



Babcock State Park offers its guests 4,127 acres of serene, yet rugged beauty, a fast flowing trout stream in a boulder-strewn canyon and mountainous vistas to be viewed from several scenic overlooks. All of this variety is located adjacent to the New River Gorge National River and the heart of the whitewater rafting industry of West Virginia.

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## **The Glade Creek Grist Mill**

The Glade Creek Grist Mill is a new mill that was completed in 1976 at Babcock. Fully operable, this mill was built as a re-creation of one which once ground grain on Glade Creek long before Babcock became a state park. Known as Cooper's Mill, it stood on the present location of the park's administration building parking lot.



Of special interest, the mill was created by combining parts and pieces from three mills which once dotted the state. The basic structure of the mill came from the Stoney Creek Grist Mill which dates back to 1890. It was dismantled and moved piece by piece to Babcock from a spot near Campbelltown in Pocahontas County. After an accidental fire destroyed the Spring Run Grist Mill near Petersburg, Grant County, only the overshot water wheel could be salvaged. Other parts for the mill came from the Onego Grist Mill near Seneca Rocks in Pendleton County.

A living monument to the over 500 mills which thrived in West Virginia at the turn of the century, the Glade Creek Grist Mill provides freshly ground cornmeal which park guests may purchase depending on availability and stream conditions. Visitors to the mill may journey back to the time when grinding grain by a rushing stream was a way of life, and the groaning mill wheel was music to the miller's ear.

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## How the Mill Runs



The Glade Creek Grist Mill within Babcock State Park has been photographed by thousands of visitors, and those photographs have appeared in personal photo albums and on postcards and calendars throughout the United States and overseas. Although striking, particularly when taken in the fall, photographs do not reveal the inner workings or cultural significance of the mill. On a recent visit to the mill, I met with Steve Tyree, Glade Creek miller, to learn about the milling process in detail.

Grist mills served as a center of commerce for the surrounding area. Some were used as post offices and as a place to catch up on the latest happenings (activities) in the area. However, the real significance was practical-producing a usable end product, in the form of flour or meal, from the whole grains grown by local residents.

Working in a mill was hard and dusty work. Entire families, including small children, participated in the process of grinding, bolting, and bagging. Maintaining the mill was also important, and careful attention was needed during the grinding process.

Glade Creek Grist Mill was constructed at its current location in 1975 from the parts of three original mills that had operated in West Virginia. The main building and stone floor came from the Stony Creek Grist Mill in Pocahontas County and the Onego Grist Mill in Pendleton County. The overshot wheel, the oldest component, came from the Spring Run Grist Mill in Grant County. The original mill, the Cooper's Mill, burned to the ground in the 1920s. It was located at the current site of the Administration Building.



To really understand the operation of the mill, it is necessary to start with the driving force behind the operation-water. Upstream from the mill is a dam that pools water and directs it through a series of culverts and overflow stations. The miller can regulate the amount of water entering the sluiceway by adjusting a gate on the overflow.

Once the water enters the sluiceway, the flow is again regulated by a gate above the overshot wheel. The miller can fine tune the speed of the wheel and therefore the grinding stones by raising or lowering this gate. The water spilling out of the end of the sluiceway fills the buckets on the wheel to turn the main drive shaft. The main drive shaft of the water wheel powers the mill operations through a combination of gears, pulleys, and belts. Power

to a particular shaft is engaged by the use of an idler pulley to put tension on the belt.



Sluiceway



Gate above the overshot wheel



Idler pulley puts tension on the belt

A wooden shaft supported on a bearing block penetrates through a hole in the stationary bottom or "bed" stone and engages and turns the upper or "running" stone. The distance between the two stones is critical for a number of reasons.

Steve said, "The expression 'keep your nose to the grindstone' comes from monitoring the distance between the stones so there is no direct contact." If the stones touched, a smell similar to striking a flint would arise from the stones. If this was not immediately corrected, the stones would be damaged. Steve also stated that too much pressure on the grain or too high a grinding speed could burn the grain, resulting in a spoiled product. According to Steve, "A 'rule of thumb' also comes from the milling process, where the miller would feel the size and texture of the milled grain as it came off the stones." Adjustments could then be made. The distance between the stones determined the size of the milled grain processed between the stones.



Corn Sheller

Grain was usually cleaned and prepared for grinding by the grower. The miller would take an additional toll if he had to perform this work. Two machines were employed on a regular basis. A corn sheller was used to remove the corn grain from the cob. It had spurred wheels turning in opposite directions that pulled the cob through and stripped off the kernels. Wheat was processed through a winnow. The winnow used a vibrating screen and paddle like fan blades to separate and blow the chaff and dirt from the wheat kernel.



Winnow

Powered shafts not only turned the grinding stones but also powered conveyors for moving milled grains to the bolting machines for separation into flour, meal, grits, and waste. The waste was used as animal feed. Bolting could be done by hand for small quantities, but for any order over 100 pounds, the powered bolting machine was employed. Bolting by hand involved tapping a screen with a wooden mallet to sift out the finished grain. The powered bolting machine consisted of a bin with outlets covered by bolting cloth of different mesh size. The more open the mesh the larger the grain size that could get through. A paddle wheel inside the bolting machine moved the grain onto and through the bolting cloth.



Once the grain had been ground to order, the miller would take his "toll." This was done with a toll spoon—a flat, thin board sized for quantities of 50 pounds or 100 pounds. This board was dipped into the processed flour or meal and whatever stayed on the board was the miller's. According to Steve, "Millers loved to take their toll on humid days, when a greater quantity could be held on the spoon."



The finished flour or meal was then bagged for the customer. Seamless cotton bags were used. The miller would stitch a seam across the bottom of the bag and then cut off the portion needed.

Today, Steve grinds four different raw grains: yellow corn, white corn, buckwheat, and prairie wheat. Two different sets of stones are present in the mill: the heavier (1200 lbs) for grinding wheat and the other (1000 lbs) for grinding corn and buckwheat. The heavier stone is necessary to properly grind the smaller, harder wheat grain. The wheat stone cracked some time ago, so Steve now uses the corn stone for all of the different grains. Grinding buckwheat is definitely the dustiest. I visited the mill on a day when Steve was grinding buckwheat. He emerged with eyebrows, head, and shoulders covered with white dust. Steve saves the hulls from the buckwheat to fill pillows.

The raw grain is poured into a hopper above the running stone and gradually slides down into the "shoe." The shoe, which is vibrated by an angular shaft called the damsel, gradually feeds grain into the eye (a hole in the center) of the running stone. As the grain builds up in the eye of the stone, it is drawn between the stones by grooves or furrows in the surface of the stones. These grooves are at opposing angles on the bed and running stones, causing the grain to be cut. The milled grain passes to the outer rim of the stones and falls within a wooden vat covering the stones. It then dumps through a chute to the meal chest.

**On some days, Steve lets children help in the process. After they complete their tasks, Steve awards them a "Miller Training Certificate." The next time you visit the Glade Creek Grist Mill, look a little closer at what is happening. Steve is intimately familiar with the history and inner workings of the mill and is more than willing to answer questions.**

**– Photographs and story by John Northeimer**

**--- From the WV State Parks' "West Virginia State Parks – Special Places – Past, Present, and Future" (deactivated) Website.**