Our Past

"The Rock River was a beautiful country. I loved my towns, my cornfields, and the home of my people. I fought for it. It is now yours. Keep it as we did."

~ Makataimeshekiakiak (Black Hawk)
Chief of the Sac (Sauk) Nation

Our legacy

The rich soils and abundant rivers, lakes and wetlands of the Rock River Basin are our inheritance from ancient seas, mountains, and more recent continental glaciers. Looking at the historical timeline, together with the facts and trends discussed in this report, we haven't done a commendable job during our first 150 years in protecting our Basin's natural resources. How we manage and protect our natural resources will determine the quality of life and the strength of our economy today and in the future.

Geology & Landforms

Ancient oceans and mountain ranges once covered the Basin. The ancient ocean deposits solidified, mountains arose and then mostly eroded away, more than 500 million years ago. These ancient rock formations form the bedrock foundation of our Basin. About 20,000 years ago the last glaciers came down from Canada and ground slowly through the Basin.

Mile high glaciers plowed across the land to shape the landscape we see today - rolling hills, gentle plains, with rivers and lakes dotting the countryside. The glaciers also left behind other features, such as marshes, moraines and an extensive field of drumlins. These long, egg shaped hills are common in our Basin. Towards the southeastern area of the Basin, lies the junction of two glacial lobes that left behind the unusual kettle and kame topography in the Northern and Southern Unit of the Kettle Moraine State Forest. Drumlins, kettles and kames are unique natural features - not only in Wisconsin but also the world.

In the northeastern part of the Basin, emerging above the glacial deposits, is the bedrock outcropping of the Niagara Escarpment. The resistant limestone bedrock is visible as low-lying cliffs that run from the northeast to the southwest. This bedrock also is the same formation that bends downward under Lake Michigan and emerges to the east to form Niagara Falls. To the visible eye, the Basin is quite flat. However, buried beneath our Basin's rolling hills and plains lie an ancient bedrock surface with craggy cliffs and deep bedrock valleys. Map three shows the geology in the Rock River Basin.

Historical Timeline

~12,000 BC	Glaciers retreat from Basin (Kettle Moraine Area; mammoth hunters in WI)
1000 BC	First Indian Mounds constructed (Horicon Marsh and Lake Koshkonong areas)
1200-1600 AD	Flourishing American Indian population (Aztalan State Park site)
1778	First recorded European traveler to Basin (C. Gautier de Veville traveled Rock River to Lake Koshkonog)
1787	Northwest Ordinance (All navigable waters shall be common highways and forever free in Wisconsin)
1830s	First European Settlers (Thiebeau's Point on Lake Koshkonong)
1848	Wisconsin joins the Union as the 30th state!
1850	Mill Dam Act (Lake Mendota water level is raised 4 feet for grist milling)
1884	Public Sewage System begins (City of Madison)
1872	Wisconsin Dairymen's Association organized in U. S. (Watertown, WI)
1890s	Severe Wheat Blight hits Wisconsin; Dairy Industry begins in WI Carp flourishing in most of Rock River Basin
1920s	Heavy agricultural equipment use starts in earnest (Agricultural equipment manufacturing starts in Horicon, WI)
1940s	Industrial growth, farming and personal use of chemicals increased significantly
1950s	Food Service Act (advocated plowing from fence post to fence post) Major highways construction begins in U. S. (beginning of urban sprawl)
1970s	WI starts listing of lakes/streams for mercury/PCB contamination (Lake/Stream Fish consumption advisory)
1972	Federal Clean Water Act (Point Source Pollution addressed; Nonpoint Pollution issue raised)
1978	WI Nonpoint Pollution Program begins (Six Mile and Pheasant Branch first NPS projects in Basin)
1980s	Decline of dairying in WI and Basin
1991	RAMSAR adds new site to list of internationally important areas (Horicon Marsh nominated)
1996	WI lists Basin lakes/streams impaired by point/nonpoint pollution on EPA 303d list
2000	Additional Basin lakes added to the Lake/stream Fish mercury advisory list

Land and Vegetation

In the past, before modern human influence, the land looked very different from today. The Basin is part of two Wisconsin ecological landscapes. Most of the Basin is located in the Eastern Glacial Plains. Only about 5% are in the Central Sand Hills Ecological unit, towards the northwest. Soil fertility is generally good throughout the Basin. Soils are quite variable, ranging from shallow, mineral soils to very rich organic soils, to sand and gravel deposits as much as 300 feet thick. The soil types range from very permeable sand and gravel deposits to tight, impermeable clays.

Throughout the Basin, large wetland systems, from the last period of Wisconsin glaciation, supported many species of water loving plants, animals, and birds. The extensive wetland systems were an integral part of the health of the groundwater aquifers, streams and lakes, and important fisheries and wildlife resources in the Basin.

Oak savanna and prairies were the most widespread plant communities found at the time of the original land surveys in the mid-1800s. Oak savannas differ from oak woods in that the trees are rather widely and evenly spaced so that beneath the oaks, prairie grasses grew. Primarily only the eastern portions of Jefferson and Dodge Counties contained a southern deciduous forest with sugar maple, basswood and some oak species dominating. Map four shows the original vegetation in the Rock River Basin (circa 1830s).

Overall, southern Wisconsin's vegetation is estimated to have been about 40% true forest, 40% open Oak Forest (oak savannas) and 20% short and tall grass prairie. There was considerable variance in landscape vegetation, even over relatively short distances across the Basin. Some townships, like Hebron and Farmington in Jefferson County, were greater than 90% forested. While the Towns of La Prairie and Bradford in Rock County, about five miles south, were more than 90% prairies.

The pre-settlement landscape of the Rock River Basin was greatly influenced by fire, many of which were set by Native Americans. Fires helped to maintain the existence of the prairie-oak hardwood flora by retarding the growth of other trees and brush. The introduction of agriculture and the suppression of fires greatly increased the growth of sugar maple, basswood, white ash and other shade tolerant forest species.

The Basin was a prairie, forest, and wetland paradise for birds, mammals and plants! Over time Native American and later, more significantly, European human use of the land greatly affected the range and type of plant and animal species living in the Basin.

Surface Water and Groundwater

Water is the life support system for all living creatures on earth - people, plants, insects, and animals. Water circles through the air as clouds and vapor, then falls onto the land as rain and snow and directly enters rivers or lakes. Water enters the ground more slowly and then flows to rivers and lakes. Some of the water in rivers, lakes and the soil evaporates back into the atmosphere. People, animals and plants drink water from rivers, lakes or groundwater, and then, breathe water vapor back into the atmosphere. It's a wonderful circular system - one whose purity and quantity all life is dependent upon.

In the past, many of the Basin rivers looked very different from today. Early explorers reported that many streams flowed more like long seeping wetlands rather than rivers in a defined channel. This was a result of the deep prairie soils and dense vegetation absorbing rainfall and slowly releasing it to the rivers. While most of the Basin's large rivers and streams still meander as they have for thousands of years, many smaller streams have been ditched and straightened. The hydrology of our rivers has changed substantially.

Over time many rivers were dammed for commerce, mostly for gristmills to grind grain or provide power to sawmills. As settlements and transportation grew, acres of pavement, buildings and other impervious areas also grew. Prairies and forest were converted to farmland. Water began running off the land faster - and less water soaked into the land.

Slowly, through years of human activity, rivers in the Basin began to change. Many streams became straighter and warmer. Rivers began running both faster and fuller, increasingly flooding adjacent low-lying lands. At other times rivers and streams became dryer - with some smaller streams even disappearing during hot summer months. Over time, the quality of the water also changed. Stories from the past talk of the purity of the streams, springs, and lakes. This is not the tale told by people and science today. Drinking from a spring is definitely not recommended.

Map 3: Rock River Basin Geology

Please refer to the State of the Rock River Basin Report web page to view this map

Map 4: Rock River Basin 1830s Vegetation

Please refer to the State of the Rock River Basin Report web page to view this map

Groundwater rich! That's another Basin legacy from the past. Aquifers are our invisible wealth and envied by many areas in the USA. Almost every community, homeowner and industry in the Basin obtains groundwater for drinking or industrial use.

Groundwater comes from many different depths under the earth's surface. In some places, groundwater aquifers - rock or sandy formations holding large quantities of water - lie deep below the surface. In other places groundwater is very near the surface and when it's on the surface, we call these rivers, lakes and wetlands. Groundwater aquifers are found in sand or gravels laid down during the last glaciation and in limestone or sandstone bedrock from older geologic ages. Generally the shallower the aquifer - the younger the water.

Rain and snowmelt, wherever it infiltrates the ground, recharges groundwater aquifers. Water in many shallow sand and gravel wells is from rain and snow that fell less than 50 years ago or even as recently as last month! Water in deeper rock aquifers can be from storms that occurred thousands of years ago. Groundwater from older aquifers often has increased levels of certain metals, like maganese, radium, arsenic, and iron that dissolved into it due to long contact time with rock minerals.

Over time human changes to the environment, such as the loss of wetlands, the plowing up of the prairies for agriculture, the addition of thousands of acres of concrete and buildings, and locally, the pumping of groundwater, changed surface and groundwater flow in the landscape.

Ancient Cultures and Native Americans

Many human societies lived in the Rock River Basin and left their footprints on the landscape. Every major prehistoric Native American Indian culture known to Wisconsin is represented in the archaeological record in the Basin, especially around the lower Crawfish River and the Horicon Marsh.

Wisconsin's archaeological records show that areas of the Basin were first inhabited by the Woodland culture about 3,000 years ago. These people include mound builders that long ago left their mark on the landscape near waterways by building effigy mounds shaped in the forms of birds and animals. At one time the mounds were prolific, numbering more than 1,500 in Jefferson County alone. Many effigy mounds remain in the area. Dodge County still has more than 500 effigy mounds, mostly near water sources. Beloit College in Rock County has 22 effigy mounds on their 40-acre campus. The heartland of Wisconsin and the nation's effigy mounds lie within the Basin.

One outstanding nationally recognized ancient settlement is located at what is now Aztalan State Park, on the Crawfish River near the Village of Lake Mills. Aztalan, because of its size and mound building sophistication, was designated a National Landmark in 1964. It is thought to be the northern most outpost of the ancient Mississippian culture. This civilization constructed a major settlement, and the largest earthen mound in the U.S. called the Cahokia Mounds, near St. Louis.

More recently, the Basin has been the home of many different Native American tribes. These include the Ho Chunk, Potawatomi, and Sioux tribes. Many names of cities and rivers in the Basin come from the different tribes living here: Okauchee which in Ojibwa means 'the right side of something'; Ashippun which in Potawatomi or Menominee means 'raccoon', Waubesa which in Ojibwa means 'swan'; Waunakee, is Ojibwa for 'peace', and Yahara, in Winnebago means 'catfish'.

Recent Immigrants

Since the 1800s people from many different nationalities have made their homes in the Basin. Their diversity covers the spectrum of our national heritage: Norwegian, German, African, English, Italian, Mexican, and Laotian - to name only a few. In fact it's safe to say that our Basin's population is a representation of global diversity. A diverse cultural heritage is one of the Basin's strengths.

People dancing at a festival in Madison, WI
Photo by Bob Queen - DNR photographer