The Androscoggin River’s natural power played a great role in transforming the city’s economic capabilities. Dropping from 1,245 feet, the Great Falls were the steepest gradient of any Maine River that catered to power generation and ultimately to textile mills productivity. The idea of hydropower was that the energy from the water falls would help generate power for each mill’s power generation stations. The Androscoggin River’s “power machine” was found in the Great Falls, and this natural energy helped further Lewiston’s textile industries.

Predominantly led by Irish and French-Canadian workers, the image above is an illustration of men digging out silt that had flowed into the Oxford Street Canal. The canals of Lewiston had played a significant role in the creation of water power, formation of the mills, and the development of the Lewiston area. In 1848, Boston investor Benjamin E. Bates had largely financed the initial construction of both the canal systems and the mills. Canals are the energy provider in the process of creating power. Canal construction had allowed for industrialist to utilize the mills. Canals are the energy provider in the process of creating power for each mill’s power generation stations. The Androscoggin River’s “power machine” was found in the Great Falls, and this natural energy helped further Lewiston’s textile industries.

To provide power for the mills in Lewiston, water from canals flowed through an opening in the basement of the mills. Rushing water flowed through the opening and into buckets, originally called breastwheels, which rotated as they became full of water. The weight of the water in the breastwheels propelled the waterwheel in circular motion. “Turning at a relatively constant rate, the water wheel was attached to a vertical shaft through two bevel gears arranged at a ninety degree angle to one another.” This allowed for the conversion of stored energy into usable, kinetic energy. Machines within the buildings were arranged in long lines so that harnessed power could travel the length of the building. Later, due to frequent malfunctions, a new design of a belt-and-pulley system was devised in 1828. A flywheel transferred power from the main shaft to smaller shafts and then to individual looms. This allowed for a smoother and more efficient hydropower system.

“The Androscoggin river system incorporated the canals, waterfalls, and mills to harness the river’s stored energy. These factors, along with the technology available to turn water into hydro-power, are responsible for Lewiston-Auburn’s rich industrial history. In 1809 water power was harnessed with the construction of a timber dam in conjunction with a saw, grist, and fulling mill located at the present site of the Lincoln Mill. With the financial support of Bostonian entrepreneurs like Benjamin E. Bates and the employment of Irish immigrants, the canal system opened its gates to the mighty Androscoggin in 1852. In the following decades cotton mills like the Bates Mill, Hill Mill, and Androscoggin Mill were constructed. Today the Bates Mill is still known nation wide for its famous bedspreads. The construction of the canal system and the opening of the numerous mills created many job opportunities, establishing Lewiston-Auburn as a developing industrial city.

If it is asked what are the causes that have made Lewiston grow faster than any other city in Maine during the last thirty years, the answer is found in the magnificent water power with which Nature has endowed it, and its geographical location at the natural center of a large and populous section of the Pine Tree state. The water power of Lewiston is one of the finest to be found in New England.”

Hadley Dawson, Tyler Greens, Adelaide Makwaia, Derek Murphy

A Research Project through the Bates College Environmental Studies Department in coordination with Museum L/A

“If it is true that the discovery of new sources of power has been the basis for the progression of civilization… then the superseding of wind and water power must surely be celebrated” - John Reynolds.


Sources:
- Pfeiffer, Mariah. Visions and the Valley: A Reconstructed History of the Androscoggin River and its Industrial Communities. 44-45. Muskie Archives.
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