fork and main stem of the Mohican River have a unique geologic and cultural history which has, in part, protected this high quality river.

The Clear Fork corridor is almost completely owned by the State of Ohio and managed by ODNR. The lack of development has enabled the stream to retain its excellent water quality, while offering recreational use of the corridor. Although there is a private in-holding in the gorge, ODNR has named it a priority acquisition, should it ever be offered by a willing seller.

ODNR owns two additional properties on the main stem, which comprise the 408-acre Mohican River Wildlife Area. A 121-acre parcel is located in the village of Brinkhaven, and the other parcel, 287 acres, is located just south of the village of Cavallo.

The U.S. Army Corps of Engineers provides corridor protection for the Mohican River. This federal agency holds flood easements on all of the properties below the 890 foot elevation, protecting the flood pool for the Mohawk Dam. These easements prevent the filling of floodplain and construction of permanent encroachments.

The Muskingum Watershed Conservancy District owns land in the corridor including property which is located in the Mohawk Dam flood pool. They also own land near the confluence of the Mohican and Kokosing rivers.

The mission of the Knox County Park District includes protecting the Kokosing and Mohican river corridors for water quality, wildlife and recreation. The park district, along with the Owl Creek Conservancy, a local land trust, is working with landowners to protect unique and environmentally sensitive areas.

One of the benefits of Scenic River status is the opportunity to use the designation to enhance protection efforts in the river corridor.

Three approaches are used in scenic river protection: landowner assistance, education and water resource protection, and public project review.

Landowner assistance and education are vital components of river protection. Ohio Scenic Rivers staff advise landowners about streamside protection techniques and provide technical assistance in river corridor restoration.

Water resource protection balances the relationship between riparian forest, aquatic habitat and water quality. The Ohio Scenic Rivers Program coordinates volunteer-based stream quality monitoring . The division also works with federal, state and local agencies to reduce nonpoint source pollution which causes serious environmental damage to Ohio's waterways.

Reviewing projects is a component in scenic river preservation. The possible environmental impact of the construction of dams, bridges, roads or other projects is carefully considered. ODNR has the authority to approve publicly funded projects on designated scenic rivers outside municipal corporation limits.

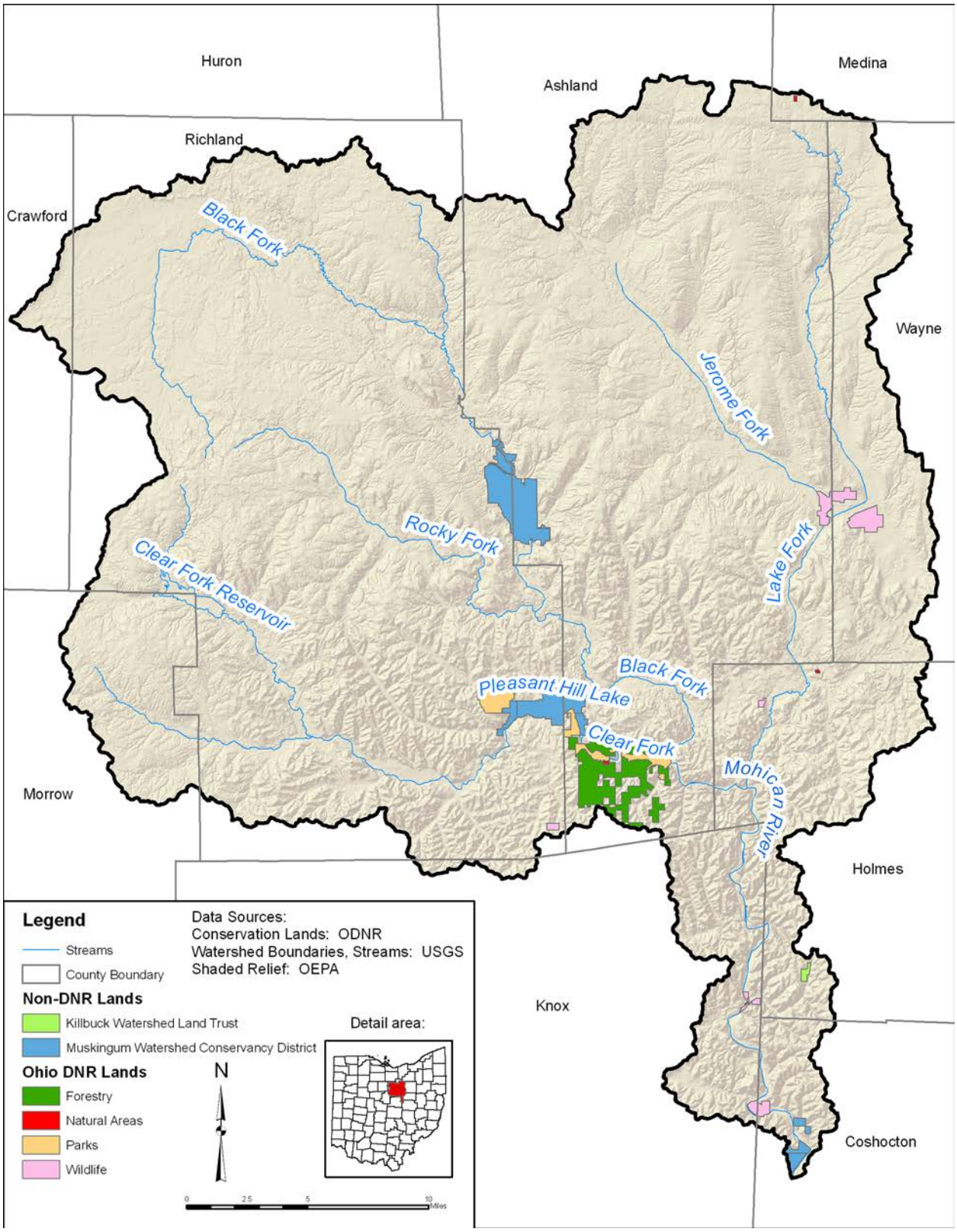


Figure 6 - Conservation Lands

Mohican State Scenic River Designation Criteria Findings

Criteria 1: For maximum benefit, the total length of the designated stream may be no less than 10 miles; however, sections of the river may be so divided that other river designations are possible. No section may be less than 5 miles.

Finding: The total length of the Clear Fork and the Mohican River segments studied is 32.3 miles.

Criteria 2: At least 75 percent of the shoreline must be free flowing in natural condition.

Finding: The proposed designated river areas are considered 100 percent free flowing. There is an old low head dam on the Mohican River in Brinkhaven, which is in a dilapidated condition. Although it does not pool water, broken concrete remains.

Criteria 3: At least 25 percent of the shoreline of the designated section should be in 300 feet of forest cover.

Finding: The proposed designated river areas have 63 percent forest cover 300 feet in width. This information was determined using the latest land cover data.

Criteria 4: The designated section should be accessible by canoe or trail during the normal recreational season.

Finding: The Clear Fork and Mohican River segments are highly accessible during the normal recreation season.

Criteria 5: No more than 50 percent of the adjacent roadways may be closer than 300 feet from the river's banks.

Finding: Approximately 38 percent of the proposed river segments have roads within 300 feet of the edge of the river. This information was determined using the latest land cover data.

Criteria 6: Industries may not be located within 300 feet of the river and must be adequately screened out of sight and hearing from the river and associated use areas.

Finding: Currently, no industries are located within 300 feet of the proposed designated areas.

Criteria 7: Existing water quality must meet or exceed the water quality criteria for aquatic life/ warmwater fisheries.

Finding: The entire proposed river segment has received the use designation of warmwater habitat from the Ohio Environmental Protection Agency.

Criteria 8: Pan or game fish species should be present in 75 percent or more of the designated section.

Finding: Both pan and game fish are present in 100 percent of the proposed segment.

Recommendation

The entire 32.3 river miles of the Clear Fork of the Mohican River from the base of the Pleasant Hill Dam to the confluence with the Black Fork of the Mohican River and main stem of the Mohican River from the confluence of the Clear Fork and Black Fork to the confluence with the Kokosing State Scenic River are recommended for Scenic River designation.

Appendix

Appendix A: The Ohio Wild, Scenic and Recreational River Act

Section 1517.14

As used in sections 1517.14 to 1517.18 of the Revised Code, "watercourse" means a substantially natural channel with recognized banks and bottom, in which a flow of water occurs, with an average of at least 10 feet mean surface water width and at least 5 miles of length. The director of natural resources or his representative may create, supervise, operate, protect and maintain wild, scenic and recreational river areas under the classifications established in section 1517.15 of the Revised Code. The director or his representative may prepare and maintain a plan for the establishment, development, use and administration of those areas as a part of the comprehensive state plans for water management and outdoor recreation. The director or his representative may cooperate with federal agencies administering any federal program concerning wild, scenic or recreational river areas.

The director may propose for establishment as a wild, scenic or recreational river area a part or parts of any watercourse in this state, with adjacent lands, which in his judgment possesses water conservation, scenic, fish, wildlife, historic or outdoor recreation values which should be preserved, using the classifications established in section 1517.15 of the Revised Code. The area shall include lands adjacent to the watercourse in sufficient width to preserve, protect and develop the natural character of the watercourse, but shall not include any lands more than 1,000 feet from the normal waterlines of the watercourse unless an additional width is necessary to preserve water conservation, scenic, wildlife, historic or outdoor recreation values.

The director shall publish his intention to declare an area a wild, scenic or recreational river area at least once in a newspaper of general circulation in each county, any part of which is within the area, and shall send written notice of his intention to the legislative authority of each county, township and municipal corporation and to each conservancy district established under Chapter 6101. of the Revised Code, any part of which is within the area, and to the director of transportation, the director of development, the director of administrative services, and the director of environmental protection. The notices shall include a copy of a map and description of the area.

After 30 days from the last date of publication or dispatch of written notice as required in this section, the director shall enter a declaration in his journal that the area is a wild, scenic or recreational river area. When so entered, the area is a wild, scenic or recreational area. The director, after 30 days' notice as prescribed in this section and upon the approval of the recreational and resources commission, may terminate the status of an area as a wild, scenic, or recreational river area by an entry in his journal.

Declaration by the director that an area is a wild, scenic or recreational river area does not authorize the director or any government agency or political subdivision to restrict the use of land by the owner thereof or any person acting under his authority or to enter upon the land.

The chief of the division of natural areas and preserves or his representative may participate in watershed-wide planning with federal, state and local agencies in order to protect the values of wild, scenic and recreational river areas.

Section 1517.15

As used in this section, "impoundment" means the reservoir created by a dam or other artificial barrier across a watercourse that causes water to be stored deeper than and generally beyond the banks of the natural channel of the watercourse during periods of normal flow, but does not include water stored behind rock piles, rock riffle dams and low channel dams where the depth of water is less than 10 feet above the channel bottom and is essentially confined within the banks of the natural channel during periods of normal stream flow. In creating wild, scenic or recreational river areas, the director of natural resources shall use the following classifications:

(A) "Wild river areas" to include those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted, representing vestiges of primitive America;

(B) "Scenic river areas" to include those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads;

(C) "Recreational river areas" to include those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Section 1517.16

No state department, state agency or political subdivision shall build or enlarge any highway, road, or structure or modify or cause the modification of the channel of any watercourse within a wild, scenic or recreational river area outside the limits of a municipal corporation without first having obtained approval of the plans for the highway, road, or structure or channel modification from the director of natural resources or his representative. The court of common pleas having jurisdiction, upon petition by the director, shall enjoin work on any highway, road, or structure or channel modification for which such approval has not been obtained.

Section 1517.17

The chief of the division of natural areas and preserves may administer federal financial assistance programs for wild, scenic and recreational river areas. The director of natural resources may make a lease or agreement with a political subdivision to administer all or part of a wild, scenic or recreational river area. The director may acquire real property or any estate, right or interest therein for protection and public recreational use as a wild, scenic or recreational river area.

The chief may expend funds for the acquisition, protection, construction, maintenance, and administration of real property and public use facilities in wild, scenic or recreational river areas when the funds are so appropriated by the general assembly. The chief may condition such expenditures, acquisition of land or easements, or construction of facilities within a wild, scenic, or recreational river area upon adoption and enforcement of adequate floodplain zoning rules.

Section 1517.18

The director of natural resources shall appoint an advisory council for each wild, scenic or recreational river area, composed of not more than 10 persons who are representative of local government and local organizations and interests in the vicinity of the wild, scenic or recreational river area, who shall serve without compensation. The chief of the division of natural areas and preserves or his representative shall serve as an ex officio member of each council.

The terms of all members serving on any advisory council under this section on the effective date of this amendment 20, 1994, shall end on January 31, 1995. The director shall appoint new members to serve on each council for terms beginning on February 1, 1995, provided that a member serving on a council on the effective date of this amendment 20, 1994 may be appointed to such a new term. The initial member appointed to each council shall serve for terms of not more than three years, with the terms of not more than four members of any council ending in the same year. Therefore, terms of office shall be for three years commencing on the first day of February and ending on the last day of January.

Each council shall advise the chief on the acquisition of land and easements and on the lands and waters that should be included in a wild, scenic or recreational river area or a proposed wild, scenic or recreational river area, facilities therein, and other aspects of establishment and administration of the area that nay affect the local interest.

Section 1513.02

(B) The chief, by rule, may designate as unsuitable for coal mining natural areas maintained on the registry of natural areas of the department of natural resources pursuant to Chapter 1517 of the Revised Code, wild, scenic or recreational river areas designated pursuant to that chapter, publicly owned or dedicated parks, and other areas of unique and irreplaceable natural beauty or condition, or areas within specified distances of a public road, occupied dwelling, public building, school, church, community or institutional building, public park, or cemetery. Such a designation may include land adjacent to the perimeters of those areas that may be necessary to protect their integrity.

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Appendix C:
Endangered Species Definitions

WILDLIFE

Endangered - A native species or subspecies threatened with extirpation from the state. The danger may result from one or more causes, such as habitat loss, pollution, predation, interspecific competition, or disease.

Threatened - A species or subspecies whose survival in Ohio is not in immediate jeopardy, but to which a threat exists. Continued or increased stress will result in its becoming endangered.

Species of concern - A species or subspecies which might become threatened in Ohio under continued or increased stress. Also, a species or subspecies for which there is some concern but for which information is insufficient to permit an adequate status evaluation. This category may contain species designated as a furbearer or game species but whose statewide population is dependent on the quality and/or quantity of habitat and is not adversely impacted by regulated harvest.

Special interest - A species that occurs periodically and is capable of breeding in Ohio. It is at the edge of a larger, contiguous range with viable population(s) within the core of its range. These species have no federal endangered or threatened status, are at low breeding densities in the state, and have not been recently released to enhance Ohio's wildlife diversity. With the exception of efforts to conserve occupied areas, minimal management efforts will be directed for these species because it is unlikely to result in significant increases in their populations within the state.

RARE PLANTS

Endangered – A native Ohio plant species may be designated endangered if, based on its known status in Ohio, one or more of the following criteria apply:

- the species is a federal endangered species extant in Ohio
- the natural populations of the species in Ohio are limited to three or fewer occurrences
- the distribution of the natural populations of the species in Ohio is limited to a geographic area delineated by three or fewer U.S. Geological Survey 7.5 minute quadrangle maps
- the total number of plants in all the natural populations of the species in Ohio is limited to 100 or fewer individual, physically unconnected plants.

Threatened – A native Ohio plant species may be designated threatened if, based on its known status in Ohio, one or more of the following criteria apply:

- the species is a federal threatened species extant in Ohio but not on the state endangered species list
- the natural populations of the species in Ohio are limited to no less than four nor more than 10 occurrences
- the distribution of the natural populations of the species in Ohio is limited to a geographic area delineated by no less than four nor more than seven U.S. Geological Survey 7.5 minute quadrangle maps.

Potentially threatened – A native Ohio plant may be designated potentially threatened if one or more of the following criteria apply:

- the species is extant in Ohio and does not qualify as a state endangered or threatened species, but it is proposed federal endangered or threatened species or a species listed in the Federal Register as under review for such proposal.
- the natural populations of the species are imperiled to the extent that the species could conceivably become a threatened species in Ohio within the foreseeable future.
- the natural populations of the species, even though they are not threatened in Ohio at the time of designation, are believed to be declining in abundance or vitality at a significant rate throughout all or large portions of the state.