

THE GREAT OUTDOORS



Osprey Lunchbox

Watching osprey at the base and just above Union Lake Dam fish ladder is a worthwhile endeavor, as fish tend to hole up there before scaling the ladder.

By J. Morton Galetto, CU Maurice River

This past week, in mid-April, a small group of us walked Millville's Maurice River Bicycling and Walking Trail from Waltman Park to Sharp Street. Along the way we could traverse many habitats; the Maurice River borders the northern boundary, and to the south visitors pass tidal marsh, hardwood swamps, upland forest, and a few streams.

Because of the surrounding residential neighborhoods this patch of wild habitat is a bit of an oasis for wildlife, so creatures often concentrate there. We have seen otter, beaver, bald eagles, catbirds, doves, kingfisher, squirrels, snakes, frogs, turtles, woodpeckers, cormorants, crows, and, in the spring, migrants like yellow warblers, gnat catchers, swallows, and more.

There are so many species possibilities that CU Maurice River has two checklists: one for birds and the other for mammals, reptiles, & amphibians. We even have a brochure that includes a map of the habitats, a river overview, and a history of the park.

Waltman Park off North Brandriff Avenue was originally the site of a forest planted to honor the memory of 19 World War I veterans from Millville who perished in service to their country, and to commemorate those who fought in the Meuse-Argonne offensive at the war's end. Three large memorial pines still stand in the park beyond the children's playground.

In the 1960's Frank H. Stewart of Woodbury donated forested land west of and adjacent to Waltman Park for preservation. Through a joint effort between the City of Millville and the Green Acres Program, these lands were converted into the Maurice River Bicycle and

Walking Trail in 2005. On our visit we traveled from the Millville Library to Union Lake Dam: about a two-mile round trip. It is also possible to extend one's visit a half mile south and back through Buck Park, behind City Hall to the Harris Industrial Park.

The highlight of the walk was reaching the Union Lake Dam and seeing osprey hunting for a meal. These birds are also known as fish hawks because fish are the mainstay of their diet. This time of year a number of anadromous species make their trip from saltwater to freshwater to spawn. Alewife herring, striped bass, American shad, and sea lamprey are some types that employ this breeding strategy. American eel are catadromous, meaning they migrate downriver to spawn in the ocean. Gizzard shad also spawn in the spring, staying within the Delaware watershed and moving from deeper estuarine waters, where they overwinter, to tidal freshwater areas during March to late April.

These fish go up the tidal creeks south of the impoundment as well as up the main stream of the Maurice where they encounter the Union Lake Dam. Here is some historical context.

As you may know, the Maurice River and three of its tributaries, the Menantico, Manumuskin, and Muskee, are National Wild and Scenic Rivers as designated by the National Park Service. In our case the designation occurred in conjunction with local governments. The Wild and Scenic Rivers program was established to protect our nation's most pristine waterways and especially free-flowing rivers without dams. One of the primary goals was to safeguard fish movement critical to spawning.

Now this may be an "aha moment" for some of you, but there are no natural lakes in Southern New Jersey's coastal plain. If you see a lake in Southern New Jersey it speaks of an industrial past, most typically involving lumber mills, iron furnaces, grist mills, and such: generally, water-powered industries. A lake is invariably the result of human activity and is a manmade structure. In the case of Union Lake the original dam and spillway date back to the late 1700s.

This account from Maurice River Recollections Project on the CU Maurice River Website describes the dam's early beginnings:

Two businessmen who were early investors in Cumberland County were Henry Drinker

and Joseph Smith. Around 1790 they purchased 19,000 acres from the sons of William Penn. Drinker, Smith, and a few others formed the Union Company, which took ownership of 20,000 acres including land that is now part of downtown Millville. The Company built a dam and created a network of mills that drew power from the harnessed waters of Union Lake Dam. Their primary operation was logging. They installed gates that allowed logs to pass through the dam and down river to be loaded and shipped to market via the Maurice.

During the subsequent decades, the Union Company's holdings passed through several different owners. The original slow and steady development was accelerated when the Union Company was purchased by David Wood and Edward Smith. In 1814 they established the R. D. Wood and Company, a blast iron foundry on Columbia Avenue, which dealt with iron castings for stove plates and similar products. Richard D. Wood purchased the company in 1840 and built two larger foundries to cast gas and water pipes.

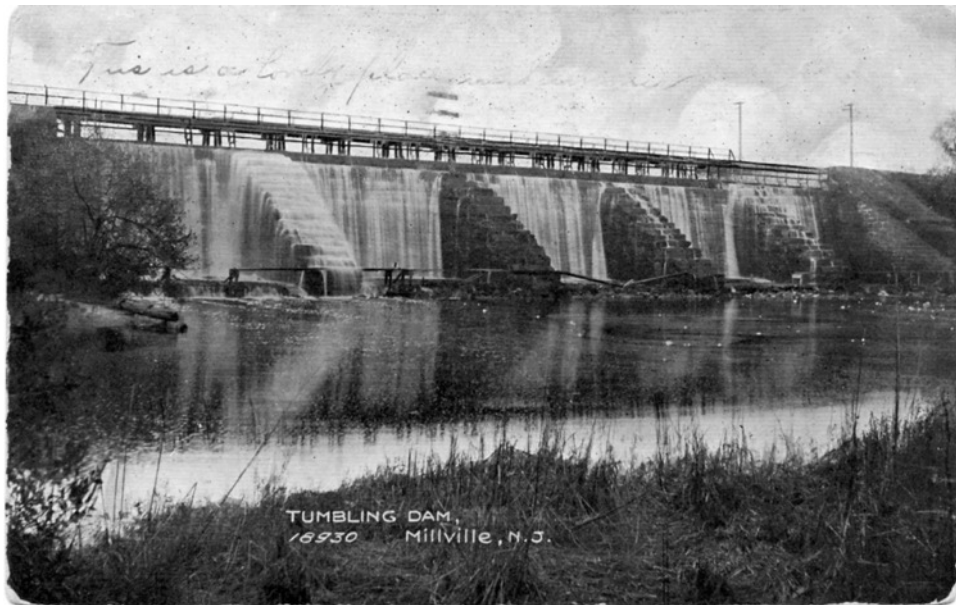
In 1854, Wood established a cotton mill next to the foundries, and then added a bleachery and dye house in 1860. The industrial complex was united under the name of Millville Manufacturing Company,

and grew to be one of the region's most extensive manufacturing facilities. The need for increased power was addressed in 1869 when Wood built a new dam over the mill's pond. His project created the 890-acre Union Lake, one of the largest manmade lakes in New Jersey.

The 1869 impoundment became known as the "Tumbling Dam" because of buttresses that were used to reinforce its face as it began to bow after being constructed. These buttresses were fashioned like steps, so the water cascaded over them or tumbled. A small replica of the spillway can be seen at the Sharp Street ballfields.



One of the many Amusements,
Union Lake Park, Millville, N. J.



TUMBLING DAM,
18930 Millville, N. J.

In the late 1800s and early 1900s Southern New Jersey boasted waterside amusement facilities. Luna Park on the shores of Union Lake was one such. It could be reached by trolley lines when Millville Rapid Transit Company added a spur from Sharp Street to Union Lake. This trolley actually crossed over the dam. Luna Park operated from the late 1800s to 1929. (Postcard Photo c. 1910 Galetto collection)



Top of dam showing footbridge on left and trolley track, right, crossing the dam. Postcard circa 1910, Galetto collection.

In 1981 much of the property around the lake was sold to the State by the Wood family - the same family that established WAWA food markets. Today the lake is partially encircled by a 5,000-acre New Jersey Fish and Wildlife Management Area.



Millville Manufacturing cotton mill. A woman tends long rows of bobbins at the factory that once existed on Columbia Ave. The cotton mill in 1860 relied on hydropower. Water ran through a raceway and into a turbine and power house. Photo circa 1936. Photo Lewis Hine, Library of Congress.

In 1987 the integrity and stability of the existing dam came into question and it was declared a "high hazard dam" because of the proximity of developed properties downstream. The State of New Jersey approved construction of a new \$10 million-dollar dam and spillway that was built in 1989 by Conti Construction.

The newly completed dam incorporated a fish ladder that allowed fish to extend their upstream journey north of the dam, a trip they had been denied for 120 years. While the dam is still an impediment to

uninterrupted upstream migration, it is possible for fish to swim the ladder and they do successfully make the trip.

It is the barrier that the dam presents that makes watching osprey at the base and just above it such an interesting phenomenon. I call it a "lunchbox" because fish tend to hole up there before scaling the ladder, which is a series of stairs and resting pools that enable them to navigate their way up the steps and into the lake. Its construction does not allow birds to hunt the ladder itself, but the entrance and exit are accessible.

CU Maurice River has put considerable effort into an osprey recovery project on the Maurice River where we steward about 40 active osprey platforms. In the early '80s there was only one osprey pair on the Maurice River due to the effects of DDT during the period of its greatest use.

On our recent walk we were thankful to be able to watch numerous osprey congregating at mid-tide, each taking time to eye its quarry.

Osprey soar, then kite (fly in place), and finally dive in a head-first stoop, switching to a foot-first entry at the final second to capture prey in their talons. They manipulate their catch, placing the head face-forward for the best aerodynamics. Further they hold it

by the head, so if the tail wriggles it doesn't transfer movement to the talons. Fisherman often control the head of a fish as well, so the tail can flop freely; it's the same technique.

Osprey are successful in capturing a fish in one of every four dives, and success is as high as 70%. The average time spent hunting before success is twelve minutes (All About Birds, Cornell of Ornithology Laboratory).

While we were at the dam there were more than a dozen osprey fishing, a real tribute to the success of CU's recovery efforts. In many instances one mate is fishing while the other is incubating their eggs. Each year we have over 80 chicks fledge in nests we have constructed and are monitoring. Soon all area nests should have eggs.

This week I was texted a very unusual photograph from Union Lake Dam. With his camera Scott Sheppard had caught an osprey with a herring in both of its talons! Since these birds hold onto a tree limb with one talon and grip the fish against the limb with the other, one of two things happened to the second fish, I believe – it was either delivered to the successful fisher's nesting mate, or forfeited back to the river!



Local photographer Scott Sheppard's photo taken on April 23, 2023.

I encourage you to go to the base of Union Lake Dam while the fish are running to see

the show. There is a parking area off Sharp Street just south of the dam. And while you are there think about this: if it were not for citizen efforts to recover osprey, these birds would doubtless not be gracing our skies but instead would be a casualty of DDT pesticide poisoning.

Sources

CU Maurice River Recollections Project
Maurice River Bicycle & Walking Trail Brochure, CU Maurice River - available at 17 E. Main St., Millville, NJ 08332 – call 856-300-5331

Early South Jersey Amusement Parks, Yesteryear Series,
Shirley Bailey