A Brief History of Long-Standing Mills in and around Oxford, Ohio

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Acknowledgements

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Cover Illustration: Lithograph of Lane's Mill from the 1875 Atlas of Butler County (HBC 1882)

The Evolution of Water-Powered Mills in Ohio

Clifton Mill, Greene County, Ohio

Beginning in 1633 with the construction of the first water-powered mill in America, the popularity of the milling industry began to spread across New England (Garber, 1970). In 1790, Ohio's first water-powered mill was constructed in Marietta, Ohio, as early settlers moved from the east (Garber, 1970). Southwestern Ohio, however, was the next region where milling advanced in Ohio due to the region's extensive grain crops and high need for gristmills (Garber, 1970). Milling became Ohio's first established industry; its streams and widespread forests provided the resources necessary for the industry to thrive (Garber, 1970). By the early 1800s, water-powered mills emerged as a prominent feature along streams all across Ohio. Soon, almost every town had at least one gristmill in order to better facilitate the grinding of wheat and corn harvested by local farmers (Garber, 1970). Other common mill types included sawmills (for cutting timber) and carding mills (for preparing wool for spinning). Often sawmills were constructed on a site first in order to provide the lumber for a second mill foundation, so multiple mills on one property were common (Garber, 1970).

The Decline of Water-Powered Mills

The water-powered milling industry in Ohio continued for approximately a century, but faced a rapid downfall due to new inventions towards the end of the 1800s. One such invention was the Leffel Turbine, patented in 1862 in Springfield, Ohio. These metal turbines were more efficient than wooden waterwheels, and soon ran small country mills with wooden waterwheels out of business (Garber, 1970).

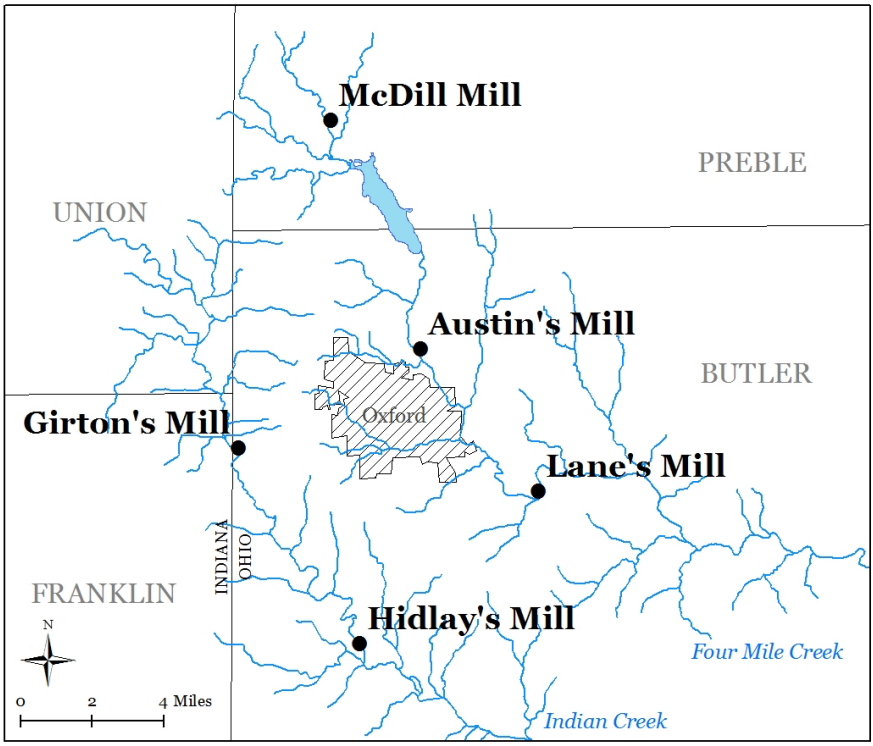
The invention of roller mills also pushed small country mills out of business. Roller mills utilized expensive machinery for grinding grain in place of millstones (Garber, 1970). These mills produced very smooth flour that became highly sought after. Unfortunately, small mills often went into debt from mill upgrades and then could not make enough profits to pay off the debit the way larger milling operations could.

Historians Are Interested... And Now So Are Scientists!

Historians and the public have long been interested in milling operations and in mill restorations. Recently, environmental scientists have begun to explore mill histories as well as they try to understand the potential impacts mills may have had on streams (Walter and Merritts, 2008; Hupp et al., 2013). It has been proposed that the large number of milldams trapped enormous amounts of sediments and fundamentally changed the nature of streams in the eastern U.S. (Walter and Merritts, 2008). Long-standing 19th-century mills near Oxford such as Lane's Mill, Austin's Mill (Pugh's Mill), Girton's Mill, McDill Mill, and Hidlay's Mill may have caused changes in sediment storage that could have altered stream channels from their natural, pre-European settlement conditions (see map on next page). Research is being conducted to determine if 19th-century milldams have significantly affected sediment storage along Indian Creek and Four Mile Creek.

A thorough understanding of a stream's natural condition is essential for successful stream restoration. Stream restorations are designed to restore a stream to its natural qualities in order to increase water quality,

control vegetation along the stream, open up fish passages, and stabilize stream banks (Bernhardt et al., 2005). Current stream restoration projects in the Upper Midwest do not account for the effects milldams may have had on sediment storage and only follow the basic model of a meandering stream surrounded by floodplain sediment (Walter & Merritts, 2008). Because of limited knowledge on the effects mills had on streams in southwestern Ohio, this basic model may not show true pre-settlement conditions and could impact the success of stream restoration projects. Stream restorations are often expensive, so identifying the natural conditions to restore a stream to is vital to the success of the restoration project and to the proper management of project funds (Bierman & Montgomery, 2014).

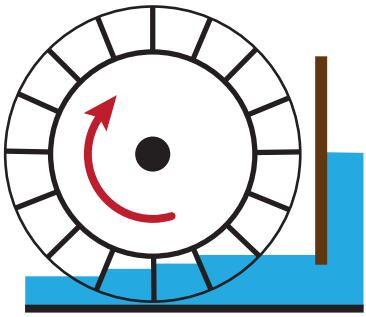


Location of five long-standing mills situated on Indian Creek and Four Mile Creek near Oxford, Ohio

How Mills Work

In order for mills to receive enough power from the stream to operate, water from upstream was often funneled towards the mill in a canal called a millrace or headrace (see next page). The millrace provided the proper elevation change needed to let the water either fall over the top of the waterwheel from a high enough height (termed an "overshot" wheel), or to flow with enough power underneath the wheel (termed an "undershot" wheel) to successfully turn the wheel. To help keep a continuous flow of water going over or under the wheel during mill operating hours, often a dam was built across the stream near the start of the millrace. A head gate was installed at the beginning of the millrace and a sluice gate constructed before the wheel to control water flow. Extra stream water was diverted over the dam and through the stream channel to avoid flooding the millrace and mill. Once the water traveled through the headrace and waterwheel, it was channeled back to the stream through a tailrace.

Overshot wheel



Undershot wheel

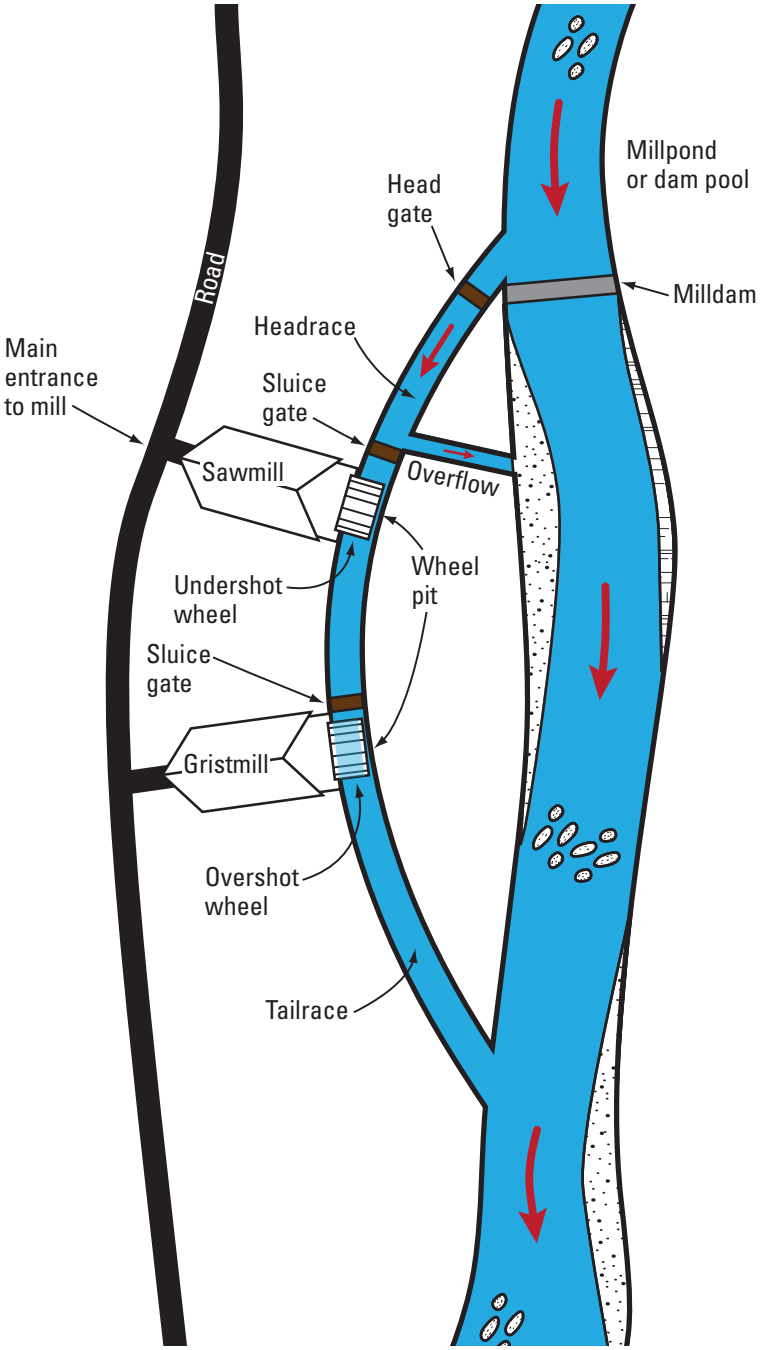
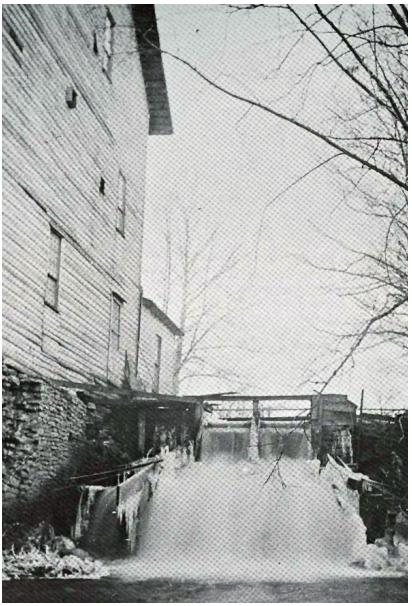


Diagram of typical mill workings with millraces in southwestern Ohio

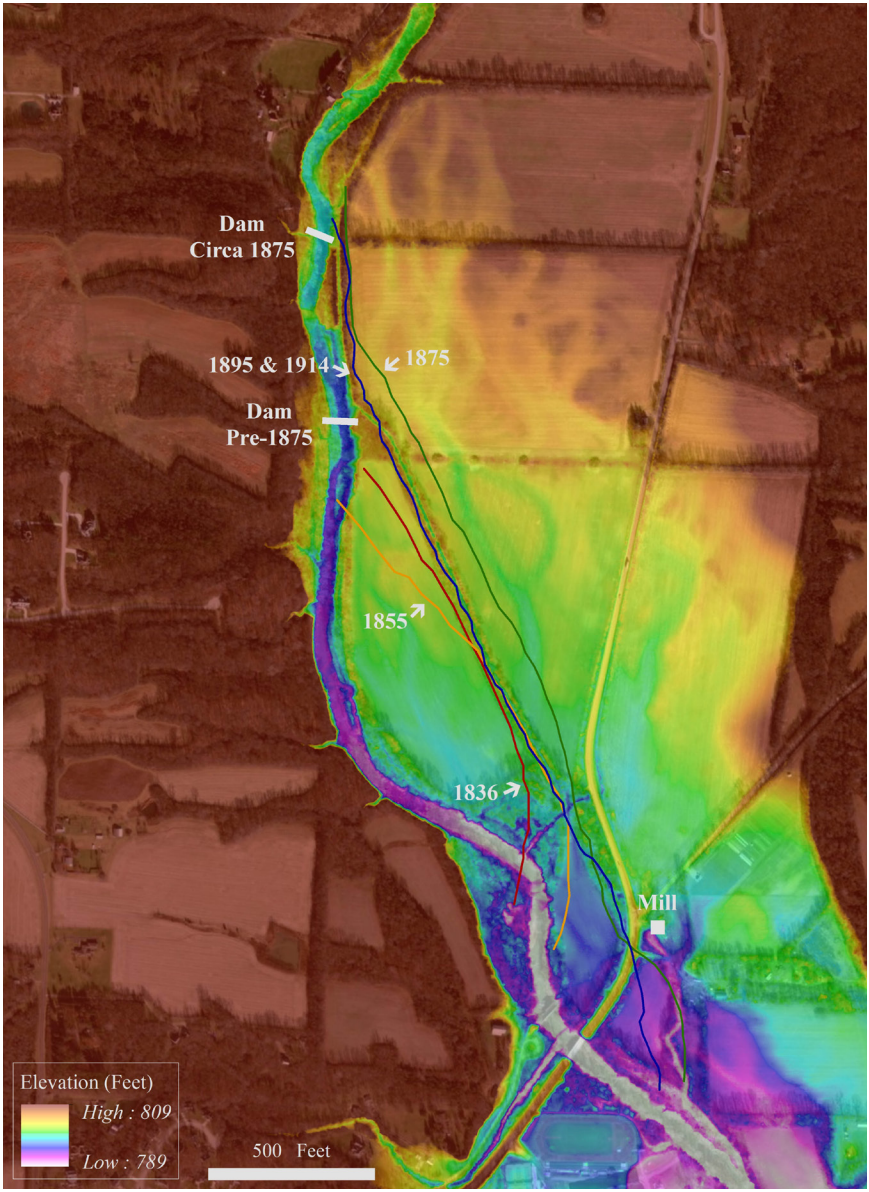
Austin's Mill

Austin's Mill, also known as Pugh's Mill, was located on the east side of Four Mile Creek, just north of Oxford near the corner of Somerville Road and Morning Sun Road. The mill is no longer standing, but the millrace remains well preserved.



South side of Austin's Mill after the waterwheel had been removed

A gristmill was built at this site by Aaron Austin circa 1815 (Fryman, 1971). The mill stood three stories tall and had an overshot wheel measuring sixteen feet in diameter (HBC, 1882). Its millrace was rather long, about one mile in length. The race was approximately six to eight feet deep and between twenty and thirty-five feet wide (Clemes & Curry, 1980). The mill was in operation until 1845, when it caught on fire and burned down (The Muser, 1897). Franklin Austin, son of Aaron Austin, rebuilt the gristmill a couple years after the first mill burned down (The Muser, 1897). The new gristmill was powered in the same manner as the first, but with upgraded machinery (HBC, 1882). A sawmill was also built on site sometime after the gristmill, as evidenced by its appearance in a property sketch for the Butler County Reappraisement Records for Oxford Township (1853). The mill passed hands twice before roughly 1868, when J. B. Pugh bought the property (HBC, 1882). According to the U.S. Products of Industry Census of Butler County (1870), the mill had a net value of $12,000, produced up to 150 bushels of wheat and 360 bushels of corn per day, and operated at 40 horsepower. The mill passed hands several more times, with C. C. Sullenberger being the last known owner of the mill before the 1913 flood demolished the milldam and abruptly terminated the mill's water-power supply (Clemes & Curry, 1980). Sullenberger tried operating the mill using electricity for a brief time after the flood event (Jack Fryman, 2016).



Digital elevation map of Four Mile Creek floodplain and location of Austin's Mill and location of millrace from historical atlases

'Three men on a rock weir' by William A. McCord, 1880s (Smith Library of Regional History). Photograph was taken on Four Mile Creek near Oxford and we believe that the weir was the milldam for Austin's Mill.

Austin's Mill, after waterwheel had been removed, looking north with tailrace in foreground (Smith Library of Regional History)

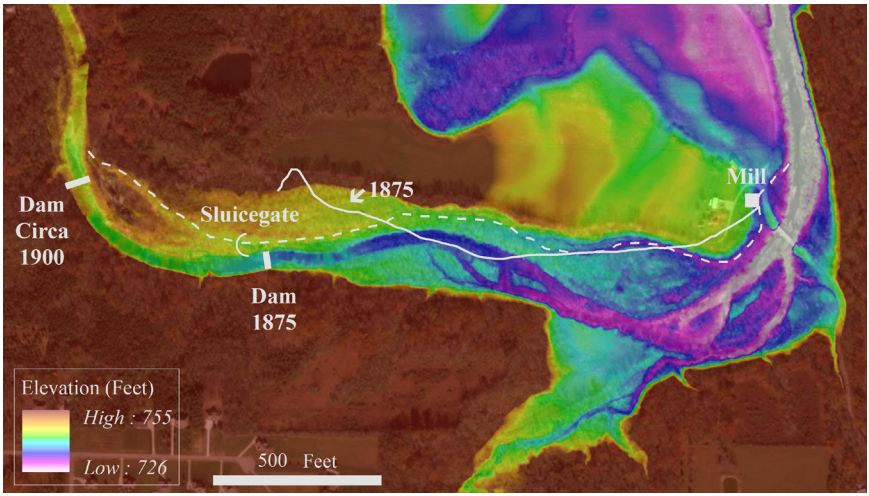
Lane's Mill

Lane's Mill was located on the north side of Four Mile Creek, approximately halfway between Oxford and Darrtown, where Lane's Mill Road crosses the creek. Today, the foundation of the mill is preserved and situated between Four Mile Creek and Wallace Road in Milford Township.

A sawmill, gristmill, and fulling mill were built at this site in 1816 by John Wallace and Isiah Bryant (HBC, 1882). Both mills were propelled by undershot wheels (HBC, 1882). Between 1848 and 1850, William Elliot constructed a new gristmill at the original mill site (HBC, 1882). The new gristmill stood three-stories tall, was constructed of limestone flagstones, and was powered by a sixteen foot undershot wheel (Maurer, 1979). This limestone gristmill was thought to be one of the finest examples of stone mill architecture in southwest Ohio (see page 13 and front cover). Its millrace was reported to be thirty feet wide and eight feet deep at its origin and supposedly paralleled Four Mile Creek for 3,000 feet before joining the creek ("Darrtown," 2007). After Elliot was killed in a mill accident in 1853, the property was passed to William Lane (Maurer, 1979). According to the U.S. Products of Industry Census of Butler County (1870), the mill was worth $10,000 and operated for six months of the year. In 1870, the

Four Mile Creek ca. 1920s looking upstream with Lane's Mill (three-story building). (Photo from Kirk Mee III)

mill processed 12,000 bushels of wheat and 11,400 bushels of corn (U.S. Products of Industry Census, 1870). The mill was in operation until approximately 1898. It fell into disrepair and was demolished around 2008, except for parts of its foundation (Maurer, 1979).



Digital elevation map of Four Mile Creek floodplain and location of Lane's Mill, millrace, and milldams

Flagstone wall associated with sluice gate and headrace for Lane's Mill

Lane's Mill looking south (Smith Library of Regional History)

Hidlay Mill

Hidlay Mill was located on the east side of Indian Creek in the town of Reily, at the southernmost end of Oxford Reily Road. Today the mill site is situated between the Indian Creek Metropark-Springfield Road Area and Oxford Reily Road Area, but is unmarked. The mills associated with this site are no longer standing.

Hidlay Mill looking southwest
(Smith Library of Regional History)

A sawmill and a gristmill were built at this site by millwright David Dick circa 1810 to 1812 (HBC, 1882). The sawmill was powered by an undershot wheel and was positioned upstream of the gristmill, which was propelled by an overshot wheel (HBC, 1882; Everts, 1875). Dick also added a carding machine shortly after the construction of the mills (HBC, 1882). The mills changed hands to Lewis Enyart and several others before they came into James P. Hidlay's sole possession in 1868. The Combination Atlas Map of Butler County, Ohio contains a lithograph of the mill and residence of J.P. Hidlay (Everts, 1875). According to the U.S. Products of Industry Census of Butler County (1850), the sawmill processed 400 logs that year; however, the gristmill is not mentioned. In a later U.S. Products of Industry Census (1870), the gristmill was recorded as operating at 24 horsepower for eight months a year and processing 10,000 bushels of wheat and 5,300 bushels of corn. The mill was still in operation during the publication of A History and Biographical Cyclopaedia of Butler County, Ohio in 1882, but is thought to have fell out of use in the late 19th- or early 20th-century, possibly around the death of the owner, James P. Hidlay, in 1893. Sometime after 1940, the mill was demolished (Powers, 1979).

Map of Reily with mills and millraces (above) and lithograph (left) of Hidlay Mill (building on left) and mill owner's house (building on right) from the 1875 Atlas of Butler County

McDill Mill

McDill Mill was located on the west side of Four Mile Creek in Israel Township, Preble County, near the bend of Buck Praxton Road. Today, this is just northwest of Hueston Woods State Park and the covered bridge.

A sawmill and a gristmill were built at this site by millwright William Ramsey sometime after he arrived from Virginia in 1806 (HPC, 1881). The mills were commonly referred to as the Cliff mills, due to their location on the edge of the gorge (page 17). In 1837, Thomas C. McDill bought the mills and they became known as McDill's Mill (HPC, 1881). According to the U.S. Products of Industry Census of Preble County (1850), McDill's Mill processed 6,000 bushels of wheat and 1,000 bushels of corn in 1850. Thomas C. McDill's occupation was listed as miller in the U.S. Federal Census (1880), indicating the continuation of the mill's operation many decades later. However, when Thomas C. McDill passed away in 1882, the mill's traditional milling process likely ended. An advertisement in 1889 indicates that his son, Thomas A. McDill, continued the milling industry after his death, but converted the mill over to utilize roller mill technology (Keller & McDill, 1889). The date the roller mill fell into disuse is unknown, but its mention in a newspaper article indicates that it was still active in 1892 ("Oxford," 1892).

Advertisement card (front and back) for flour milled at McDill Mill

McDill Mill looking to the northwest

G. R. KELLER. T. A. McDILL.

Oxford Roller Mills.

Keller & McDill, Prop'rs.

First-class flour made by the NEW ROLLER PROCESS and satisfaction given. No mill in the State of Ohio has Superior machinery to the Oxford Roller Mills; hence our flour "can't be beat!"

The highest cash market price paid for Wheat.

Flour exchanged for wheat. All kinds of Feed constantly on hand. The public patronage is respectfully solicited.

Advertisement for McDill Mill flour, source unknown (Smith Library of Regional History)

Girton Mill

Girton Mill was located on Indian Creek, adjacent to Brookville Road in Oxford Township. Today, the mill is no longer standing.

Girton Mill (Smith Library of Regional History)

A gristmill was built at this site for Christopher Girton by millwright Mr. Barnum circa 1822 (HBC, 1882). In addition to the gristmill, the Butler County Reappraisement Records for Oxford Township (1846) indicate the presence of a small sawmill. The mills were passed down from Christopher Girton to his son Jacob Girton, and then to Thomas McCullough, who was Jacob Girton's son-in-law (HBC, 1882). The gristmill was powered by an undershot wheel and the wheel's frame was still on site in 1882, but the mill's power source was switched over to a turbine waterwheel sometime prior to this date (HBC, 1882). According to the U.S. Products of Industry Census of Butler County (1850), the gristmill processed 4,000 bushels of wheat and 6,000 bushels of corn that year. The date the mill went out of use is unclear. However, the last owner of the gristmill, Thomas McCullough, passed away in 1901, so the mill likely fell out of use around the turn of the century.

Works Cited

A History and Biographical Cyclopaedia of Butler County, Ohio, with Illustrations and Sketches of its Representative Men and Pioneers [HBC]. (1882). Cincinnati: Western Biographical Publishing.

Bernhardt, E.S., Palmer, M.A., Allan, J.D., Alexander, G., Barnas, K., Brooks, S.,…Sudduth, E. (2005). Synthesizing U.S. River Restoration Efforts. *Science, 308*(5722), 636 LP-637.

Bierman, P.R., & Montgomery, D.R. (2014). *Key Concepts in Geomorphology.* New York: W.H. Freeman and Company Publishers.

Butler County County Clerk. (1846). *Butler County Reappraisement Records of 1846 for Oxford Township.*

Butler County County Clerk. (1853). *Butler County Reappraisement Records of 1853 for Oxford Township.*

Clemes, J., & Curry, L. (1980). *National Register of Historic Places Inventory Nomination Form: The Austin-Magie Farm and Mill District.* Cincinnati.

Darrtown. (2007). Retrieved from http://www.darrtown.com/index.html

Everts, L.H. (1875). *Combination Atlas Map of Butler County Ohio: Compiled, Drawn and Published from Personal Examinations and Survey.* Philadelphia: L.H. Everts.

Fryman, J.F. (1971). *From The Mountains To The Valley.* Oxford: TYP6 Print Inc.

Garber, D.W. (1970). *Waterwheels and Millstones: A History of Ohio Gristmills and Milling.* The Ohio Historical Society.

History of Preble County, Ohio, with Illustrations and Biographical Sketches [HPC]. (1881). H.Z. Williams & Brothers.

Keller, G.R., & McDill, T.A. (1889, August 8). Oxford Roller Mills. *Oxford Citizen.*

Maurer, N.N. (1979). *National Register of Historic Places Inventory Nomination Form: Lane's Mill Historic Group.* Oxford.

The Muser. (1897, April 16). Fireside Musings. *The Oxford News.*

Oxford: We Give You A Tip. (1892, January 6). *Hamilton Daily Democrat,* p. 4. Retrieved from https://access.newspaperarchive.com/us/ohio/hamilton/hamilton-daily-democrat/1892/01-06/

Powers, B. (1979). *National Register of Historic Places Inventory Nomination Form: Hidley Cottage.* Oxford.

U.S. Census Bureau. (1880). *U.S. Federal Census of Preble County, Ohio.* Retrieved from Ancestory.com

U.S. Census Bureau. (1850). *U.S. Products of Industry Census of Butler County, Ohio.* Retrieved from Ancestory.com

U.S. Census Bureau. (1850) *U.S. Products of Industry Census of Preble County, Ohio.* Retrieved from Ancestory.com

U.S. Census Bureau. (1870). *U.S. Products of Industry Census for Butler County, Ohio.* Retrieved from Ancestory.com

Walter, R.C., & Merritts, D.J. (2008). Natural Streams and the Legacy of Water-Powered Mills. *Science, 319*(5861), 299 LP-304.

We have had such a large impact on the natural landscape in Ohio over the last 250 years since European settlement. If we are to manage these systems, it is important for us to understand their natural state and what impacts we have had on them. Help us out with this particular study if you know the location of long-standing (more than a few decades) mills and their dams in and around Oxford, Ohio.

Unknown mill. Writing on the back says 'The old mill and dam 1 ½ miles from birth place, Oxford Ohio, taken by FNJ'

Please contact Ms. Valerie Elliot at the Smith Library or Regional History or Dr. Jason Rech (rechja@miamioh.edu) at the Department of Geology and Environmental Earth Science, Miami University, if you know the location of this mill in the photograph above.